

Arizona Administrative REGISTER

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From the Publisher

ABOUT THIS PUBLICATION

The paper copy of the *Administrative Register* (A.A.R.) is the official publication for rules and rulemaking activity in the state of Arizona.

Rulemaking is defined in Arizona Revised Statutes known as the Arizona Administrative Procedure Act (APA), A.R.S. Title 41, Chapter 6, Articles 1 through 10.

The Office of the Secretary of State does not interpret or enforce rules published in the *Arizona Administrative Register* or *Code*. Questions should be directed to the state agency responsible for the promulgation of the rule as provided in its published filing.

The *Register* is cited by volume and page number. Volumes are published by calendar year with issues published weekly. Page numbering continues in each weekly issue.

In addition, the *Register* contains the full text of the Governor's Executive Orders and Proclamations of general applicability, summaries of Attorney General opinions, notices of rules terminated by the agency, and the Governor's appointments of state officials and members of state boards and commissions.

ABOUT RULES

Rules can be: made (all new text); amended (rules on file, changing text); repealed (removing text); or renumbered (moving rules to a different Section number). Rules activity published in the *Register* includes: proposed, final, emergency, expedited, and exempt rules as defined in the APA.

Rulemakings initiated under the APA as effective on and after January 1, 1995, include the full text of the rule in the *Register*. New rules in this publication (whether proposed or made) are denoted with underlining; repealed text is stricken.

WHERE IS A "CLEAN" COPY OF THE FINAL OR EXEMPT RULE PUBLISHED IN THE REGISTER?

The *Arizona Administrative Code* (A.A.C.) contains the codified text of rules. The A.A.C. contains rules promulgated and filed by state agencies that have been approved by the Attorney General or the Governor's Regulatory Review Council. The *Code* also contains rules exempt from the rulemaking process.

The printed *Code* is the official publication of a rule in the A.A.C. is prima facie evidence of the making, amendment, or repeal of that rule as provided by A.R.S. § 41-1012. Paper copies of rules are available by full Chapter or by subscription. The *Code* is posted online for free.

LEGAL CITATIONS AND FILING NUMBERS

On the cover: Each agency is assigned a Chapter in the *Arizona Administrative Code* under a specific Title. Titles represent broad subject areas. The Title number is listed first; with the acronym A.A.C., which stands for the *Arizona Administrative Code*; following the Chapter number and Agency name, then program name. For example, the Secretary of State has rules on rulemaking in Title 1, Chapter 1 of the *Arizona Administrative Code*. The citation for this chapter is 1 A.A.C. 1, Secretary of State, Rules and Rulemaking

Every document filed in the office is assigned a file number. This number, enclosed in brackets, is located at the top right of the published documents in the *Register*. The original filed document is available for 10 cents a copy.

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A price list for the *Arizona Administrative Code* is available online. You may also request a paper price list by mail. To purchase a paper Chapter, contact us at (602) 364-3223.

PUBLICATION DEADLINES
Publication dates are published in the back of the *Register*. These dates include file submittal dates with a three-week turnaround from filing to published document.

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Participate in the Process

Look for the Agency Notice

Review (inspect) notices published in the *Arizona Administrative Register*. Many agencies maintain stakeholder lists and would be glad to inform you when they proposed changes to rules. Check an agency's website and its newsletters for news about notices and meetings.

Feel like a change should be made to a rule and an agency has not proposed changes? You can petition an agency to make, amend, or repeal a rule. The agency must respond to the petition. (See A.R.S. § 41-1033)

Attend a public hearing/meeting

Attend a public meeting that is being conducted by the agency on a Notice of Proposed Rulemaking. Public meetings may be listed in the Preamble of a Notice of Proposed Rulemaking or they may be published separately in the *Register*. Be prepared to speak, attend the meeting, and make an oral comment.

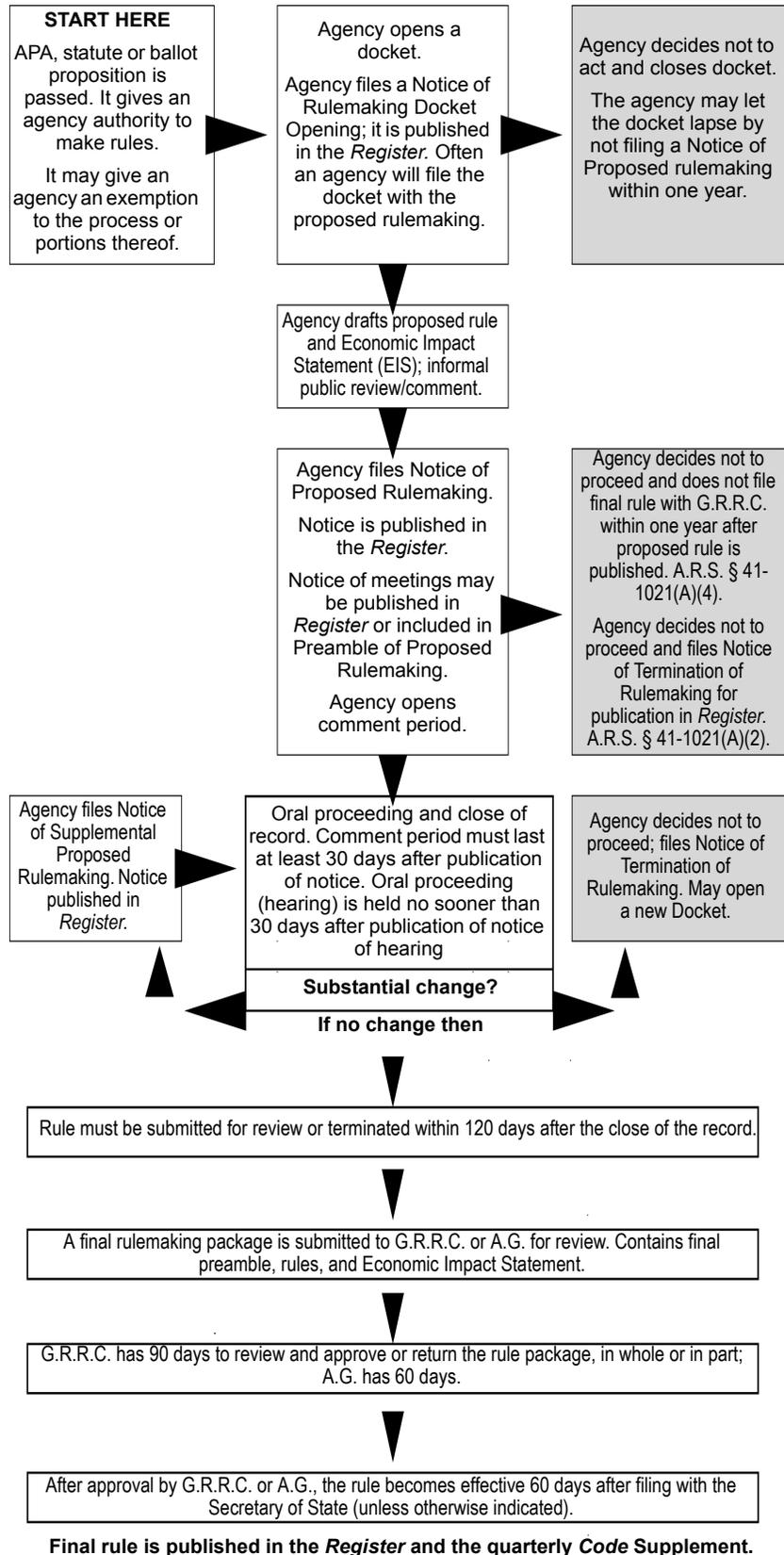
An agency may not have a public meeting scheduled on the Notice of Proposed Rulemaking. If not, you may request that the agency schedule a proceeding. This request must be put in writing within 30 days after the published Notice of Proposed Rulemaking.

Write the agency

Put your comments in writing to the agency. In order for the agency to consider your comments, the agency must receive them by the close of record. The comment must be received within the 30-day comment timeframe following the *Register* publication of the Notice of Proposed Rulemaking.

You can also submit to the Governor's Regulatory Review Council written comments that are relevant to the Council's power to review a given rule (A.R.S. § 41-1052). The Council reviews the rule at the end of the rulemaking process and before the rules are filed with the Secretary of State.

Arizona Regular Rulemaking Process



Definitions

Arizona Administrative Code (A.A.C.): Official rules codified and published by the Secretary of State's Office. Available online at www.azsos.gov.

Arizona Administrative Register (A.A.R.): The official publication that includes filed documents pertaining to Arizona rulemaking. Available online at www.azsos.gov.

Administrative Procedure Act (APA): A.R.S. Title 41, Chapter 6, Articles 1 through 10. Available online at www.azleg.gov.

Arizona Revised Statutes (A.R.S.): The statutes are made by the Arizona State Legislature during a legislative session. They are compiled by Legislative Council, with the official publication codified by Thomson West. Citations to statutes include Titles which represent broad subject areas. The Title number is followed by the Section number. For example, A.R.S. § 41-1001 is the definitions Section of Title 41 of the Arizona Administrative Procedures Act. The "§" symbol simply means "section." Available online at www.azleg.gov.

Chapter: A division in the codification of the *Code* designating a state agency or, for a large agency, a major program.

Close of Record: The close of the public record for a proposed rulemaking is the date an agency chooses as the last date it will accept public comments, either written or oral.

Code of Federal Regulations (CFR): The *Code of Federal Regulations* is a codification of the general and permanent rules published in the *Federal Register* by the executive departments and agencies of the federal government.

Docket: A public file for each rulemaking containing materials related to the proceedings of that rulemaking. The docket file is established and maintained by an agency from the time it begins to consider making a rule until the rulemaking is finished. The agency provides public notice of the docket by filing a Notice of Rulemaking Docket Opening with the Office for publication in the *Register*.

Economic, Small Business, and Consumer Impact Statement (EIS): The EIS identifies the impact of the rule on private and public employment, on small businesses, and on consumers. It includes an analysis of the probable costs and benefits of the rule. An agency includes a brief summary of the EIS in its preamble. The EIS is not published in the *Register* but is available from the agency promulgating the rule. The EIS is also filed with the rulemaking package.

Governor's Regulatory Review (G.R.R.C.): Reviews and approves rules to ensure that they are necessary and to avoid unnecessary duplication and adverse impact on the public. G.R.R.C. also assesses whether the rules are clear, concise, understandable, legal, consistent with legislative intent, and whether the benefits of a rule outweigh the cost.

Incorporated by Reference: An agency may incorporate by reference standards or other publications. These standards are available from the state agency with references on where to order the standard or review it online.

Federal Register (FR): The *Federal Register* is a legal newspaper published every business day by the National Archives and Records Administration (NARA). It contains federal agency regulations; proposed rules and notices; and executive orders, proclamations, and other presidential documents.

Session Laws or "Laws": When an agency references a law that has not yet been codified into the Arizona Revised Statutes, use the word "Laws" is followed by the year the law was passed by the Legislature, followed by the Chapter number using the abbreviation "Ch.," and the specific Section number using the Section symbol (§). For example, Laws 1995, Ch. 6, § 2. Session laws are available at www.azleg.gov.

United States Code (U.S.C.): The Code is a consolidation and codification by subject matter of the general and permanent laws of the United States. The Code does not include regulations issued by executive branch agencies, decisions of the federal courts, treaties, or laws enacted by state or local governments.

Acronyms

A.A.C. – *Arizona Administrative Code*

A.A.R. – *Arizona Administrative Register*

APA – *Administrative Procedure Act*

A.R.S. – *Arizona Revised Statutes*

CFR – *Code of Federal Regulations*

EIS – *Economic, Small Business, and Consumer Impact Statement*

FR – *Federal Register*

G.R.R.C. – *Governor's Regulatory Review Council*

U.S.C. – *United States Code*

About Preambles

The Preamble is the part of a rulemaking package that contains information about the rulemaking and provides agency justification and regulatory intent.

It includes reference to the specific statutes authorizing the agency to make the rule, an explanation of the rule, reasons for proposing the rule, and the preliminary Economic Impact Statement.

The information in the Preamble differs between rulemaking notices used and the stage of the rulemaking.



NOTICES OF PROPOSED RULEMAKING

This section of the *Arizona Administrative Register* contains Notices of Proposed Rulemakings.

A proposed rulemaking is filed by an agency upon completion and submittal of a Notice of Rulemaking Docket Opening. Often these two documents are filed at the same time and published in the same *Register* issue.

When an agency files a Notice of Proposed Rulemaking under the Administrative Procedure Act (APA), the notice is published in the *Register* within three weeks of filing. See the publication schedule in the back of each issue of the *Register* for more information.

Under the APA, 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 making, amending, or repealing any rule. (A.R.S. §§ 41-1013 and 41-1022)

The Office of the Secretary of State is the filing office and publisher of these rules. Questions about the interpretation of the proposed rules should be addressed to the agency the promulgated the rules. Refer to item #4 below to contact the person charged with the rulemaking and item #10 for the close of record and information related to public hearings and oral comments.

NOTICE OF PROPOSED RULEMAKING

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 11. STATE BOARD OF DENTAL EXAMINERS

[R16-158]

PREAMBLE

1. **Article, Part, or Section Affected (as applicable)**

R4-11-401	Amend
R4-11-402	Amend
R4-11-403	New Section
R4-11-405	Amend
R4-11-406	Amend
2. **Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):**

Authorizing statute: A.R.S. §§ 32-1207(A)(1) and (12), 32-1207(B)(3)(C), and 32-1207(E) and (F)
 Implementing statute: A.R.S. §§ 32-1213(B)(4), (C), and (D), 32-1232(A) and (B), 32-1236(C), (D), and (F), 32-1240(B), 32-1262(G), 32-1284(A), 32-1287(A), (C), (D), and (F), 32-1292.01(B), 32-1297.04, 32-1297.06, and 32-1299.23
3. **Citations to all related notices published in the Register as specified in R1-1-409(A) that pertain to the record of the proposed rule:**

Notice of Rulemaking Docket Opening: 22 A.A.R. 2056, August 5, 2016
4. **The agency's contact person who can answer questions about the rulemaking:**

Name: Elaine Hugunin, Executive Director
 Address: State Board of Dental Examiners
 4205 N. 7th Ave., Suite 300
 Phoenix, AZ 85013
 Telephone: (602) 542-4493
 Fax: (602) 242-1445
 E-mail: elaine.hugunin@azdentalboard.us
 Website: www.dentalboard.az.gov
5. **An agency's justification and reason why a rule should be made, amended, repealed, or renumbered, to include an explanation about the rulemaking:**

A.R.S. § 41-1008(D) requires an agency to comply with the provisions of the Administrative Procedure Act when establishing or increasing a fee. The Board is placing in rule the fees it is expressly authorized to collect for an initial or renewal license of a dentist (A.R.S. § 1236), dental hygienists (A.R.S. § 32-1287), and denturists (A.R.S. § 32-1297.06) and registration as a business entity offering dental services (A.R.S. § 32-1213). The Board is also placing in rule the fee for late renewal by a business entity (A.R.S. § 32-1213(D)) and for a permit to administer general anesthesia or semiconscious, conscious, or oral sedation (A.R.S. § 32-1207(E)).



The Board’s statutes establish some fees the Board is authorized to collect. In the interest of assisting applicants and licensees comply with statute, the Board is placing those fees in rule. The fees established in statute are:

- Jurisprudence examination fee for dentists (A.R.S. § 32-1232(B))
- Jurisprudence examination fee for dental hygienists (A.R.S. § 32-1984(A))
- License by credential for dentists (A.R.S. § 32-1240(B))
- License by credential for dental hygienists (A.R.S. § 32-1292.01(B))
- Reinstatement penalty for dentists (A.R.S. §32-1236(D))
- Reinstatement penalty for dental hygienists (A.R.S. §32-1287(D))
- Reinstatement penalty fee for denturists (A.R.S. §32-1297.06(D))

To reduce the balance in the Dental Board, the Board is reducing by 15 percent the amount collected to renew a license and reducing the amount collected for a permit to administer general anesthesia or semiconscious, conscious, or oral sedation at multiple locations. The Board is also extending the term of a permit to administer general anesthesia or semiconscious, conscious, or oral sedation from three to five years. The Board is also no longer collecting a convenience fee for taking payments by credit card.

An exemption from EO2015-03 was provided by Christina Corieri, Policy Advisor for Health and Human Services in the Governor’s Office, in an e-mail dated June 24, 2016.

6. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

The Board does not intend to review or rely on a study in its evaluation of or justification for any rule in this rulemaking.

7. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking 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:

Because the Board has been collecting the licensing fees being placed in rule, the economic impact on applicants and licensees will be minimal. The 15 percent reduction in renewal fees, the reduction from \$300 to \$25 per additional location for using a permit to administer general anesthesia or semiconscious, conscious, or oral sedation at multiple locations, extending the term of a permit to administer general anesthesia or semiconscious, conscious, or oral sedation, and no longer collecting a convenience fee for use of a credit card will have a positive economic benefit for licensees. These reductions will reduce the balance the Board carries in its fund and will reduce the amount the Board contributes to the general fund.

9. The agency's contact person who can answer questions about the economic, small business, and consumer impact statement:

Name: Elaine Hugunin, Executive Director
 Address: State Board of Dental Examiners
 4205 N. 7th Ave., Suite 300
 Phoenix, AZ 85013
 Telephone: (602) 542-4493
 Fax: (602) 242-1445
 E-mail: elaine.hugunin@azdentalboard.us
 Website: www.dentalboard.az.gov

10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

An oral proceeding regarding the proposed rules will be held as follows:

Date: Wednesday, October 12, 2016
 Time: 10:00 a.m.
 Location: 4205 N. 7th Ave.
 Board Conference Room
 Phoenix, AZ 85013

11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

None

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:



The licenses for which fees are being placed in Article 4 are general permits consistent with A.R.S. § 41-1037 because they are issued to qualified individuals or entities to conduct activities that are substantially similar in nature.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

The rules are not more stringent than federal law because no federal law is directly applicable to the fees charged by the Board.

c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:

No analysis was submitted.

12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

None

13. The full text of the rules follows:

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 11. STATE BOARD OF DENTAL EXAMINERS

ARTICLE 4. FEES

Section

- R4-11-401. Retired or Disabled Licensure Renewal Fees Fee
- R4-11-402. Business Entity Fees
- R4-11-403. ~~Repealed Licensing Fees~~
- R4-11-405. ~~Other Fees Charges for Board Services~~
- R4-11-406. ~~Fees for Anesthesia and Sedation Permits~~ Permit Fees

ARTICLE 4. FEES

R4-11-401. Retired or Disabled Licensure Renewal Fees Fee

As expressly authorized under A.R.S. § 32-1207(B)(3)(c), the licensure renewal fee for a retired or disabled dentist or dental hygienist is \$15.

- ~~A. Dentist. Retired or disabled licensure renewal: \$15.00.~~
- ~~B. Dental Hygienist. Retired or disabled licensure renewal: \$15.00.~~

R4-11-402. Business Entity Fees

~~A. Under A.R.S. § 32-1213(B)(3), the fee for a~~ As expressly authorized under A.R.S. § 32-1213, the Board establishes and shall collect the following fees from a Business Entity offering dental services:

1. Initial triennial registration is \$100 per year, \$300 per location;
2. Renewal of triennial registration, \$300 per location; and
3. Late triennial registration renewal, \$100 per location in addition to the fee under subsection (2).

~~B. The civil penalty fee for failure to notify the Board of a change in either business entity name, address, telephone number, location of any office, or licensee responsible for dental services within 30 days after the change is \$50. The civil penalty fee increases to \$100 if a business entity fails to notify the Board of the change within 60 days.~~

R4-11-403. ~~Repealed Licensing Fees~~

A. As expressly authorized under A.R.S. §§ 32-1236, 32-1287, and 32-1297.06, the Board establishes and shall collect the following licensing fees:

1. Dentist triennial renewal fee: \$510;
2. Dentist prorated initial license fee: \$110;
3. Dental hygienist triennial renewal fee: \$255;
4. Dental hygienist prorated initial license fee: \$55;
5. Denturist triennial renewal fee: \$233; and
6. Denturist prorated initial license fee: \$46.

B. The following license-related fees are established in or expressly authorized by statute. The Board shall collect the fees:

1. Jurisprudence examination fee:
 - a. Dentists: \$300;
 - b. Dental Hygienists: \$100; and
 - c. Denturists: \$250.
2. Licensure by credential fee:
 - a. Dentists: \$2,000; and
 - b. Dental Hygienists: \$1,000.



- 3. Penalty to reinstate an expired license or certificate: \$100 for a dentist, dental hygienist, or denturist in addition to renewal fee specified under subsection (A).
- 4. Penalty for a dentist, dental hygienist, or denturist who fails to notify Board of a change of mailing address:
 - a. Failure after 10 days: \$50; and
 - b. Failure after 30 days: \$100.

R4-11-405. ~~Other Fees~~ Charges for Board Services

The Board shall charge the following for the services provided:

- ~~A-1.~~ Duplicate license: ~~\$25.00;~~ \$25;
- ~~B-2.~~ Duplicate certificate: ~~\$25.00;~~ \$25;
- ~~C-3.~~ License verification:
 - 1-a. For licensee: ~~\$25.00;~~ \$25; and
 - 2-b. For non-licensee: ~~\$5.00;~~ \$5;
- ~~D-4.~~ Copy of ~~tape~~ audio recording: ~~\$10.00;~~ \$10;
- ~~E-5.~~ Photocopies (per page): ~~\$0.25;~~ \$.25;
- ~~F-6.~~ Mailing lists:
 - 1-a. Dentists:
 - a-i. In-state licensees - paper or labels: ~~\$150.00;~~ \$150;
 - b-ii. All licensees - paper or labels: ~~\$175.00;~~ \$175; and
 - e-iii. ~~Computer disk~~ Mailing list in digital format: ~~\$100.00~~ \$100;
 - 2-b. Dental hygienists:
 - a-i. In-state licensees - paper or labels: ~~\$150.00;~~ \$150;
 - b-ii. All licensees - paper or labels: ~~\$175.00;~~ \$175; and
 - e-iii. ~~Computer disk~~ Mailing list in digital format: ~~\$100.00;~~ \$100; and
 - 3-c. Denturists: All certificate holders - paper, ~~or~~ labels, ~~or~~ digital format: ~~\$5.00;~~ \$5; and
- ~~G-7.~~ Board meeting agendas and minutes (mailed directly to consumer):
 - 1-a. Agendas and minutes (~~annual fee~~): ~~\$75.00;~~ \$75 for 12 months;
 - 2-b. Agendas only (~~annual fee~~): ~~\$25.00;~~ \$25 for 12 months; and
 - 3-c. Minutes only (~~annual fee~~): ~~\$50.00~~ \$50 for 12 months.

R4-11-406. ~~Fees for Anesthesia and Sedation Permits~~ Permit Fees

- A. ~~Under A.R.S. § 32-1207(D), the fee for a~~ As expressly authorized under A.R.S. § 32-1207, the Board establishes and shall collect the following fees:
 - 1. ~~Section 1301 permit to administer general anesthesia and semi-conscious sedation or a~~ fee: \$300 plus \$25 for each additional location;
 - 2. ~~Section 1302 or permit fee:~~ \$300 plus \$25 for each additional location;
 - 3. ~~Section 1303 permit to administer conscious or oral conscious sedation~~ fee: \$300 plus \$25 for each additional location; and
 - 4. ~~Section 1304 permit fee: is~~ \$300 per location plus \$25 for each additional location.
- B. Upon successful completion of ~~the an~~ an initial onsite evaluation and upon receipt of the required permit fee, the Board shall issue a separate Section 1301, 1302, ~~or~~ 1303, or 1304 permit to a dentist for each location requested by the dentist. A permit expires on December 31 of every ~~third~~ third fifth year.
- C. ~~The renewal fee for each~~ Permit renewal fees:
 - 1. ~~Section 1301 permit renewal fee:~~ \$300 plus \$25 for each additional location;
 - 2. ~~Section 1302, or permit renewal fee:~~ \$300 plus \$25 for each additional location;
 - 3. ~~Section 1303 permit is~~ renewal fee: \$300 per location; plus \$25 for each additional location; and
 - 4. ~~Section 1304 permit renewal fee:~~ \$300 plus \$25 for each additional location.

NOTICE OF PROPOSED RULEMAKING

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 17. ARIZONA REGULATORY BOARD OF PHYSICIAN ASSISTANTS

[R16-159]

PREAMBLE

<u>1. Article, Part, or Section Affected (as applicable)</u>	<u>Rulemaking Action</u>
Table 1	Amend
R4-17-202	Amend
R4-17-203	Amend
R4-17-204	Amend



R4-17-205	Amend
R4-17-206	Amend
Article 3	New Article
R4-17-301	New Section
R4-17-302	New Section
R4-17-303	New Section
R4-17-304	New Section
R4-17-305	New Section
R4-17-306	New Section

2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):

Authorizing statute: A.R.S. § 32-2504(B)

Implementing statute: A.R.S. §§ 32-2505, 32-2521, 32-2523, 32-2526, and 41-1072

3. Citations to all related notices published in the Register as specified in R1-1-409(A) that pertain to the record of the proposed rule:

Notice of Rulemaking Docket Opening: 22 A.A.R. 2217, August 19 2, 2016

4. The agency's contact person who can answer questions about the rulemaking:

Name: Patricia McSorley, Executive Director
 Address: Arizona Regulatory Board of Physician Assistants
 9545 E. Doubletree Ranch Road
 Scottsdale, AZ 85258
 Telephone: (480) 551-2700
 Fax: (480) 551-2704
 E-mail: patricia.mcsorley@azmd.gov
 Web site: www.azmd.gov

5. An agency's justification and reason why a rule should be made, amended, repealed, or renumbered, to include an explanation about the rulemaking:

The rules are being amended in response to four significant factors: A five-year-review report approved by the Council on June 2, 2015; Laws 2015, Chapter 84; Laws 2015, Chapter 46; and the decision by the National Commission on Certification of Physician Assistants to move to a 10- rather than six-year renewal cycle of certification. In this rulemaking, the Board:

- Consistent with Laws 2015, Chapter 84, amends the rules to provide for biennial license renewal and adjusts the continuing education and renewal fees accordingly;
- Amends R4-17-202 to be consistent with the 10-year renewal of certification required by NCCPA;
- Amends R4-17-203 to request documentation relating to malpractice actions earlier in the application process;
- Amends R4-17-204 and R4-17-206 to ensure provisions are consistent with the Americans with Disabilities Act;
- Consistent with Laws 2015, Chapter 46, amends R4-17-203 and R4-17-206 regarding the responsibility of a physician assistant who registers under the Controlled Substances Act to also register with the Board of Pharmacy and obtain access to the Controlled Substances Prescription Monitoring Program Database; and
- Makes new Sections memorializing the duties the Board has delegated to the executive director.

An exemption from Executive Order 2015-01 was provided for part of this rulemaking by Christina Corieri, Policy Advisor for Health and Human Services in the Governor's office in an e-mail dated September 24, 2015. Ms. Corieri provided an exemption to EO2016-03 for an additional part of this rulemaking in an e-mail dated July 25, 2016.

6. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

The Board does not intend to review or rely on a study in its evaluation of or justification for any of the rules in this rulemaking.

7. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking 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 Board determined this rulemaking will have minimal economic impact on applicants and licensees because it



simply makes the rules consistent with recent statutory changes, the Americans with Disabilities Act, and recent changes made by the NCCPA, which is a national organization that certifies Physician Assistants. Placing in rule the duties the Board delegated to the executive director enables the Board to operate in a more efficient and cost effective manner while providing quality service to applicants and licensees.

9. The agency's contact person who can answer questions about the economic, small business, and consumer impact statement:

Name: Patricia McSorley, Executive Director
Address: Arizona Regulatory Board of Physician Assistants
9545 E. Doubletree Ranch Road
Scottsdale, AZ 85258
Telephone: (480) 551-2700
Fax: (480) 551-2704
E-mail: patricia.mcsorley@azmd.gov
Web site: www.azmd.gov

10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

An oral proceeding regarding the proposed rules will be held as follows:

Date: Wednesday, October 12, 2016
Time: 4:00 p.m.
Location: 9545 E. Doubletree Ranch Road
Boardroom
Scottsdale, AZ 85258

11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

None

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

The licenses listed in Table 1 are general permits consistent with A.R.S. § 41-1037 because they are issued to qualified individuals or entities to conduct activities that are substantially similar in nature.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

None of the rules is more stringent than federal law. Although there are many federal laws that apply to the provision of health care and prescribing controlled substances, none is specifically applicable to the subject matter of this rulemaking.

c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:

No analysis was submitted.

12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

None

13. The full text of the rules follows:

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 17. ARIZONA REGULATORY BOARD OF PHYSICIAN ASSISTANTS

ARTICLE 1. GENERAL PROVISIONS

Section
Table 1.

~~Time frames~~ Time Frames

ARTICLE 2. PHYSICIAN ASSISTANT LICENSURE

Section

- R4-17-202. Examination
- R4-17-203. Regular License Application
- R4-17-204. Fees and Charges
- R4-17-205. Continuing Medical Education; Request for Extension of Time
- R4-17-206. License Renewal

ARTICLE 3. ~~REPEALED~~ DUTIES OF THE EXECUTIVE DIRECTOR



- Section
- R4-17-301. ~~Repealed~~ Dismissal of Complaint
- R4-17-302. ~~Repealed~~ Referral to Formal Hearing
- R4-17-303. ~~Repealed~~ Non-disciplinary Consent Agreement
- R4-17-304. ~~Repealed~~ Request for Inactive Status and License Cancellation
- R4-17-305. ~~Repealed~~ Referral to Formal Interview
- R4-17-306. Denial of License

ARTICLE 1. GENERAL PROVISIONS

Table 1. ~~Time-frames~~ Time Frames (in days)

Type of License	Overall Time frame <u>Time Frame</u>	Administrative Review Time frame <u>Time Frame</u>	Time to Respond to Deficiency Notice	Substantive Review Time frame <u>Time Frame</u>	Time to Respond to Request for Additional Information
Regular License including schedule II or schedule III controlled substances approval R4-17-203	120	30	365	90	270 <u>90</u>
License Renewal R4-17-206	30 <u>75</u>	30	Not later than Sept. 30 of each year <u>60</u>	Not Applicable <u>45</u>	Not Applicable <u>60</u>

ARTICLE 2. PHYSICIAN ASSISTANT LICENSURE

R4-17-202. Examination

- ~~A.~~ An applicant for a regular license as a physician assistant shall pass the PANCE or PANRE and be certified by the NCCPA at the time of application for licensure.
- ~~B.~~ ~~An applicant for a regular license who has not passed the PANCE within six years preceding the date of the application shall submit documentation that shows the applicant passed the PANRE within six years preceding the date of the application.~~

R4-17-203. Regular License Application

- A. An applicant for a regular license shall submit a completed application to the Board that includes:
 1. The applicant's:
 - a. First, last, and middle name;
 - b. Every other name used by the applicant;
 - c. Social Security number;
 - d. ~~Practice address and telephone number~~ Office, mailing, e-mail, and home addresses;
 - e. ~~Mailing address, if different from the practice address~~ Office, mobile, and home telephone numbers; and
 - f. ~~Home address and telephone number;~~ and
 - ~~g.~~ Birth date and city state or country of birth;
 2. The name and address of the approved program completed by the applicant and the date of completion;
 3. The name of each state or province in which the applicant has ever been certified, registered, or licensed as a physician assistant, including the certificate, registration, or license number, and current status;
 4. Whether the applicant has practiced as a physician assistant since graduation from a physician assistant program or for 10 continuous years before the date the application was submitted to the Board and if not, an explanation;
 5. A questionnaire that includes answers to the following:
 - a. Whether the applicant has had an application for a certificate, registration, or license refused or denied by any licensing authority, and if so, an explanation;
 - b. Whether the applicant has had the privilege of taking an examination for a professional license refused or denied by any entity, and if so, an explanation;
 - c. Whether the applicant has ever resigned or been requested to resign, been suspended or expelled from, been placed on probation, or been fined while enrolled in an approved program in a medical school or a postsecondary educational program, and if so, an explanation;
 - d. Whether, while attending an approved program, the applicant has ever had any action taken against the applicant by ~~an~~ the approved program, resigned, or been asked to leave the approved program for any amount of time, and if so, an explanation;
 - e. Whether the applicant has ever surrendered a health professional license, and if so, an explanation;



- f. Whether the applicant has ever had a health professional license suspended or revoked, or whether any other disciplinary action has ever been taken against a health professional license held by the licensee, and if so, an explanation;
 - g. Whether the applicant is currently under investigation by any health profession regulatory authority, ~~health care~~ health care association, licensed health care institution, or there are any pending complaints or disciplinary actions against the applicant, and if so, an explanation;
 - h. Whether the applicant has ever had any action taken against the applicant’s privileges, including termination, resignation, or withdrawal by a health care institution or health profession regulatory authority, and if so, an explanation;
 - i. Whether the applicant has ever had a federal or state regulatory authority take any action against the applicant’s authority to prescribe, dispense, or administer controlled substances including revocation, suspension, or denial, or whether the applicant ever surrendered ~~such~~ the authority in lieu of any of these actions, and if so, an explanation;
 - j. Whether the applicant has ever been charged with, convicted of, pleaded guilty to, or entered into a plea of no contest to a felony or misdemeanor involving moral turpitude or has been pardoned or had a record expunged or vacated, and if so, an explanation;
 - k. Whether the applicant has ever been charged with or convicted of a violation of any federal or state drug statute, rule, or regulation, regardless of whether a sentence was or was not imposed, and if so, an explanation;
 - l. Whether the applicant, ~~within the last 10 years from the date of the application,~~ has been named as a defendant in a malpractice matter currently pending or that resulted in had a judgment or a settlement entered against the applicant ~~in a medical malpractice suit,~~ and if so, an explanation;
 - m. Whether the applicant has ever been court-martialed or discharged other than honorably from any branch of military service, and if so, an explanation;
 - n. Whether the applicant has ever been involuntarily terminated from a health professional position, resigned, or been asked to leave the health care position, and if so, an explanation;
 - o. Whether the applicant has ever been convicted of insurance fraud or received a sanction, including limitation, suspension, or removal from practice, imposed by any state or the federal government, and if so, an explanation; and
 - p. Whether the applicant, within the ~~last~~ three years before the date of the application, has completed 45 hours in pharmacology or clinical management of drug therapy or is certified by a national commission on the certification of physician assistants or its successor;
6. A confidential questionnaire that includes answers to the following:
- a. ~~Whether the applicant, within the last five years before the date of the application, has been diagnosed with or treated for bi-polar disorder, schizophrenia, paranoia, or any other psychotic disorder, and if so, an explanation; Whether the applicant has received treatment within the last five years for use of alcohol or a controlled substance, prescription-only drug, or dangerous drug or narcotic or a physical, mental, emotional, or nervous disorder or condition that currently impairs the applicant’s ability to exercise the judgment and skills of a medical professional;~~
 - b. ~~Whether the applicant is currently being treated by a health professional or, within five years from the date of the application, has been treated by a health professional for substance use disorder or participated in a rehabilitation program for a substance use disorder, and if so, an explanation that includes: If the answer to subsection (A)(6)(a) is yes:~~
 - i. ~~The name of each health professional or health care institution that addressed the substance use disorder and a discharge summary that includes progress made by the applicant; or A detailed description of the use, disorder, or condition; and~~
 - ii. ~~A copy of the confidential agreement or order issued by a health professional or health care institution, if applicable; and An explanation of whether the use, disorder, or condition is reduced or ameliorated because the applicant receives ongoing treatment and if so, the name and contact information for all current treatment providers and for all monitoring or support programs in which the applicant is currently participating; and~~
 - c. ~~Whether the applicant currently has any disease or condition, including a behavioral health illness or condition, substance use disorder, physical disease or condition that interferes with the applicant’s ability to perform health care tasks authorized by A.R.S. § 32-2531 and if so, an explanation; A copy of any public or confidential agreement or order relating to the use, disorder, or condition, issued by a licensing agency or health care institution within the last five years, if applicable;~~
7. Consistent with the Board’s statutory authority, ~~such~~ other information as the Board may ~~require~~ deem necessary to ~~fully~~ evaluate the applicant fully; and
8. A sworn statement that complies with A.R.S. § 32-2522(C).
- B.** In addition to the requirements in subsection (A), an applicant shall submit the following to the Board:
- 1. Documentation of citizenship or alien status that conforms to A.R.S. § 41-1080;



2. Documentation of a legal name change if the applicant's legal name is different from that shown on the document submitted in accordance with subsection (B)(1);
 3. A form provided by the Board and completed by the applicant that lists all current or past employment with health professionals or health care institutions within five years before the date of application or since graduation from a physician assistant program, if less than five years, including each health professional's or health care institution's name, address, and dates of employment;
 4. ~~If the applicant has more than one malpractice settlement or judgment against the applicant within 10 years from the date of the application, a form provided by the Board for each malpractice settlement or judgment against the applicant that includes:~~ Verification of any medical malpractice matter currently pending or resulting in a settlement or judgment against the applicant, including a copy of the complaint and either the agreed terms of settlement or the judgment and a narrative statement specifying the nature of the occurrence resulting in the medical malpractice action. An applicant who is unable to obtain a document required under this subsection may submit a written request for a waiver of the requirement. The applicant shall include the following information in a request for waiver:
 - a. ~~The applicant's name; The document for which waiver is requested;~~
 - b. ~~A description of the event that led to the malpractice settlement or judgment including:~~ Detailed description of efforts made by the applicant to provide the required document; and
 - i. ~~The patient's name, age, and sex;~~
 - ii. ~~The date of occurrence;~~
 - iii. ~~Location of occurrence; and~~
 - iv. ~~A detailed narrative of the event;~~
 - c. ~~The amount of the settlement or judgment; Reason the applicant's inability to provide the required document is due to no fault of the applicant; and~~
 - d. ~~The date the settlement was entered into or judgment was made;~~
 - e. ~~The amount of the settlement or judgment attributed to the applicant; and~~
 - f. ~~Whether any state medical board has investigated the matter; and~~
 5. The fee required in R4-17-204.
- C. In addition to the requirements in subsections (A) and (B), an applicant shall have the following directly submitted to the Board:
1. A copy of the applicant's certificate of successful completion of the ~~NCCPA~~ PANCE or PANRE examination and the applicant's examination score provided by the NCCPA;
 2. An approved program form provided by the Board, completed and signed by the director or administrator of the approved program that granted the applicant a physician assistant degree, that includes the:
 - a. Applicant's full name,
 - b. Type of degree earned by the applicant,
 - c. Name of the physician assistant program completed by the applicant,
 - d. Starting and ending dates, and
 - e. Date the applicant's degree was granted.
- D. When the Board issues a regular license to an applicant, the Board is also ~~approving~~ approves the applicant to issue prescriptions ~~or~~ and dispense or issue schedule II or schedule III controlled substances subject to the limits and requirements specified in A.R.S. § 32-2532.

R4-17-204. Fees and Charges

- A. The As expressly authorized under A.R.S. § 32-2526(A), the Board shall charge the following fees, which are not refundable unless A.R.S. § 41-1077 applies:
1. License application - \$125.00;
 2. Regular license - ~~\$185.00~~ 370.00, prorated for each month remaining in the ~~annual~~ biennial period;
 3. Regular license renewal - ~~\$185.00~~ 370.00 if the renewal application is postmarked no later than ~~July 1~~ the applicant's birthdate; and
 4. Penalty for late renewal - \$100.00;.
- B. As expressly authorized under A.R.S. § 32-2526(B), the Board establishes the following charges for providing the services listed:
- ~~5-1.~~ Duplicate license - \$25.00;
 - ~~6-2.~~ Copies of Board documents - \$1.00 for first three pages, \$.25 for each additional page;
 - ~~7-3.~~ Medical Directory (CD-ROM) - \$30.00;
 - ~~8-4.~~ Data Disk - \$100.00; and
 - ~~9-5.~~ License verification - \$10.00.

R4-17-205. Continuing Medical Education; Request for Extension of Time

- A. Under A.R.S. § 32-2523(A), renewal of a license is conditioned on the licensee completing 40 hours of category I continuing medical education during each biennial license period.
- B. During a licensee's first biennial license period, the licensee may complete a pro-rated number of continuing medical education hours established by the Board.



~~A.C.~~ A licensee who is unable to complete ~~20~~ the required hours of continuing medical education for any of the reasons in A.R.S. § 32-2523(E) may submit a written request to the Board for an extension no later than 30 days before expiration of the license that contains:

1. The name, address, and telephone number of the licensee;
2. The reason for the request;
3. The number of continuing medical education hours completed during the biennial license period;
- ~~3-4.~~ The date by dates on which the remaining hours of continuing medical education will be scheduled to be completed; and
- ~~4-5.~~ The signature of the licensee.

~~B.D.~~ The Board shall send a written notice of approval ~~or denial~~ of the extension request within seven days from the date of receipt of the request ~~if the Board determines:~~

1. The extension is needed for a reason specified in A.R.S. § 32-2523(E).
2. The remaining hours of continuing medical education will be completed within 30 days, and
3. The extension is in the best interest of the state.

R4-17-206. License Renewal

A. To renew a license, a licensee shall submit a completed application to the Board that includes:

1. An application form that contains the licensee's:
 - a. ~~First, and last, names~~ and middle ~~initial~~ names;
 - b. Arizona license number;
 - c. Office, mailing, e-mail, and home addresses;
 - d. Office, mobile, and home ~~phone~~ telephone numbers;
2. A questionnaire that includes answers to the following since the last renewal date:
 - a. Whether the licensee has had an application for a certificate, registration, or license refused or denied by any licensing authority, and if so, an explanation;
 - b. Whether the licensee has had the privilege of taking an examination for a professional license refused or denied by any entity, and if so, an explanation;
 - c. Whether the licensee has voluntarily surrendered a health care professional license, and if so, an explanation;
 - d. Whether the licensee has had a health professional license suspended or revoked, or whether any other disciplinary action has been taken against a health professional license held by the licensee, and if so, an explanation;
 - ~~e.~~ Whether the licensee is currently under investigation by any health profession regulatory authority, health care association, licensed health care institution, or there are any pending complaints or disciplinary actions against the applicant, and if so, an explanation;
 - ~~f-e.~~ Whether the licensee has had any action taken against the applicant's privileges, including termination, resignation, or withdrawal by a health care institution or health profession regulatory authority, and if so, an explanation;
 - ~~g-f.~~ Whether the licensee has had a federal or state regulatory authority take any action against the licensee's authority to prescribe, dispense, or administer controlled substances including revocation, suspension, or denial, or whether the applicant surrendered ~~such~~ the authority in lieu of any of these actions, and if so, an explanation;
 - ~~h-g.~~ Whether the licensee has been charged with, convicted of, pleaded guilty to, or entered into a plea of no contest to a felony or misdemeanor involving moral turpitude or an alcohol- or drug-related offense in any state, or has been pardoned or had a record expunged or vacated, and if so, an explanation;
 - ~~i-h.~~ Whether the licensee has been court-martialed or discharged other than honorably from any branch of military service, and if so, an explanation;
 - ~~j-i.~~ Whether the licensee has been involuntarily terminated from a health professional position with any city, county, state, or federal government, and if so, an explanation;
 - ~~k-j.~~ Whether the licensee has been convicted of insurance fraud or a state or the federal government has sanctioned or taken any action against the licensee, such as suspension or removal from practice, and if so, an explanation;
3. Consistent with the Board's statutory authority, ~~such~~ other information as the Board may ~~require~~ deem necessary to ~~fully~~ evaluate the licensee fully;
4. A dated and sworn statement by the licensee verifying that during the past ~~state fiscal year~~ biennial license period, the licensee completed ~~a minimum of 20~~ at least 40 hours of Category I continuing medical education as required by A.R.S. § 32-2523;
5. The fee required in R4-17-204; ~~and~~
6. A confidential questionnaire that includes answers to the following:
 - a. ~~Whether the licensee, since the last renewal date, has been diagnosed with or treated for bi-polar disorder, schizophrenia, paranoia, or any other psychotic disorder, and if so, an explanation; Whether the applicant has received treatment since the last renewal for use of alcohol or a controlled substance, prescription-only drug, or dangerous drug or narcotic or a physical, mental, emotional, or nervous disorder or condition that currently impairs the applicant's ability to exercise the judgment and skills of a medical professional;~~



- b. ~~Whether the licensee is currently being treated or has been treated since the last renewal date for substance use disorder or participated in a rehabilitation program, and if so, an explanation that includes: If the answer to subsection (A)(6)(a) is yes:~~
- i. ~~The name of each health professional or health care institution that addressed the substance use disorder and a discharge summary that includes progress; or A detailed description of the use, disorder, or condition; and~~
 - ii. ~~A copy of the confidential agreement or order issued by a health professional or health care institution, if applicable; and An explanation of whether the use, disorder, or condition is reduced or ameliorated because the applicant receives ongoing treatment and if so, the name and contact information for all current treatment providers and for all monitoring or support programs in which the applicant is currently participating; and~~
- c. ~~Whether the licensee currently has any disease or condition including a behavioral health illness or condition, substance abuse disorder, physical disease or condition that interferes with the licensee's ability to perform health care tasks authorized by A.R.S. § 32-2531 and if so, an explanation. A copy of any public or confidential agreement or order relating to the use, disorder, or condition, issued by a licensing agency or health care institution since the last renewal, if applicable; and~~
7. ~~If the document submitted under R4-17-203(B)(1) was a limited form of work authorization issued by the federal government, evidence that the licensee's presence in the U.S. continues to be authorized under federal law.~~
- B. ~~The Under A.R.S. §32-2523(A), the Board may shall randomly select a number of statements of completion of continuing education at least 10 percent of renewal applications submitted by licensees who are not currently certified by a national certification organization to verify the accuracy of the statements and the acceptability of the Category I continuing medical education attended. Physician assistants whose statements have been selected shall submit any additional information requested by the Board to assist in the verification compliance with the continuing medical education requirement specified in R4-17-205(A). A licensee selected shall submit to the Board documents that verify compliance with the continuing medical education requirement.~~

ARTICLE 3. ~~REPEALED~~ DUTIES OF THE EXECUTIVE DIRECTOR

R4-17-301. ~~Repealed Dismissal of Complaint~~

- ~~A. The executive director, with concurrence of the investigative staff, shall dismiss a complaint if review shows the complaint is without merit and dismissal is appropriate.~~
- ~~B. The executive director shall provide to the Board at each regularly scheduled Board meeting a list of physician assistants about whom complaints were dismissed since the preceding Board meeting.~~

R4-17-302. ~~Repealed Referral to Formal Hearing~~

- ~~A. The executive director may refer a case directly to a formal hearing if the investigative staff, medical consultant, and lead Board member concur after review of the physician assistant's case that a formal hearing is appropriate.~~
- ~~B. The executive director shall provide to the Board at each regularly scheduled Board meeting a list of the physician assistants whose cases were referred to formal hearing since the preceding Board meeting and whether the case was referred because it involves revocation, suspension, out-of-state disciplinary action, or complexity.~~

R4-17-303. ~~Repealed Non-disciplinary Consent Agreement~~

~~The executive director may enter into a consent agreement under A.R.S. § 32-2505(C)(23) with a physician assistant to limit the physician assistant's practice or rehabilitate the physician assistant if there is evidence that the physician assistant is mentally or physically unable to engage in the practice of medicine safely and the investigative staff, medical consultant, and lead Board member concur after review of the case that a consent agreement is appropriate.~~

R4-17-304. ~~Repealed Request for Inactive Status and License Cancellation~~

- ~~A. If a physician assistant requests inactive status or license cancellation and meets the requirements of A.R.S. §§ 32-2525 or 32-2528 and is not participating in the program defined under A.R.S. § 32-2552(E), the executive director shall grant the request.~~
- ~~B. The executive director shall provide to the Board at each regularly scheduled Board meeting a list of the individuals granted inactive or cancelled license status since the preceding Board meeting.~~

R4-17-305. ~~Repealed Referral to Formal Interview~~

~~The executive director shall refer a case to a formal interview on a future Board meeting agenda if the medical consultant, in cases involving quality of care, and the investigative staff and lead Board member concur after review of the case that a formal interview is appropriate.~~

R4-17-306. ~~Denial of License~~

- ~~A. The executive director shall deny a license to an applicant if the executive director, in consultation with the investigative staff and medical consultant concur after reviewing the application, that the applicant does not meet the statutory requirements for licensure.~~
- ~~B. The executive director shall provide to the Board at each regularly scheduled Board meeting a list of the physician assistants whose applications were denied since the preceding Board meeting.~~



NOTICE OF PROPOSED RULEMAKING

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 26. BOARD OF PSYCHOLOGIST EXAMINERS

[R16-160]

PREAMBLE

- 1. Article, Part, or Section Affected (as applicable)** **Rulemaking Action**
 - R4-26-401 Amend
 - R4-26-403 Amend
 - R4-26-404 Amend
 - R4-26-404.1 New Section
 - R4-26-404.2 New Section
 - R4-26-405 Amend
 - R4-26-406 Amend
 - R4-26-407 Amend
 - R4-26-408 Amend
 - R4-26-409 Amend
 - R4-26-410 Amend
 - R4-26-414 Amend
 - R4-26-417 Amend

- 2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):**
 Authorizing statute: A.R.S. § 32-2063(A) (3) and (A)(9)
 Implementing statute: A.R.S. §§ 32-2091.03 and 32-2091.07

- 3. Citations to all related notices published in the Register as specified in R1-1-409(A) that pertain to the record of the proposed rule:**
 Notice of Rulemaking Docket Opening: 22 A.A.R. 1110, May 13, 2016

- 4. The agency's contact person who can answer questions about the rulemaking:**
 Name: Dr. Cindy Olvey, Executive Director
 Address: Board of Psychologist Examiners
 1400 W. Washington, Suite 240
 Phoenix, AZ 85007
 Telephone: (602) 542-8162
 Fax: (602) 542-8279
 E-mail: Cindy.Olvey@psychboard.az.gov
 Web site: www.psychboard.az.gov

- 5. An agency's justification and reason why a rule should be made, amended, repealed, or renumbered, to include an explanation about the rulemaking:**
 Under Laws 2014, Chapter 166, the legislature amended the educational and training standards required for licensure as a behavior analyst and changed the time of license renewal to coincide with a licensee's birthdate rather than having all licenses renew at the same time. This rulemaking makes changes necessary to comply with statute. One of the changes, increasing the number of coursework classroom hours from 225 to 270 is the new standard of the Behavior Analyst Certification Board (See http://bacb.com/wp-content/uploads/2015/05/BACB_CourseContentAllocation.pdf) and consistent with A.R.S. § 32-2091.03, which requires the Board to adopt licensing standards consistent with the standards set by a nationally recognized behavior analyst certification board. An exemption from Executive Order 2015-01 was provided for this rulemaking by Ted Vogt, Chief of Operations in the Governor's office, in an e-mail dated June 1, 2015.

- 6. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**
 The Board does not intend to review or rely on a study in its evaluation of or justification for any rule in this rulemaking.



7. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking 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 of the rule changes will be minimal because the changes simply make the rules consistent with statutory changes made by the legislature.

9. The agency's contact person who can answer questions about the economic, small business, and consumer impact statement:

Name: Dr. Cindy Olvey, Executive Director
 Address: Board of Psychologist Examiners
 1400 W. Washington, Suite 240
 Phoenix, AZ 85007
 Telephone: (602) 542-8162
 Fax: (602) 542-8279
 E-mail: Cindy.Olvey@psychboard.az.gov
 Web site: www.psychboard.az.gov

10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

An oral proceeding regarding the proposed rules will be held as follows:

Date: Monday, October 17, 2016
 Time: 10:00 a.m.
 Location: 15 S. 15th Ave.
 Basement Conference Room
 Phoenix, AZ 85007

11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

None

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

The license required for behavior analysts is a general permit consistent with A.R.S. § 41-1037 because it is issued to qualified individuals to conduct activities that are substantially similar in nature.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

There are numerous federal laws that apply to provision of health care but none is directly applicable to this rulemaking.

c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:

No analysis was submitted.

12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

BACB Professional and Ethical Compliance Code for Behavior Analysts, January 1, 2016, published by the BACB and available from the Board or at www.bacb.com. The material is incorporated at R4-26-406.

13. The full text of the rules follows:

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 26. BOARD OF PSYCHOLOGIST EXAMINERS

ARTICLE 4. BEHAVIOR ANALYSIS

Section	
R4-26-401.	Definitions
R4-26-403.	Application for Initial License
R4-26-404.	<u>License Examination Requirement</u>
R4-26-404.1.	<u>Education Requirement</u>
R4-26-404.2.	<u>Supervised Experience Requirement</u>
R4-26-405.	Coursework Requirement
R4-26-406.	Ethical Standard
R4-26-407.	License by Reciprocity



- R4-26-408. License Renewal
- R4-26-409. Continuing Education Requirement
- R4-26-410. Voluntary Inactive Status
- R4-26-414. Complaints and Investigations
- R4-26-417. Licensing ~~Time-frames~~ Time Frames

ARTICLE 4. BEHAVIOR ANALYSIS

R4-26-401. Definitions

- A. The definitions in A.R.S. § 32-2091 apply in this Article.
- B. Additionally, in this Article:
 - 1. “Accredited” means an institution of higher education:
 - a. In the U.S. is listed with the Council for Higher Education Accreditation.
 - b. In Canada is a member of the Universities Canada, and
 - c. Outside of the U.S. or Canada is determined by a member of the National Association of Credential Evaluation Services to have standards substantially similar to those of an institution of higher education in the U.S. or Canada.
 - ~~1-2.~~ “Advertising” means any media used to disseminate information regarding the qualifications of a behavior analyst in order to solicit clients for behavior analysis services, regardless of whether the behavior analyst pays for the advertising.
 - ~~2-3.~~ “Applicant” means an individual who applies to the Board for an initial or renewal license.
 - ~~3-4.~~ “BACB” means the Behavior Analyst Certification Board.
 - ~~4-5.~~ “Confidential information” means:
 - a. Minutes of an executive session of the Board except as provided under A.R.S. § 38-431.03(B);
 - b. A record that is classified as confidential by a statute or rule applicable to the Board;
 - c. Materials relating to an investigation by the Board, including a complaint, response, client record, witness statement, investigative report, and any information relating to a client’s diagnosis, treatment, or personal family life; and
 - d. The following regarding an applicant or licensee:
 - i. College or university transcripts if requested from the Board by a person other than the applicant or licensee;
 - ii. Home address, telephone number, and e-mail address;
 - iii. Test scores;
 - iv. Date of birth;
 - v. Place of birth; and
 - vi. Social Security number.
 - ~~5-6.~~ “Gross negligence” means an extreme departure from the ordinary standard of care.
 - ~~6-7.~~ “Inactive status” means a behavior analyst maintains a license as a behavior analyst but is prohibited from practicing behavior analysis or holding oneself out as practicing behavior analysis in Arizona.
 - ~~7-8.~~ “License period” means:
 - a. For a licensee who holds an odd-numbered license, the two years between ~~May 1~~ the first day of the month after the licensee’s birth month of one odd-numbered year and ~~April 30~~ the last day of the licensee’s birth month of the next odd-numbered year; and
 - b. For a licensee who holds an even-numbered license, the two years between the first day of the month after the licensee’s birth month of one even-numbered year and the last day of the licensee’s birth month of the next even-numbered year.
 - ~~8-9.~~ “Mitigating circumstances that prevent resolution” means factors the Board considers in reviewing allegations against an applicant or licensee of unprofessional conduct occurring in another regulatory jurisdiction when the allegations would not prohibit licensure in Arizona. The factors may include:
 - a. Nature of the alleged conduct,
 - b. Severity of the alleged conduct,
 - c. Recentness of the alleged conduct,
 - d. Actions taken by the applicant to remedy potential violations, and
 - e. Whether the alleged conduct was an isolated incident or part of a recurring pattern.
 - ~~9-10.~~ “Party” means the Board, an applicant, a licensee, or the state.
 - ~~10-11.~~ “Psychometric testing materials” means manuals, instruments, protocols, and questions or stimuli used in testing.
 - ~~11-12.~~ “Raw test data” means test scores, client responses to test questions or stimuli, and a behavior analyst’s notes and recordings concerning client statements and behavior during examination.
 - ~~12.~~ “Recognized accrediting agency” means a regional accrediting agency recognized by the U.S. Department of Education or a quality assurance or accreditation entity authorized to operate by a foreign government.
 - 13. “Regulatory jurisdiction” means a state or territory of the United States, the District of Columbia, or a foreign country with authority to grant or deny entry into a profession or occupation.



14. "Renewal year" means:
- a. Each odd-numbered year for a licensee who holds an odd-numbered license, and
 - b. Each even-numbered year for a licensee who holds an even-numbered license.
- ~~14-15.~~ "Supervised experience" means supervised work experience, independent fieldwork, university practicum, or intensive university practicum.

R4-26-403. Application for Initial License

- A. No change
1. No change
 2. No change
 3. No change
 4. No change
 5. No change
 6. No change
 7. No change
 8. No change
 9. No change
 10. No change
 11. No change
 12. No change
 - a. No change
 - b. No change
 - c. No change
 - d. No change
 - e. No change
 - f. No change
 - g. No change
 - h. No change
 - i. No change
 - j. No change
 - k. No change
 - l. No change
 - m. No change
 - n. Has a medical, physical, or psychological condition that limits the applicant's ability to practice behavior analysis safely and competently; and
 - ~~13.~~ Name and address of every institution of higher learning attended, dates attended, degree received, name of department, and major subject area studied;
 - ~~14.~~ Title of graduate degree program;
 - ~~15.~~ Name of major advisor and department;
 - ~~16.~~ Title of thesis or dissertation, if applicable;
 - ~~17.~~ Title of specialty area, if applicable;
 - ~~18.~~ A statement of whether:
 - a. The graduate program completed was accredited at the time of graduation and if so, the name of the accrediting agency;
 - b. The applicant completed a minimum of 225 classroom hours of graduate level instruction that meet the standards prescribed under R4-26-405; and
 - e. The applicant completed degree, coursework, and supervised experience after January 1, 2000, and if so, whether the applicant completed 1,500 hours of supervised experience in the practice of behavior analysis in no less than 12 months; or
 - d. The applicant completed degree, coursework, or supervised experience before January 1, 2000, and if so, whether:
 - i. The coursework or supervised experience occurred in a setting outside of a college or university program;
 - ii. The coursework or supervised experience was acquired after the graduate degree program and before January 1, 2000; and
 - iii. The applicant is certified by the BACB;
 - ~~19.~~ A list of the applicant's supervised experience and the names of individuals the applicant has asked to complete verification forms under subsection (C);
 - ~~20.~~ A statement of whether the applicant has completed a minimum of 1,500 hours of supervised experience in behavior analysis that meets the requirements under A.R.S. § 32-2091.03;
 - ~~21.~~ A statement of whether the applicant's supervised experience included:
 - a. Conducting behavioral assessment and assessment activities related to the need for behavioral interventions;



- b. ~~Designing, implementing, and monitoring behavior analysis programs for clients;~~
- e. ~~Overseeing the implementation of behavior analysis programs by others; and~~
- d. ~~Performing or participating in other activities normally performed by a behavior analyst;~~

~~22-13.~~ The applicant's signature attesting that all statements in the application are true in every respect.

- B. No change
 - 1. No change
 - 2. No change
 - 3. No change
 - 4. No change
- C. Additionally, an applicant shall ensure that the following is submitted directly to the Board:
 - 1. Verification ~~that~~ the applicant ~~has~~ passed the examination referenced in R4-26-404 submitted by the BACB;
 - 2. Verification of supervised experience that meets the standards specified in R4-26-404.2 submitted by an individual with direct knowledge of the supervised ~~work~~ experience, ~~independent fieldwork, university practicum, or intensive university practicum;~~
 - 3. Official ~~transcripts from all graduate institutions attended~~ transcript for the graduate degree required under R4-26-404.1 submitted by the ~~institutions~~ accredited institution of higher education that awarded the degree;
 - 4. Official transcript or other official document demonstrating the applicant completed the coursework required under R4-26-405 submitted by the accredited institution of higher education or BACB-approved program in which the coursework was completed; and
 - ~~4-5.~~ Verification of licensure, certification, or registration by another regulatory jurisdiction submitted by the regulatory jurisdiction.

R4-26-404. License Examination Requirement

- ~~A.~~ To be licensed as a behavior analyst in Arizona, an individual shall take and pass the examination administered by the BACB for Board Certified Behavior Analysts as part of its certification process.
- ~~B.~~ ~~An individual who fails the BACB examination three times, regardless of jurisdiction, shall not take the examination again until the individual complies with additional requirements that the Board specifies based on an assessment of the knowledge and skill inadequacies causing the individual to fail.~~

R4-26-404.1. Education Requirement

To be licensed as a behavior analyst in Arizona, an individual shall have a master's degree or higher from an accredited institution of higher education in:

- 1. Behavior analysis, education, psychology, or another subject area related to behavior analysis acceptable to the Board; or
- 2. A degree program in which the applicant completed a BACB-approved course sequence.

R4-26-404.2. Supervised Experience Requirement

- ~~A.~~ To be licensed as a behavior analyst in Arizona, an individual shall have completed 1500 hours of supervised experience. The Board shall accept, for the purpose of licensure, hours of supervised experience that meet the following standards:
 - 1. Supervised independent fieldwork. The supervisee shall be supervised at least once during each two-week supervisory period for at least five percent of the total hours spent in supervised independent fieldwork;
 - 2. Practicum. The supervisee shall:
 - a. Participate in a practicum in behavior analysis within a program approved by the BACB;
 - b. Achieve a passing grade in the practicum;
 - c. Obtain graduate-level academic credit for the practicum; and
 - d. Be supervised at least once during each one-week supervisory period for at least 7.5 percent of the total hours spent in practicum;
 - 3. Intensive practicum. The supervisee shall:
 - a. Participate in an intensive practicum in behavior analysis within a program approved by the BACB;
 - b. Achieve a passing grade in the intensive practicum;
 - c. Obtain graduate-level academic credit for the intensive practicum; and
 - d. Be supervised at least twice during each one-week supervisory period for at least 10 percent of the total hours spent in the intensive practicum;
 - 4. Combination of experience categories. The supervisee may accrue hours of supervised experience in a single category or may combine any two or three categories listed in subsections (A)(1) through (3). However, the supervisee shall accrue supervised experience in only one category in each supervisory period; and
 - 5. For all categories of supervised experience, the supervisee shall accrue no fewer than 10 hours and no more than 30 hours, including time spent in supervision, each week.
- ~~B.~~ Standards for supervised experience.
 - 1. Onset of supervised experience. The Board shall not accept, for the purpose of licensure, hours of supervised experience completed before attending courses required under R4-26-405. However, the Board shall accept hours of supervised experience completed concurrent with attending courses required under R4-26-405.



2. Appropriate activities. The Board shall accept, for the purpose of licensure, hours of supervised experience that demonstrate participation in supervised experiences with various populations, at various sites, with multiple supervisors, and including all of the following activity areas:
 - a. Conducting assessments related to behavioral intervention;
 - b. Designing, implementing, and monitoring skill-acquisition and behavior-reduction programs;
 - c. Overseeing implementation of behavior-analytic programs by others;
 - d. Training, designing behavioral systems, and managing performance; and
 - e. Performing other activities directly related to behavior analysis such as attending planning meetings regarding the behavior analytic program, researching literature related to the program, and talking with others about the program.
3. Appropriate clients. The Board shall accept, for the purpose of licensure, hours of supervised experience with appropriate clients.
 - a. An appropriate client is one for whom behavior-analytic services are suitable.
 - b. A client is not appropriate if:
 - i. The client is related to the supervisee,
 - ii. The client's primary caretaker is related to the supervisee, or
 - iii. The supervisee is the client's primary caretaker.
4. Supervisor qualifications. The Board shall accept, for the purpose of licensure, hours of supervised experience only if the supervisor:
 - a. Was licensed by the state in which the supervision occurred during the period of supervised experience; or
 - b. If licensure of behavior analysts was not available or not in effect in the state in which the supervision occurred or during the period of supervised experience, was certified as a behavior analyst by the BACB; and
 - c. Was not related to, subordinate to, or employed by the supervisee during the period of supervised experience. Employment does not include payment made to the supervisor by the supervisee for supervisory services.
5. Nature of supervision. The Board shall accept, for the purpose of licensure, hours of supervised experience that are effective in improving and maintaining the behavior-analytic, professional, and ethical skills of the supervisee.
 - a. Effective supervision includes:
 - i. Developing performance expectations for the supervisee;
 - ii. Observing the supervisee and providing performance feedback on behavior-analytic activities with clients in the natural environment. In person, on-site observation is preferred but use of web cameras, videotape, videoconferencing, or a similar means that provides synchronous observation is acceptable;
 - iii. Modeling technical, professional, and ethical behavior for the supervisee;
 - iv. Guiding behavioral case conceptualization, problem solving, and decision making skills of the supervisee;
 - v. Reviewing written materials prepared by the supervisee such as behavior programs, data sheets, and reports;
 - vi. Providing oversight and evaluation of the effects of the supervisee's delivery of behavioral service; and
 - vii. Evaluating the effects of supervising the supervisee; and
 - b. Effective supervision may be conducted:
 - i. Individually for at least half of the total supervised hours in each supervisory period; and
 - ii. In groups of two to 10 supervisees for no more than half of the total supervised hours in each supervisory period.
6. Supervision plan. The Board shall accept, for the purpose of licensure, hours of supervised experience for which the supervisee and supervisor executed a written plan before starting the supervised experience, which includes the following:
 - a. States the responsibilities of both the supervisor and supervisee;
 - b. Requires the supervisor and supervisee to complete BACB's online experience training module;
 - c. Requires the supervisor to complete eight hours of supervision training provided by BACB;
 - d. Includes a description of appropriate activities and instructional objectives;
 - e. Specifies the measurable circumstance under which the supervisor will complete the supervisee's Experience Verification Form;
 - f. Delineates the consequences if either supervisor or supervisee does not comply with the plan;
 - g. Requires the supervisee to obtain written permission from the supervisee's employer or manager when applicable; and
 - h. Requires both the supervisor and supervisee to comply with the ethical standard specified at R4-26-406.
7. Documentation of supervision. If the Board determines documentation of supervision is needed to enable it to assess an applicant's qualifications, the applicant shall submit documentation of hours of supervised experience. When requested, the Board shall accept, for the purpose of licensure, hours of supervised experience that are documented in a writing that includes the following elements:
 - a. Date of each supervisory meeting.
 - b. Duration of each supervisory meeting.



- c. Statement of whether each supervisory meeting involved individual or group supervision.
- d. Evaluation of supervisee performance.
- e. Total experience hours obtained during the supervisory period.
- f. Total individual and group supervision hours obtained during the supervisory period, and
- g. Dated signature of both the supervisor and supervisee.
- 8. Multiple supervisors or settings. The Board shall accept, for the purpose of licensure, hours of supervised experience provided by multiple supervisors or at multiple settings if all the hours of supervised experience meet the standards specified in subsections (B)(1) through (7).
- C. Experience Verification Form. An applicant for licensure shall submit to the Board an Experience Verification Form that is completed by the applicant's supervisor, supervisors, or a behavior analyst knowledgeable of the applicant's supervised experience.
 - 1. If the applicant is unable to obtain a completed Experience Verification Form or if the applicant disagrees with the total hours recorded on the form, the applicant may submit to the Board:
 - a. A copy of the plan required under subsection (B)(6).
 - b. Copies of the documentation maintained under subsection (B)(7), and
 - c. Letters or other documentation from third parties who observed the supervisory relationship.
 - 2. An applicant who submits documentation to the Board under subsection (C)(1) shall:
 - a. Provide the supervisor a copy of the documentation submitted to the Board; and
 - b. Submit to the Board proof of compliance with subsection (C)(2)(a). The Board shall accept as proof of compliance a certified mail receipt and a copy of a letter to the supervisor explaining why the documentation is being submitted to the Board.

R4-26-405. Coursework Requirement

A. This Section does not apply to an applicant who was certified as a behavior analyst by the BACB before January 1, 2015.

A.B. As required under A.R.S. § 32-2091.03(A)(3) To be licensed as a behavior analyst in Arizona, an applicant for licensure individual shall complete, as part of or in addition to the coursework necessary to obtain the graduate degree required under A.R.S. § 32-2091.03(A)(1) R4-26-404.1, 225 270 classroom hours of graduate-level instruction. The applicant individual shall ensure that the classroom hours include the following content areas:

- 1. Ethical and professional conduct in behavior analysis: 15 45 hours;
- 2. Definitions and characteristics; principles, processes, and concepts Concepts and principles of behavior analysis: 45 hours;
- 3. Behavioral assessment; selecting intervention outcomes and strategies Research methods in behavior analysis: 30 45 hours;
 - a. Measurement and data analysis: 25 hours; and
 - b. Experimental design: 20 hours;
- 4. Experimental evaluation of interventions: 20 hours; Applied behavior analysis: 105 hours:
 - a. Fundamental elements of behavior change and specific behavior change procedures: 45 hours;
 - b. Identification of the problem and assessment: 30 hours;
 - c. Intervention and behavior change considerations: 10 hours;
 - d. Behavior change systems: 10 hours; and
 - e. Implementation, management, and supervision: 10 hours; and
- 5. Measurement of behavior; displaying and interpreting behavioral data: 20 hours;
- 6. Behavioral change procedures; systems support: 45 hours; and
- 7. Discretionary content related to behavior analysis: 50 30 hours.

B.C. The Board shall accept only classroom hours of graduate-level instruction taken completed at an institution accredited by a recognized accrediting agency institution of higher education or in a program approved by the BACB.

R4-26-406. Ethical Standard

The Board incorporates by reference BACB ~~Guidelines for Responsible Conduct~~ Professional and Ethical Compliance Code for Behavior Analysts, July 2010 January 1, 2016, published by the BACB and available for review at the Board office and online at www.BACB.com. The incorporated material includes no later editions or amendments.

R4-26-407. License by Reciprocity

An individual who is licensed or certified as a behavior analyst in another state may apply for an initial license as a behavior analyst in Arizona by complying with R4-26-403 and submitting evidence that the individual is licensed or certified as a behavior analyst in good standing and:

- 1. Obtained a graduate degree from an accredited institution of higher learning accredited by a recognized accrediting agency education in a subject area specified in R4-26-404.1;
- 2. Completed a minimum of 1,500 hours of supervised experience that meet the standards specified in R4-26-404.2;
- 3. Completed a minimum of 225 270 classroom hours of graduate-level instruction in the content areas listed in R4-26-405 or was certified as a behavior analyst by the BACB before January 1, 2015; and
- 4. Passed the examination referenced in R4-26-404.

**R4-26-408. License Renewal**

- A. ~~A Beginning May 1, 2017, a license issued by the Board, whether active or inactive, expires on May 1 of every odd-numbered year unless renewed the last day of a licensee's birth month during the licensee's renewal year.~~
- B. The Board shall provide a licensee with 60 ~~days~~ days' notice of the license renewal deadline. Failure to receive the notice does not excuse failure to renew timely.
- C. To renew a license, a licensee shall, on or before ~~April 30 of every odd-numbered~~ the last day of the licensee's birth month during the licensee's renewal year, submit to the Board a renewal application form, which is available from the Board office and on its website, and provide the following information:
1. License number;
 2. Name;
 3. Other names by which the licensee is or ever has been known;
 4. Home address and telephone number;
 5. Business name and address;
 6. Work telephone and fax number;
 7. E-mail address;
 8. Date of birth;
 9. Social Security number;
 10. BACB certificate number, if applicable;
 11. No change
 - a. No change
 - b. No change
 - c. No change
 - d. No change
 - e. No change
 - f. No change
 - g. No change
 - h. No change
 - i. No change
 - j. No change
 - k. No change
 - l. No change
 - m. No change
 - n. No change
 12. No change
 13. No change
 14. No change
- D. No change
1. No change
 2. No change
 3. No change
- E. No change
- F. Under A.R.S. § 32-2091.07, the license of a licensee who fails to submit a renewal application on or before ~~April 30 of an odd-numbered~~ the last day of the licensee's birth month during the licensee's renewal year expires and the licensee shall immediately stop practicing as a behavior analyst in Arizona.
- G. A behavior analyst whose license expires under subsection (F) may have the license reinstated by submitting the following to the Board ~~on or before June 30 of the year in which the license expired~~ within two months after last day of the licensee's birth month during the licensee's renewal year:
1. No change
 2. No change
 3. No change
- H. No change
1. Complying with ~~subsections (G)(1) through (3) on or before the following April 30th~~ subsection (G) within one year after the last day of the licensee's birth month during the licensee's renewal year, and
 2. No change
- I. No change

R4-26-409. Continuing Education Requirement

- A. A licensee shall complete a minimum of 30 hours of continuing education during each license period. A licensee shall ensure that at least four hours of continuing education addresses ethics.
- B. During a licensee's first license period, the licensee shall complete a pro-rated number of continuing education hours. To determine the number of continuing education hours required during the first license period, the licensee shall multiply the number of whole months from the month of license issuance to the end of the license period by 1.25.
- C. A licensee shall ensure that each continuing education program provides the necessary understanding of current devel-



opments, skills, or procedures related to the practice of behavior analysis. The following provide the necessary understanding of current developments, skills, or procedures related to the practice of behavior analysis:

1. ~~Continuing education programs offered by a BACB-approved provider: One hour of continuing education for each hour of participation;~~
 2. ~~1. Courses College or university graduate coursework that directly relate relates to behavior analysis and are is provided by an accredited educational institution: 15 hours of continuing education for each semester hour completed and 10 hours of continuing education for each quarter hour completed; a course syllabus and transcript are required for documentation;~~
 2. ~~Continuing education programs offered by a BACB-approved provider: One hour of continuing education for each hour of participation; a certificate or letter from the BACB-approved provider is required for documentation;~~
 3. Self-study, online, or correspondence course that is directly related to behavior analysis and offered by BACB-approved provider or approved or offered by an accredited educational institution: Hours of continuing education determined by the course provider; a certificate or letter from the BACB-approved provider or a course syllabus and transcript from the accredited educational institution are required for documentation;
 4. Teaching a continuing education program offered by a BACB-approved provider or ~~approved or~~ teaching a graduate university or college course offered by an accredited educational institution: One hour of continuing education for each hour taught; for graduate courses taught, 15 hours of continuing education for each semester hour completed and 10 hours of continuing education for each quarter hour completed;
 5. Credentialing activities ~~approved or~~ events pre-approved for continuing education and initiated by the BACB: One hour of continuing education for each hour of participation; documentation from the BACB is required;
 6. Publication of a peer-reviewed article or text book on the practice of behavior analysis or serving as a reviewer or action editor of an article pertaining to behavior analysis: ~~15~~ eight hours of continuing education for one publication and one hour of continuing education for one review; and
 7. Attending a Board meeting: ~~Two~~ Three hours for attending a morning or afternoon session of a Board meeting and ~~four~~ six hours for attending a full-day Board meeting.
- D. The number of hours of continuing education is limited as follows:
1. No more than ~~25~~ 50 percent of the required hours may be obtained from teaching a continuing education program or course under subsection (C)(4). A licensee shall not obtain continuing education hours for teaching the same continuing education program or course more than ~~two times~~ once during each licensing period. A licensee shall earn no continuing education hours for participating as a member of a panel at a continuing education program or course;
 2. No more than 25 percent of the required hours may be obtained from continuing education under ~~subsections~~ each of subsections (C)(3), ~~and~~ (5), and (6).
 3. No more than six of the required hours may be obtained under subsection (C)(7). Hours obtained under subsection (C)(7) may be used to complete the ethics requirement under subsection (A).
 4. Hours obtained in excess of the minimum required during a license period shall not be carried over to a subsequent license period.
- E. A licensee shall obtain a certificate or other evidence of attendance from the provider of each continuing education program or course attended that includes the following:
1. Name of the licensee;
 2. Title of the continuing education;
 3. Name of the continuing education provider;
 4. Date, time, and location of the continuing education; and
 5. Number of hours of continuing education obtained.
- F. A licensee shall maintain the evidence of attendance described in subsection (E) for two licensing periods and make the evidence available to the Board upon request.
- G. The Board may audit a licensee's compliance with the continuing education requirement. The Board may deny license renewal or take other disciplinary action against a licensee who fails to obtain or document the required continuing education hours. The Board may discipline a licensee who commits fraud, deceit, or misrepresentation regarding the continuing education hours.
- H. A licensee who cannot comply with the continuing education requirement for good cause may seek an extension of time in which to comply by submitting a written request to the Board with the timely submission of the renewal application required under R4-26-408.
1. Good cause includes but is not limited to illness or injury of the licensee or a close family member, death of a close family member, birth or adoption of a child, military service, relocation, natural disaster, financial hardship, or residence in a foreign country for at least 12 months of the license period.
 2. The Board shall not grant an extension longer than one year.
 3. A licensee who obtains hours of continuing education during an extension of time provided by the Board shall ensure the hours are reported only for the license period extended.
 4. A licensee who cannot comply with the continuing education requirement within an extension may apply to the Board for inactive license status under A.R.S. § 32-2091.06(E).

**R4-26-410. Voluntary Inactive Status**

- A. No change
 - 1. No change
 - 2. No change
 - 3. No change
- B. No change
- C. To remain licensed, a licensee on inactive status shall comply with R4-26-408 on or before ~~April 30 of every odd-numbered~~ the last day of the licensee's birth month during the licensee's renewal year.

R4-26-414. Complaints and Investigations

- A. No change
 - 1. No change
 - 2. No change
- B. No change
 - 1. No change
 - 2. No change
 - a. No change
 - b. No change
 - c. No change
 - d. No change
 - e. No change
 - f. Whether the complainant has contacted the licensee or other individual concerning the complaint and if so, the response, if any.

R4-26-417. Licensing ~~Time-frames~~ Time Frames

- A. For the purpose of A.R.S. § 41-1073, the Board establishes the following ~~time-frames~~ time frames:
 - 1. Initial license.
 - a. Overall ~~time frame~~ time frame: 120 days,
 - b. Administrative completeness review ~~time-frame~~ time frame: 30 days, and
 - c. Substantive review ~~time-frame~~ time frame: 90 days; and
 - 2. Renewal license.
 - a. Overall ~~time-frame~~ time frame: 150 days,
 - b. Administrative completeness review ~~time-frame~~ time frame: 60 days, and
 - c. Substantive review ~~time-frame~~ time frame: 90 days; ~~and~~.
- B. An applicant and the Executive Director of the Board may agree in writing to extend the substantive review and overall ~~time-frames~~ time frames by no more than 25% of the overall ~~time-frame~~ time frame.
- C. The administrative completeness review ~~time-frame~~ time frame begins when the Board receives the application materials required under R4-26-403 or R4-26-408(C) and (D). During the administrative completeness review ~~time-frame~~ time frame, the Board shall notify the applicant that the application is either complete or incomplete. If the application is incomplete, the Board shall specify in the notice what information is missing.
- D. An applicant whose application is incomplete shall submit the missing information to the Board within 240 days for an initial license. Both the administrative completeness review and overall ~~time-frames~~ time frames are suspended from the date of the Board's notice under subsection (C) until the Board receives all of the missing information.
- E. Upon receipt of all missing information, the Board shall notify the applicant that the application is complete. The Board shall not send a separate notice of completeness if the Board grants or denies a license within the administrative completeness review ~~time-frame~~ time frame listed in subsection (A)(1)(b) or (A)(2)(b).
- F. The substantive review ~~time-frame~~ time frame begins on the date of the Board's notice of administrative completeness.
- G. No change
- H. An applicant who receives a request under subsection (G) shall submit the additional information to the Board within 240 days. Both the substantive review and overall ~~time-frames~~ time frames are suspended from the date of the Board's request until the Board receives the additional information.
- I. No change
- J. Within the overall ~~time-frame~~ time frame listed in subsection (A), the Board shall:
 - 1. No change
 - 2. No change
- K. No change
- L. No change
 - 1. No change
 - 2. No change
 - 3. No change
 - 4. No change
- M. If a ~~time-frame's~~ time frame's last day falls on a Saturday, Sunday, or official state holiday, the next business day is the ~~time-frame's~~ time frame's last day.



NOTICES OF FINAL RULEMAKING

This section of the Arizona Administrative Register contains Notices of Final Rulemaking. Final rules have been through the regular rulemaking process as defined in the Administrative Procedures Act. These rules were either approved by the Governor's Regulatory Review Council or the Attorney General's Office. Certificates of Approval are on file with the Office.

The final published notice includes a preamble and

text of the rules as filed by the agency. Economic Impact Statements are not published.

The Office of the Secretary of State is the filing office and publisher of these rules. Questions about the interpretation of the final rules should be addressed to the agency that promulgated them. Refer to Item #5 to contact the person charged with the rulemaking. The codified version of these rules will be published in the Arizona Administrative Code.

NOTICE OF FINAL RULEMAKING

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 11. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY STANDARDS

[R16-151]

PREAMBLE

Table with 2 columns: Article, Part, or Section Affected (as applicable) and Rulemaking Action. Rows include R18-11-106 through R18-11-121 and Appendix A, B, and C, all with 'Amend' as the action.

2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):

Authorizing statutes: A.R.S. §§ 49-202(A), 49-203(A)(1), 49-221, 49-222

Implementing statute: A.R.S. §§ 49-221, 49-222(C)

3. The effective date of the rule:

August 2, 2016

The agency was granted an immediate effective date under A.R.S. § 41-1032(A)(5). This rulemaking addresses past errors from the 2009 rulemaking and makes minor adjustments that lessen or ease a regulatory burden while achieving the same regulatory objective, such as creating a more flexible process for schedules of compliance. Additionally, the Arizona Department of Environmental Quality (ADEQ) is setting a site-specific standard to allow potential dischargers to discharge at a higher numeric value for copper, thereby decreasing the regulatory burden in future permits. As explained in the preamble, the change in standards has no effect on designated uses related to humans, such as a drinking water source or full-body contact and will not compromise the protection of sensitive aquatic species. Also, for 20 pollutants, ADEQ is reverting back to the numeric criteria last approved by the U.S. Environmental Protection Agency (EPA) in 2003. ADEQ does not anticipate that these changes in numeric criteria will impact dischargers because ADEQ has not been able to use the 2009 revised, state-approved criteria for these pollutants in any permits.

4. Citations to all related notices published in the Register as specified in R1-1-409(A) that pertain to the record of the proposed rule:

Notice of Termination of Rulemaking: 22 A.A.R. 343, February 19, 2016

Notice of Rulemaking Docket Opening 22 A.A.R. 345, February 19, 2016

Notice of Proposed Rulemaking: 22 A.A.R. 255, February 19, 2016

5. The agency's contact person who can answer question about the rulemaking:

Name: Wendy LeStarge

Address: Department of Environmental Quality



Water Quality Division
1110 W. Washington St.
Phoenix, AZ 85007

Telephone: (602) 771-4836 (Toll-free number in Arizona: (800) 234-5677)

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6. An agency's justification and reason why a rule should be made, amended, repealed or renumbered, to include an explanation about the rulemaking:

Water quality standards are used both as a mechanism to establish goals and as a regulatory requirement for permits when controls for discharges are inadequate. The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and establishing water quality standards for surface waters. Section 303(c) of the CWA requires all states to review, and revise as necessary, surface water quality standards at least once every three years, subject to approval by EPA. ADEQ is the state agency responsible for administering the CWA. ADEQ previously amended these rules in 2009, and now proposes these changes to the surface water quality standards:

R18-11-106 Net Ecological Benefit

Under R18-11-106, ADEQ can modify a surface water quality standard when there is a net ecological benefit associated with the discharge of effluent that supports or creates a riparian habitat. Usually the discharger or Arizona Pollutant Discharge Elimination System (AZPDES) permittee requests a modification to its permit because it cannot meet the existing surface water quality standard. ADEQ proposes to eliminate the requirement in subsection (A)(3) that a discharger have a plan to eliminate the discharge under active consideration as part of what must be demonstrated.

R18-11-109 Numeric Water Quality Standards

- In subsection (E), ADEQ is rewording how the dissolved oxygen water quality standard is described due to reported confusion from permittees. There is no substantive change in the standard.
- Subsection (F) identifies nutrient standards for certain streams and their perennial tributaries, with the intent to protect downstream lakes from nutrient accumulation. ADEQ proposes to limit the applicability of these standards to discharges that actually impact the surface water. Any tributary of a listed surface water would be included in the nutrient standard if the source discharging to the tributary has the reasonable potential to impact the listed surface water based on consideration of the factors listed.
- ADEQ is clarifying location segments of the Little Colorado River subject to the nutrient standards in subsection (F).
- ADEQ is correcting the pollutant limits for phosphorus and nitrogen for Oak Creek that were reversed in subsection (F).

R18-11-110 Salinity Standards for the Colorado River

ADEQ proposes to update the incorporation by reference in R18-11-110(B) to the most current salinity standards and plan of implementation for the Colorado River. The Colorado River Basin Salinity Control Forum approved its last triennial review of salinity standards and plan of implementation in 2014, but there are no changes affecting Arizona.

R18-11-112. Outstanding Arizona Waters

ADEQ proposes to eliminate the latitude/longitude coordinates since the Outstanding Arizona Water location is listed in Appendix B.

R18-11-115 Site-Specific Standards

R18-11-115 allows ADEQ to consider the effect of local water quality characteristics on the toxicity of specific pollutants and the varying sensitivities of local, affected aquatic populations to pollutants to set a site-specific numeric water quality standard. ADEQ is adding more flexibility to the process that allows an outside party to submit a scientifically defensible study to support development of the site-specific standard.

- ADEQ is proposing to add "natural adaptive process" as one of the reasons to adopt a site-specific standard in subsection (B).
- In subsection (C), ADEQ proposes to delete the requirement that limits a study to only EPA methods that have been incorporated by reference. Instead, a person can propose a site-specific standard by first submitting a study outline to the Director for approval. The person can choose to submit an abbreviated study outline that uses the



most recent EPA-recognized procedures, or submit a more rigorously documented study outline using any scientifically defensible procedure.

R18-11-121 Schedules of Compliance

When a new or revised surface water quality standard is promulgated, some dischargers need time to modify equipment or practices in order to achieve that standard. When developing an AZPDES permit, ADEQ establishes time to comply with the steps in a compliance schedule. ADEQ proposes to delete the set time of three years and create a more flexible process that allows ADEQ to look at certain factors in determining the time needed in the compliance schedule. The five factors listed are based on EPA’s guidance in interpreting whether a compliance schedule is appropriate under 40 C.F.R. § 122.47(a). ADEQ is deleting subsections B through D as redundant; the flexible standard applies to all necessary situations.

Appendix A Numeric Water Quality Standards

Surface water quality standards consist of designating beneficial uses to a body of water, assigning criteria for allowable concentrations of pollutants, and establishing provisions or policies to protect the designated uses. In the 2009 rulemaking, ADEQ proposed new or revised numeric criteria for dozens of pollutants in Table 1. However, EPA did not approve revised criteria for twenty of the pollutants. As a result, the revised, state-approved criteria for these pollutants cannot be used in AZPDES permits and ADEQ must use the numeric criteria that EPA last approved in 2003.

- In order to state clearly what standards are being used in permits and for compliance, ADEQ proposes to repeal the current standards for these twenty pollutants and revert to the prior (2003) EPA-approved criteria (see following table).

Parameter	Affected Designated Use
Benzene	Fish consumption
Beryllium	Acute and chronic for Aquatic and wildlife (cold water) (A&Wc), Aquatic and wildlife (warm water) (A&Ww), Aquatic and wildlife (effluent-dependent water) (A&Wedw), and acute Aquatic and wildlife (ephemeral) (A&We)
Bromodichloromethane	Full body contact
Cadmium	Acute and chronic for A&Ww and A&Wedw, and A&We
Carbon tetrachloride	Partial Body contact
Chloroform	Fish consumption and full body contact
Dibromochloromethane	Full body contact
1,2-Dibromo-3-chloropropane	Full and partial body contact
Di (2-ethylhexyl) phthalate	Full body contact
Hexachlorocyclohexane gamma (lindane)	Chronic A&Wc, A&Ww, and A&Wedw
Hexachlorocyclopentadiene	Fish consumption, full body and partial body contact
Indeno (1,2,3-cd) pyrene	Fish consumption
Nickel	Domestic water source and fish consumption
Paraquat	Returning to no standard for Acute and chronic for A&Wc, A&Ww and A&Wedw
Pentachlorophenol	Fish consumption
Permethrin	Returning to no standard for Acute and chronic for A&Wc, A&Ww and A&Wedw
Sulfides	Acute A&We
1,1,2,2-Tetrachloroethane	Partial body contact
Thallium	Fish consumption
Toluene	Fish consumption, full body and partial body contact

- Also in Table 1, two radionuclides, strontium and tritium, were part of the surface water quality standards in the



past, but were inadvertently deleted in the 2009 rulemaking. ADEQ proposes to list these pollutants in Appendix A, Table 1, and include a footnote explaining the measurement for all radionuclides.

- Tables 22 – 26 for ammonia and pentachlorophenol are correct but are overly precise in having values to the fourth place of significant figures. ADEQ proposes to round numeric values only to the first significant figure to the right of the decimal point. The tables will be renumbered as 10 – 12.
- Tables 2 – 21 for hardness-based metals (cadmium, chromium III, dissolved copper, dissolved lead, dissolved nickel, silver, and zinc) are correct but are overly precise. ADEQ is amending the tables, using the calculation formula for each designated use, but listing only three hardness values as examples: 20 mg/L (low), 100 mg/L (median), and 400 mg/L (high). The tables will be renumbered, 2 – 9.

Appendix B Surface Waters and Designated Uses

Appendix B lists surface waters in Arizona, their locations, and their designated uses. ADEQ proposes the following types of corrections throughout Appendix B:

- Change latitude/longitude coordinates from the North American Datum (NAD) of 27 to NAD 83, which conforms to the coordinate system ADEQ uses on its internet GIS mapping system;
- Remove decimals from seconds portion of latitude and longitude as it is overly precise and not used consistently;
- Name changes to conform to the U.S. Geological Survey naming conventions;
- Consistent segment description and locations as beginning at Point A and ending at Point B, so that:
 - A surface water begins at its headwaters and ends at some point.
 - If a surface water ends when it meets another surface water, it ends at the confluence with that water.
 - Remove latitude/longitude when stream reach ends at a named stream or lake as it is redundant to have both the name and latitude/longitude.
- Verify reference locations, such as road names or other surface waters;
- Eliminate unnamed washes designated as EDW if the discharging facility no longer exists. By default, the wash would be regulated under R18-11-105 (Tributaries; Designated Uses).
- Adjust EDW reach origin latitude/longitude to where effluent actually enters stream channel, creating the EDW, rather than using the locational information of the facility or outfall;
- Eliminate “urban lake” in the segment description because it is redundant with “Urban” as listed in the “Lake Category” column;

ADEQ also made specific changes to the following surface waters:

Watershed	Surface Water	Change
BW	Boulder Creek	ADEQ proposes to delete the agricultural irrigation designated use for Boulder Creek because there is no crop irrigation in the watershed.
BW	Carter Tank	Correction from Verde River to Bill Williams watershed
BW	Coors Lake	ADEQ is proposing to remove Coors Lake from Appendix B, Surface Waters and Designated Uses. Coors Lake is a 35 acre impoundment of Butte Creek completed in 1982. Subsequent unmineralized overburden deposits have isolated the lake from Butte Creek. Coors Lake is maintained partially by precipitation runoff and by active groundwater pumping, which is required to keep Coors Lake as a viable lake. There is no outflow from the lake to any tributary. Coors Lake has been listed as an impaired water due to mercury.
BW	Red Lake	Correction from Verde River to Bill Williams watershed
CG	Redondo Lake	Correction from Colorado – Grand Canyon to Colorado –Lower Gila watershed
LC	Bow and Arrow Wash	Permitted outfall from Estate at Pine Canyon no longer exists so deleted as EDW; as a named wash, the designated use is changed to ephemeral
LC	Estate at Pine Canyon lake	A new listing that receives reclaimed water from the City of Flagstaff and then is discharged to three storage impoundments created in the drainage tributary to the Rio de Flag
LC	Huffer Tank	Correction from Little Colorado to Verde River watershed
LC	Pool Corral Lake	Correction from Little Colorado to Salt River watershed
LC	Salt House Lake	Correction from Little Colorado to Salt River watershed
LC	Unnamed wash	Permitted outfall from Estate at Pine Canyon no longer exists so deleted as EDW



LC	Unnamed wash	Permitted outfall from Estate at Pine Canyon no longer exists so deleted as EDW
MG	Andorra Wash	Permitted outfall from Town of Cave Creek no longer exists so deleted as EDW; as a named wash, the designated use is changed to ephemeral
MG	East Maricopa Floodway	A new listing recognizing that the East Maricopa Floodway (EMF) is a flood control channel with the primary function of regional stormwater flows. It receives water from numerous ephemeral drainages and redirects the flows south to the Gila River. Drainages that connect two or more surface water bodies are surface waters. The Army Corps of Engineers issued a Section 404 permit for maintenance activities in the EMF in February of 2003. In addition, two wastewater treatment plants discharge to the EMF and have AZPDES permits.
MG	Hank Raymond Lake	Name correction to more prevalent "Lower Lake Pleasant"
MG	The Lake Tank	Correction from Santa Cruz to Middle Gila watershed
MG	Mineral Creek	Segmenting Mineral Creek into three reaches to account for proposed changes in designated uses applied to the diversion channel and tunnel that convey flow around mining operations. The hydrologic modifications within the diversion channel and tunnel prevent the attainment of the current designated uses. The natural stream channel exists above and below mine operations.
MG	Unnamed wash	Permitted outfall from City of Phoenix Cave Creek WRF no longer exists so deleted as EDW
MG	Unnamed wash	A new listing for the new outfall from Town of Cave Creek WRF discharges to an unnamed wash
MG	Unnamed wash	Permitted outfall from Queen Valley Sanitary District WWTP no longer exists so deleted as EDW
SC	Greene Wash	Adding a second segment in order to delineate tribal boundaries
SC	Paradise Lake	ADEQ is proposing to remove Paradise Lake from Appendix B, Surface Waters and Designated Uses. Paradise Lake was constructed around 1960. It is privately-owned and has no significant nexus with any surface waters. The homeowners association no longer has the water rights it had to keep the lake filled. To prevent the lake from drying up, the homeowners association wants to use treated effluent from the Arizona City Sanitary District.
SC	Santa Cruz River, West Branch	Clarifying the surface water's name, by deleting Santa Cruz Wash, West Branch and adding Santa Cruz River, West Branch
SC	Sycamore Canyon	Clarifying that part of the surface water is above 5,000 feet in elevation
SC	Unnamed wash	Deleting because an ephemeral wash is covered under R18-11-105 and the wash is unnamed.
SP	Mule Gulch	ADEQ proposes to change the aquatic and wildlife designated use of Mule Gulch from an effluent dependent water to an ephemeral. The Mule Gulch wastewater treatment plant was decommissioned in early 2006 and has not discharged into Mule Gulch since the first quarter of 2006, making the designated use of effluent dependent water no longer accurate nor necessary.
SP	Rucker Canyon Creek	Incorrectly listed in lake category
SP	Soldier Creek	Permitted outfall from Fort Huachuca WWTP no longer exists so deleted as EDW
SR	Unnamed wash	Permitted outfall from Cobre Valley Plaza WWTP no longer exists so deleted as EDW
UG	Bennett Wash	Permitted outfall from ADOC Safford WWTP no longer exists so deleted as EDW; as a named wash, the designated use is changed to ephemeral
UG	Cluff Ranch Pond #2	Name and location corrections by deleting Cluff Ranch Pond #2 and adding Evans Pond #2
UG	Unnamed Wash	Permitted outfall from ADOC Globe WWTP no longer exists so deleted as EDW
VR	Del Monte Wash	Adding two segments to reflect an ephemeral wash and an EDW wash that receives treated effluent from the City of Cottonwood wastewater treatment plant
VR	Green Valley Lake	A new listing created within American Gulch, a water of the U.S., which receives treated effluent from the Northern Gila County Sanitary District, American Gulch Water Reclamation Facility.

Appendix C Site-Specific Standards

ADEQ proposes to establish three site-specific standards for dissolved copper for the Aquatic and Wildlife designated use:

For a segment of Pinto Creek in the Salt River Watershed near Globe-Miami, the proposed standard would be 34 µg/L;



For a segment of Bright Angel Wash, which receives treated effluent from the Grand Canyon National Park South Rim Wastewater Treatment Plant, the proposed standard would be 42.5 µg/L;
For a segment of Transept Canyon, which receives treated effluent from the Grand Canyon National Park North Rim Wastewater Treatment Plant, the proposed standard would be 42.5 µg/L.

Surface water quality standards are implemented through and affect various surface water programs, such as the AZPDES permitting program. Under CWA § 402, an entity seeking to discharge pollutants to a surface water as a point source must have an AZPDES permit, and its discharge must meet limits established in the permit to meet applicable surface water quality standards. Water quality standards also are implemented through a biennial assessment of a State's surface waters. When a water body does not meet one or more of the applicable surface water quality standards, it is considered impaired under § 303(d) of the CWA. The consequence of an impaired water is that it may require a State to establish stricter water quality-based limitations, thereby impacting any source seeking to discharge to the impaired water. Section 303(d) requires that states list impaired waters in a biennial report evaluating and describing the status of water quality, which must be approved by EPA.

State and federal law authorize the adoption of site-specific standards that reflect local environmental conditions. The federal water quality standards at 40 CFR 131.11(b)(1)(ii) provides ADEQ with the authority to adopt water quality criteria that are "modified to reflect site-specific conditions." Similarly, A.R.S. § 49-221(C)(6) directs ADEQ to consider "[a]ny unique physical, biological, or chemical properties of the waters" when establishing surface water quality standards. Under A.R.S. § 49-222(C), ADEQ may consider the effect of local water quality characteristics on the toxicity of specific pollutants and the varying sensitivities of local, affected aquatic populations to pollutants when setting numeric water quality standards. ADEQ has specific authority for site-specific standards under R18-11-115, which identifies acceptable methods for developing a site-specific standard. Site-specific standards, like all surface water quality standards, must be based on a sound scientific rationale to protect the aquatic and wildlife designated use.

Background on Pinto Creek

Pinto Creek has not met the surface water quality standard for copper and has been listed as impaired since 1998. Pinto Creek flows in the historic Globe-Miami mining area, one of the major copper districts in the southwestern United States, with mining activities dating back to the late 1800's.

EPA developed a total maximum daily load analyses (TMDL) for Pinto Creek in 2001 based on existing available data. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet surface water quality standards. The TMDL allocates, or budgets, that amount among the point and non-point sources in the watershed that discharge the pollutant of concern. The ultimate goal of a TMDL is restoring water quality so that an impaired water no longer exceeds but rather attains applicable surface water quality standards. A TMDL is implemented through a variety of actions, including effluent limits in permits and watershed restoration efforts aimed at reducing or eliminating the pollutant of concern.

ADEQ began monitoring activities in the Pinto Creek watershed in 2002. ADEQ issued its Phase II TMDL Modeling Report (Phase II Report) in February 2006. Based on the monitoring results, ADEQ concluded that even after aggressive remediation of surrounding mining sites, much of upper Pinto Creek would not meet the copper standard because copper occurs naturally in the area. Because the natural background concentration of copper is higher than the standard in this copper-rich mining area, ADEQ determined that a site-specific standard needed to be developed for Pinto Creek.

ADEQ collected 670 water quality samples at 48 sites between 2000 and 2005. Of these water samples, approximately 126 were obtained from 21 sites in sub-watersheds judged to be representative of natural, pre-anthropogenic conditions. This information combined with numerous other environmental data was used to construct a dynamic watershed-water quality model of Pinto Creek using the Hydrologic Simulation Program Fortran (HSPF). This model provided a tool by which natural background water quality for all of Pinto Creek could be estimated with a reasonable degree of confidence.

A water quality model is a mathematical tool used to estimate or predict water quality conditions of water bodies under a specific set of environmental conditions. Part of the modeling process requires that a model be calibrated, which is the process by which a model's parameters or assumptions are changed to match available current field observations. A calibrated model should accurately predict existing conditions, and therefore should be reliable to estimate future conditions. An additional step in determining a representation of natural condition is to remove the model inputs that represent the human-caused sources of the pollutant from the model of the existing condition.



Using the Phase II Report, ADEQ calculated a site-specific standard for Pinto Creek of 42 µg/L [“Pinto Creek Site-Specific Water Quality Standard for Dissolved Copper,” Arizona Department of Environmental Quality, Water Quality Division, (March 12, 2007)]. The design of ADEQ’s 2007 study focused on monitoring results from multiple sites chosen to characterize different rock types but having no known anthropogenic sources of copper. Therefore, data from these sites should contain only naturally occurring levels of copper.

In the 2008 triennial review rulemaking, ADEQ proposed a site-specific standard of 42 µg/L for Pinto Creek, higher than the maximum amount of 29.28 µg/L set by EPA (based on a maximum allowable hardness of 400 mg/L). During the public comment period, commenters were generally opposed to the proposed standard for a variety of reasons including: consideration of past mining activities in the area, aerial deposition of copper from current and historic mines, impacts of wildfire, and the proximity of mining roads as well as other disturbances to areas thought to be the naturally occurring sites. Some of the commenters presented new information, including photos of disturbed areas upstream of one or more of ADEQ’s sampling locations thought to have no influence by anthropogenic activities related to copper. Based on the new information, ADEQ withdrew the site-specific standard for Pinto Creek from the final rule package, and revised the modeling calculations, which resulted in a modest change in the proposed standard.

One limitation of the modeling approach is that the effects of any unknown human-caused sources may be excluded from the model. This can result in human impacts being erroneously attributed to the natural condition. ADEQ reran the watershed model used to calculate the site-specific standard model after eliminating three sampling locations that had been used to estimate natural background because information presented by some commenters showed that these locations had been subject to anthropogenic activities related to copper. The current model predicted the natural background concentration of 26 µg/L as exceeding the default standard (23 µg/L based on the mean hardness). The average standard deviation (8.0) of copper from sites identified as representing natural background was added. ADEQ is proposing a site-specific standard of dissolved copper for Pinto Creek of 34 µg/L. This value is equal to the estimated maximum natural background concentration of dissolved copper in Pinto Creek thru the identified reach, and is a static value, not adjusted for variations in hardness for the A&Ww chronic criteria. The site specific standard for the A&Ww acute criteria will also be 34 µg/L where hardness values are less than 268 mg/L, but where hardness values are 268 mg/L or greater, the default hardness formula for acute copper values will need to be calculated.

Background on Grand Canyon surface waters

The Grand Canyon National Park’s two wastewater treatment plants discharge to Bright Angel Wash and Transept Canyon under AZPDES permits. Both facilities receive the same source water and have reported copper levels above the standard. With no industrial dischargers to these facilities, the initial hypothesis was naturally elevated copper concentrations in the source water.

A water effects ratio (WER) study was performed with effluent from each facility. The WER procedure is an EPA-approved procedure for developing site-specific standards for metals. A number of physical and chemical characteristics of site water and a metal can affect the toxicity of that metal to aquatic organisms in a particular surface water. When deriving site-specific aquatic life criteria for a metal, the difference between the toxicity of the metal in laboratory water and site water may be adjusted with a site water effect ratio. Toxicity differences of site water and synthetic laboratory water are compared in the laboratory, and evaluated for differential lethal concentrations. The toxicity endpoints from these two tests are used to calculate the WER, which is then multiplied by the national or state aquatic life criterion to calculate the site-specific limit. Based on the WER results, the current chronic water quality standard for copper can be increased to 42.5 µg/L without compromising the protection of sensitive aquatic species.

Background on this Rulemaking

The 2009 rulemaking had considerable stakeholder comments, amended most of the rule sections in Article 1, and reformatted the tables listing pollutant limits for specified designated uses. With such extensive amendments, some necessary elements were inadvertently omitted or listed erroneously. ADEQ began reviewing the rules for future amendments, but did not proceed with rulemaking until 2014 due to executive orders limiting agency rulemaking. ADEQ sought and received approval to proceed with rulemaking from both Governors Brewer and Ducey. ADEQ has taken the past actions related to these rules:

- December 26, 2014 Notice of Proposed Rulemaking, with an oral proceeding set for January 26, 2015.
- January 23, 2015, Notice of Public Information canceling the oral proceeding in response to Executive Order 2015-01 (Internal Review of Administrative Rules; Moratorium to Promote Jobs Creation and Customer-Service-Oriented Agencies).



- September 18, 2015 Notice of Termination to terminate the December 26, 2014 Notice of Proposed Rulemaking because the comment period had not been completed.
- September 18, 2015 Notice of Proposed Rulemaking, with an oral proceeding set and held on October 19, 2015.

After the comment period closed on October 19, 2015, EPA Region 9 expressed concern that the Notice of Proposed Rulemaking did not comply with the requirements in 40 CFR § 25.5(b) that notice of a hearing must be at least 45 days before the date of the hearing, and that reports, documents and data relevant to the discussion were not available to the public at least 30 days before the hearing. ADEQ had been concerned of the unknown impact of EPA's recently amended water quality standards rules, which became effective October 20, 2015. In subsequent discussions, ADEQ and EPA Region 9 agreed that ADEQ would renote the proposed rule changes for 45 days and explain why it was not adopting new or revised EPA criteria, as required under 40 C.F.R. § 131.20(a).

ADEQ terminated the September 18, 2015 Notice of Proposed Rulemaking in order to ensure an unambiguous proposed rulemaking. ADEQ made some minor changes, and published the Notice of Proposed Rulemaking on February 19, 2016.

The CWA requires states to hold, at least once every three years, a public hearing for the purpose of reviewing applicable water quality standards. EPA's role is one of oversight to review and approve or disapprove state water quality standards. EPA also is responsible for publishing national recommended criteria to assist states in establishing water quality criteria. States may use EPA's CWA section 304(a) criteria recommendations, modify them to reflect site-specific conditions, or establish criteria using other scientifically defensible methods. Under EPA's recently amended rules, if states choose not to adopt new or revised criteria during their triennial review for any parameters for which EPA has published new or updated criteria recommendations under CWA section 304(a), they must explain their decision when reporting the results of their triennial review to EPA.

Since the extensive amendments to these rules in 2009, ADEQ has always intended that this proposed rulemaking would be to address past errors and make minor adjustments. With two Arizona administrations issuing executive orders limiting agency rulemaking, ADEQ also considered suggested changes that would comply with the executive orders, mainly to lessen or ease a regulatory burden while achieving the same regulatory objective. ADEQ stated in the Preamble of the December 26, 2014 Notice of Proposed Rulemaking that although some stakeholders requested additional amendments, those suggestions did not meet the scope of the Governor's authorization or would require more in depth analysis, and would be postponed for the next Triennial Review. ADEQ is aware that since 2009, EPA has published new CWA section 304(a) criteria recommendations. At this time, ADEQ does not have adequate information to make informed decisions on those recommendations. It has been over seven years since the last amendments to the Arizona surface water quality standards rules; ADEQ needs to correct errors from the 2009 rulemaking, including reverting criteria in Appendix A to what was previously approved in 2003. ADEQ is beginning to develop plans for the next Triennial Review. ADEQ will need to evaluate its rules according to EPA's recently amended rules and the CWA section 304(a) criteria recommendations.

7. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

These studies are available on ADEQ's rulemaking website: <http://www.azdeq.gov/function/laws/draft.html#water>
ADEQ "Pinto Creek Site-Specific Water Quality Standard for Dissolved Copper, Salt River Watershed – HUC# 15060103-018, Gila, Maricopa and Pinal Counties, Arizona" (February 2011)
AECOM "Grand Canyon National Park –Water Effect Ratio Studies – Round 1; Acute Toxicity of Copper to *Ceriodaphnia dubia* in Site and Reconstituted Laboratory Water Under Static Test Conditions" (May 2008).
AECOM "Grand Canyon National Park –Water Effect Ratio Studies – Round 2; Acute Toxicity of Copper to *Ceriodaphnia dubia* in Site and Reconstituted Laboratory Water Under Static Test Conditions" (October 2008).
ADEQ "Location and Application of LCR Nutrient Standards" (February 2014)
ADEQ "A Review of the Status of Paradise Lake as an Arizona Surface Water" (August 2010)
ADEQ "Proposal to Remove Coors Lake from Appendix B" (January 2016)
ADEQ "Review of Proposed Designated Use Changes to Mineral Creek" (January 2016)

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

Not applicable

9. A summary of the economic, small business, and consumer impact:

A. Brief summary of the information included in the economic, small business and consumer impact statement:

The overall impact of the proposed changes should be very minor. Persons most affected by this rulemaking are



permittees under the AZPDES permitting program. The clarifications and correction of errors should benefit anyone, but particularly AZPDES permittees, who read and interpret the rules. ADEQ anticipates that a few of the rule changes may have a more specific impact. In addition to any costs, these rules overall benefit the general public. These rules ensure that clean water will be available as a source for drinking water, bathing, cooking, and is safe for swimming, fishing, boating, or other water-based recreation.

BACKGROUND

Surface water quality standards are provisions of state law required by the CWA and are implemented through and affect various surface water programs. The water quality standards consist of designating beneficial uses to a body of water and assigning numeric limits for allowable concentrations of pollutants, in order to protect the designated uses. Water quality standards are used both as a mechanism to establish goals and as a regulatory requirement when controls for discharges are inadequate.

The three main surface water programs affected by the surface water quality standards are:

- The AZPDES permitting program. Under § 402 of the CWA and A.R.S. § 49-255.01, an entity seeking a point source discharge of pollutants to a surface water must have an AZPDES permit, and its discharge must meet limits established in the permit to meet applicable surface water quality standards.
- The § 305(b) water quality assessment and § 303(d) impaired water listing. Section 305(b) of the CWA establishes a process to develop and report information on the quality of a State’s surface waters. ADEQ monitors surface waters within its boundaries, prepares a biennial report describing the status of water quality in Arizona rivers, streams, lakes, and reservoirs and submits the report to the U.S. Environmental Protection Agency (EPA). Surface water quality standards provide the benchmarks used to assess water quality status. When a water body does not meet one or more of the applicable surface water quality standards, it is considered impaired under § 303(d) of the CWA. ADEQ identifies and lists impaired waters that do not meet one or more of the surface water quality standards.
- Total Maximum Daily Load (TMDL) Program. The consequence of an impaired water is that it may require a State to establish stricter water quality-based limitations, thereby impacting any source seeking to discharge to the impaired water. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet surface water quality standards. The TMDL allocates, or budgets, that amount among the point and non-point sources in the watershed that discharge the pollutant of concern. The ultimate goal of a TMDL is restoring water quality so that an impaired water no longer exceeds but rather attains applicable surface water quality standards. A TMDL is implemented through a variety of actions, including effluent limits in permits and watershed restoration efforts aimed at reducing or eliminating the pollutant of concern.

B. Name and address of agency employees who may be contacted to submit or request additional data on the information included in the economic, small business and consumer impact statement:

Name: Wendy LeStarge
 Address: Arizona Department of Environmental Quality
 Water Quality Division
 1110 W. Washington St.
 Phoenix, AZ 85007
 Telephone: (602) 771-4836 (Toll-free number in Arizona: (800) 234-5677)
 Fax: (602) 771-4834
 E-mail: lestarge.wendy@azdeq.gov

C. Identification of persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking:

Entities likely to be directly affected by this rulemaking would be entities that discharge to a surface water under an AZPDES permit, including publicly and privately owned wastewater treatment plants and some mining facilities. For purpose of this analysis, ADEQ defines annual costs or revenues on a cost-revenue scale as follows:

- Minimal – less than \$10,000
- Moderate – \$10,000 to \$1 million
- Substantial – more than \$1 million

D. Cost-benefit analysis of probable costs and benefits to ADEQ and other agencies:

ADEQ could incur minimal costs in implementing this rulemaking. ADEQ does not anticipate any increase in FTEs or state funding to complete any additional TMDLs.

**E. Cost-benefit analysis of probable costs and benefits to political subdivisions and to businesses:**

ADEQ expects that some sections of this rulemaking will benefit a political subdivision or a business if it is a permitted discharger. The clarifications and correction of errors should benefit anyone, but particularly dischargers, who read and interpret the rules. ADEQ anticipates that the following rules will have only a minor impact, if any, to a discharger:

- R18-11-112. Outstanding Arizona Waters - ADEQ proposes to eliminate the latitude/longitude coordinates since the OAW location is listed in Appendix B.
- R18-11-110 Salinity Standards for the Colorado River - The updates to the 2014 current salinity standards and plan of implementation do not require changes in Arizona, so no cost or benefit is anticipated.
- Appendix A Numeric Water Quality Standards, Table 1, Water Quality Criteria by Designated Use - EPA did not approve revised criteria for twenty pollutants from ADEQ's 2009 rulemaking. ADEQ proposes to revert back to the numeric criteria last approved by EPA in 2003. ADEQ does not anticipate that these changes in numeric criteria will impact AZPDES dischargers because ADEQ has not been able to use the 2009 revised, state-approved criteria for these pollutants in AZPDES permits. There should be a benefit in that the rules will state what ADEQ is actually able to enforce.
- Appendix B Surface Waters and Designated Uses
 - Clarification of locations and names should benefit anyone reading and interpreting the rules. The change to NAD 83 will allow ADEQ to begin planning over the next few years to integrate surface waters listed in Appendix B with its internet GIS mapping system.
 - Boulder Creek - deleting the agricultural irrigation designated use will mean that the agricultural irrigation metal standards, where they exist, will be the same for all of Boulder Creek in this watershed and reflects the reality that there is no agricultural irrigation.
 - East Maricopa Floodway - adding East Maricopa Floodway (EMF) more accurately reflects the existing reality of permitted discharges. The Army Corps of Engineers recognized the EMF as a waters of the U.S. when it issued a Section 404 permit for maintenance activities in the EMF in February of 2003. Also, two wastewater treatment plants discharge to the EMF and have AZPDES permits. Correctly identifying EMF as a waters of the U.S. benefits anyone reading and interpreting the rules.
 - Mineral Creek - ADEQ anticipates no impact because any permitted discharge must still meet required downstream standards for designated uses of aquatic and wildlife, full body contact, fish consumption, and agricultural livestock watering. The manmade features of the tunnel were constructed to convey flow in Mineral Creek around mining operations. Work on the lined channel and an extension to the preexisting tunnel segment was finalized in March 2002.

F. Cost-benefit analysis of probable costs and benefits by rule section:R18-11-106 Net Ecological Benefit

ADEQ proposed to eliminate the requirement that a discharger have a plan to eliminate the discharge under active consideration as part of what must be demonstrated. Communities and developers should benefit by eliminating an extra burden in seeking to use high quality effluent to create aquatic and riparian ecosystems.

R18-11-109 Numeric Water Quality Standards

Currently the nutrient standards in subsection (F) apply to all tributaries of the listed waters, regardless of impact. The intent is to protect the downstream waters and lakes from nutrient accumulation and eutrophication. Eutrophication results in excessive growth of algae and nuisance aquatic plants, and can lead to conditions harmful to aquatic life. Wastewater treatment plants discharging to a surface water under subsection (F) may have to implement costly advanced treatment for nutrient removal. There are about 12 wastewater treatment plants that discharge under an AZPDES permit to one of the waters described in subsection (F).

Under the proposed changes, ADEQ will evaluate whether a discharge will impact a listed water or its perennial tributary before applying the nutrient standards. ADEQ anticipates that it will not have to apply nutrient standards to six of the 12 wastewater treatment plants because the volume, frequency, magnitude and/or duration of their discharge does not affect the downstream water. Of the six, three are publicly-owned and three are privately-owned. The six wastewater treatment plants currently have a variance in their AZPDES permits because they cannot meet the nutrient standards. Generally under a variance, a discharger is expected to implement steps to achieve the required water quality standard. With the change to subsection (F), ADEQ anticipates that at least six wastewater treatment plants discharging under an AZPDES permit will not have to implement costly advanced treatment for nutrient removal.

R18-11-115 Site-Specific Standards



ADEQ is adding more flexibility to the process that allows an outside party to submit a scientifically defensible study to support development of the site-specific standard. A person or entity can choose to submit an abbreviated study outline that uses the most recent EPA-recognized procedures, or submit a more rigorously documented study outline using any scientifically defensible procedure. ADEQ anticipates that the additional flexibility on the study requirements should benefit entities proposing new site specific standards, such as AZPDES dischargers. ADEQ is unable to quantify the benefit, but since about 2007, ADEQ has received only three studies to support a site-specific standard. ADEQ would anticipate that under the proposed changes, it may receive more studies.

R18-11-121 Schedules of Compliance

Currently, a discharger has a set time of three years to come into compliance with a new or revised surface water quality standard under a compliance schedule. ADEQ proposes to create a more flexible standard that allows ADEQ to look at certain factors in determining the time needed in the compliance schedule. The change should benefit the regulated community by allowing a more individual consideration of an entity's circumstances to achieve compliance. Currently six dischargers have a compliance schedule in their AZPDES permits.

Appendix B Surface Waters and Designated Uses

There are eleven surface waters that were categorized as effluent dependent because they received an outfall from a permitted discharge. The permitted discharge no longer exists (a few wastewater treatment plants were decommissioned, a few changed disposal methods so that they no longer discharged to a surface water). ADEQ proposes to categorize these waters as ephemeral. This change would benefit anyone in control of stormwater discharges to the ephemeral water, because an ephemeral water needs to meet acute (less stringent) standards, where an effluent-dependent water is protected for both acute and chronic (more stringent) standards.

ADEQ is adding four effluent dependent waters to reflect permitted discharges to ephemeral washes. AZPDES permittees already meet the effluent dependent standards that are set in their permits. This change would affect anyone in control of stormwater discharges to one of these surface waters, because an effluent-dependent water is protected for both acute and chronic (more stringent) standards where an ephemeral water needs to meet acute (less stringent) standards only.

Removing Paradise and Coors Lakes as surface waters that are not regulated under the CWA is a legal interpretation. Removing these two waters may have some impact, since both lakes rely to a certain extent on groundwater pumping to maintain levels. Persons supporting and opposing removing Paradise Lake as a surface water submitted some cost information, but without supporting documentation. Persons supporting removing Paradise Lake stated that reclaimed water will allow for another source of water for the lake and will be beneficial for costs. A person opposed to removing Paradise Lake stated that any savings in using reclaimed water would be minimal of only about \$8,000 per year.

Any other changes to Appendix B can potentially impact those discharging under an AZPDES general permit. ADEQ's general permits with the most permittees are to regulate stormwater discharges primarily by requiring the use of best management practices to lessen pollutants.

Appendix C Site-Specific Standards

A permitted discharger that cannot meet standards faces the regulatory burden of either ending the discharge or installing treatment to remove the specific pollutant to the standard level. ADEQ proposes to establish three site-specific standards for dissolved copper:

- For a segment of Pinto Creek, the proposed standard would be 34 µg/L;
- For a segment of Bright Angel Wash, the proposed standard would be 42.5 µg/L;
- For a segment of Transept Canyon, the proposed standard would be 42.5 µg/L

The proposed site-specific standards would allow potential dischargers to discharge at the higher numeric value for copper, thereby decreasing the regulatory burden in future AZPDES permits. The proposed site-specific standards have no effect on designated uses related to humans, such as a drinking water source or full-body contact.

ADEQ is responsible for reducing pollutants in impaired waters by limiting discharges to the impaired water and through remediation projects. The segment of Pinto Creek has not met the surface water quality standard for copper and has been listed as an impaired water since 1998. EPA developed a TMDL in 2001, but the current applicable standard is unattainable for TMDL implementation likely due to natural mineralization and historic mining in the basin. ADEQ has already approved two Water Quality Improvement (Section 319) grants totaling \$710,277 to reduce pollutant loads from non-point sources. The site specific standard for Pinto Creek will allow ADEQ to complete a second phase TMDL and assign waste load allocations based upon the new standard. The site-specific stan-



standard for Pinto Creek allows a realistic, achievable surface water quality standard to guide both permitting decisions and clean-up actions.

The site-specific standard would help the Grand Canyon North Rim and South Rim WWTP's. These facilities currently have applications in for a variance for copper. This would eliminate them having to commit resources in showing reasonable progress towards achieving the original standard.

G. Probable impact on public and private employment:

ADEQ does not anticipate that private or public employment will be directly affected by these rules.

H. Probable impact on small businesses:

ADEQ would define a small business as any AZPDES permitted facility that discharges less than 1 million gallons per day.

1) The administrative and other costs required for compliance with the proposed rule making.

These rules do not have any administrative costs, nor establish any reporting schedules or deadlines for small businesses. ADEQ does not anticipate that any small dischargers will be affected by the proposed rulemaking.

2) A description of the methods prescribed in section 41-1035 that the agency may use to reduce the impact on small businesses, with reasons for the agency's decision to use or not to use each method.

(i) Establish less costly schedules or less stringent deadlines for compliance, or consolidate or simplify the rule's compliance or reporting requirements in the proposed rule making.

ADEQ does not anticipate that the proposed rule changes will affect minor dischargers, other than as described in this EIS.

(ii) Establish less costly compliance requirements, including establishing performance standards to replace design or operational standards in the proposed rule making.

The changes in the nutrient standards in R18-11-109 (F) should benefit the three privately owned wastewater treatment plants, which currently have a variance in their AZPDES permits because they cannot meet the nutrient standards. These three entities each discharge less than one million gallons per day so they would be considered a small business. ADEQ anticipates that the change to R18-11-109 (F) will benefit the three dischargers because they will not have to implement costly advanced treatment for nutrient removal. Additionally, for the changes to R18-11-121, one of the six dischargers with a compliance schedule in their AZPDES permits discharges less than one million gallons per day. The change to the compliance schedule rule should benefit the small business discharger by allowing a more individual consideration of its circumstances to achieve compliance.

(iii) Exempt small businesses from any or all requirements of the proposed rule making.

As a federally-delegated program, ADEQ's laws, rules, and program must comply with EPA requirements.

3) The probable cost and benefit to private persons and consumers who are directly affected by the proposed rule making.

Private persons and consumers are not directly affected by this rulemaking, but benefit indirectly. Improving the effectiveness of water quality regulation leads to restoring and maintaining the chemical, physical, and biological integrity of Arizona's waters. Improved water quality has many human health and ecological benefits, impacting:

- Drinking Water Treatment and Household Water Use. Reducing contaminants, nutrients, and sediment in surface water supplies lowers the cost of treating these waters, reduces the health risk from potential exposure to contaminated drinking water, and avoids the need for cities, towns and other public water systems to develop alternative water sources or supplies.
- Agricultural Water Use. Clean water ensures agricultural productivity. As noted in the Arizona Department of Agriculture's Annual Report, FY2014-2015, Arizona ranks third in the nation for overall production of fresh market vegetables. Arizona acreage produced over 89.6 million cartons of fresh produce last year. Arizona ranks second in the nation in production of iceberg lettuce, leaf lettuce, romaine lettuce, cauliflower, broccoli, spinach, cantaloupes, and honeydews.
- Industrial Water Use. Sediment discharges may have negative effects on industrial water users. Suspended sediment increases the rate at which hydraulic equipment, pumps, and other equipment wear out, causing accelerated depreciation of capital equipment.
- Human Health Improvements. Some contaminants, such as mercury and DDT, may persist for long periods of time and bioaccumulate, meaning they can be found in levels several times higher than ambient water in large fish such as bass that consume contaminated bottom dwelling animals. Eating fish contaminated with mercury or PCBs may lead to developmental and neurological problems and is especially hazardous for children and pregnant women. Ensuring cleaner water may lead to a reduction in illness either through reduced consumption



of contaminated seafood or through reduced exposure to infectious disease during recreation activities in contaminated waters.

- Recreational activities. Although considered a desert state, Arizona has many recreational activities enhanced by clean water.
 - Fishing. Degraded water can reduce fish populations by inhibiting reproduction and survival of an aquatic species. As an economic indicator of fishing’s impact, the Arizona Game and Fish Department (AZGFD) issued 126,056 resident general fish licenses for 2013 (AZGFD 2013-2014 Annual Report).
 - Boating. Polluted water reduces the aesthetic appeal of recreational boating activities and can be damaging to motors and equipment (e.g., algae, excessive weed growth).
 - Swimming. Pollution of water by toxic chemicals or by fecal indicator bacteria may cause closure of water bodies for swimming. Eutrophication caused by nutrients and turbidity caused by sediment and other pollutants also may greatly reduce a swimmer’s aesthetic enjoyment of a water body.

I. Probable effect on state revenues:

There are no fees associated with these rules. This rulemaking will have no impact on state revenues.

J. Description of less intrusive or less costly alternative methods of achieving the proposed rulemaking:

Water quality standards are provisions of state law required by the Clean Water Act, and are required to be revised at least once every three years.

K. Explanation of the limitations of the data available for this economic small business and consumer impact statement.

ADEQ does not require the costs of treatment as part of the regular AZPDES permitting program, so any specific information on costs was obtained through informal means from permittees or other knowledgeable individuals.

10. A description of any changes between the proposed rulemaking, to include supplemental notices, and the final rulemaking:

In Appendix A, Table 1, for the parameters Dibromochloromethane and Bromodichloromethane, under the designated use FBC, the proposed text reads “~~18,667~~ TTHM See (g)”. In response to comments, ADEQ changed the text to “~~18,667~~ TTHM”, deleting the reference to footnote (g). As detailed in the response to comment #5, ADEQ does not believe that deleting the text “See (g)” constitutes a substantial change, because:

Footnote g was added in the 2009 rulemaking.

ADEQ has stated throughout this rulemaking of its intent to revert back to numeric criteria that EPA last approved in 2003 for twenty pollutants EPA did not approve from 2009.

TTHM was the text in the pre-2009 version of the rules (see Notice of Final Rulemaking, 14 A.A.R. 4708, at 4864-4865, December 26, 2008.)

Before the 2009 amendments, there was no numeric criteria for FBC for Dibromochloromethane and Bromodichloromethane as the prior reference to “TTHM” meant no numeric standard (see Notice of Final Rulemaking, 14 A.A.R. 4708, at 4871)

In Appendix A, Table 1, for the parameter Total Chromium, the Notice of Proposed Rulemaking proposed reverting to the pre-2009 criteria of 100 µG/L for the designated uses of PBC and FBC. In response to comments, ADEQ is returning the criteria to the original text of no numeric standard. ADEQ does not believe that returning to the original text constitutes a substantial change. As detailed in the response to comment #6, the FBC/PBC standard was inconsistent before the 2009 amendments, in that the two constituents of Chromium III and Chromium VI would greatly exceed the Total Chromium standard of 100 µG/L for both FBC and PBC.

In Appendix A, Table 1, ADEQ added footnote k, which describes the values used in the mathematical equations of the subsequent tables.

k. Abbreviations for the mathematical equations are as follows:

e = the base of the natural logarithm and is a mathematical constant equal to 2.71828

LN = is the natural logarithm

CMC = Criterion Maximum Concentration (acute)

CCC= Criterion Continuous Concentration (chronic)

Also in response to comments for the new segment of Mineral Creek in Appendix B, ADEQ changed the latitude of the tunnel inlet to 33°12’24” and renamed the segment to “Mineral Creek (diversion tunnel and lined channel)”. ADEQ also made various grammatical and technical changes at the suggestion of the Governor’s Regulatory Review Council staff.



11. An agency’s summary of the public or stakeholder comments made about the rulemaking and the agency response to the comments:

1. R18-11-121, Schedules of Compliance: Should the paragraph be lettered “A”?
 ADEQ RESPONSE: No. The Secretary of State’s rule, A.A.C. R1-1-408(I), specifies the subsection labeling requirements.

2. R18-11-121: Compliance schedules should be flexible enough to accommodate a situation where it would be more cost effective to build a new facility than to modify an old or outdated facility.
 ADEQ RESPONSE: Deleting the set time of three years allows ADEQ to create a more flexible schedule and to consider an entity’s individual circumstances to achieve compliance. The five factors listed are based on EPA’s guidance in interpreting whether a compliance schedule is appropriate under 40 C.F.R. § 122.47(a). Cost effectiveness is not one of EPA’s five factors; however cost effectiveness is a consideration for a variance, under R18-11-122. A variance is another mechanism to provide regulatory flexibility when it is not technically or economically feasible for a discharger to achieve compliance with a water quality standard.

3. Appendix A, Numeric Water Quality Standards: For the criteria for hardness-dependent metals, can ADEQ retain the existing tables, provide the full tables on its web site, or provide an online calculator.
 ADEQ RESPONSE: ADEQ is currently working on updating its website to include an online calculator to calculate the applicable criteria at each hardness level, which it expects to be online by July 2016.

4. Appendix A, Table 1. Water Quality Criteria by Designated Use: Cadmium, A&Ww Acute (µg/L), the “4” should be omitted as it refers to the Cadmium Table in the rule to be revised.
 ADEQ RESPONSE: The “4” is being removed; the proposed rule complies with the Secretary of State’s requirements in A.A.C. R1-1-502(B)(18) for showing deleted and new text.

5. Appendix A, Table 1: The FBC standards for Dibromochloromethane and Bromodichloromethane were changed from 18,667 µg/L to the Total Trihalomethane (TTHM) limit established in footnote (g), which says the TTHM standard is exceeded when the sum of the four compounds exceeds 80 µg/L. How can a permittee comply with the TTHM standard in footnote (g) for adding all four compounds (Dibromochloromethane, Bromodichloromethane, Chloroform, and Bromoform) when Chloroform is 230 µg/L and Bromoform is 180 µg/L? The FBC standards for Dibromochloromethane and Bromodichloromethane should be returned to 18,667 µg/L.
 ADEQ RESPONSE: The commentor is correct that the FBC standards for the individual pollutants, added together, will exceed the TTHM standard of 80 µg/L, which is for drinking water designated use only. EPA did not approve the 2009 proposed FBC 18,667 µg/L standards for Dibromochloromethane and Bromodichloromethane, so ADEQ cannot retain them. In the case of Dibromochloromethane and Bromodichloromethane, ADEQ planned to revert to the numeric criteria of “TTHM”, which was listed EPA last approved in 2003. ADEQ’s error is that “TTHM” no longer means the same as what was approved in 2003; it was amended in 2009 to the current language in footnote g.

ADEQ believes the solution is to delete the footnote citation “see (g)”, so that both Dibromochloromethane and Bromodichloromethane will list “TTHM” under FBC. Setting the FBC standard as “TTHM” means to reference Trihalomethanes (T) in Appendix A, Table 1, which has no numeric standard for FBC (the changes are described below):

Parameter		Pre-2009	2009 change	2016 proposed	Proposed change
TTHM (FBC)		NNS (no numeric number)			
	Dibromochloromethane	TTHM	18,667 µg/L	TTHM see (g)	TTHM
	Bromodichloromethane	TTHM	18,667 µg/L	TTHM see (g)	TTHM
Footnote (g) was added in the 2009 rulemaking: “The total trihalomethane (TTHM) standard is exceeded when the sum of these four compounds exceeds 80 µg/L, as a rolling annual average.”					

ADEQ does not believe that deleting the text “See (g)” constitutes a substantial change, because: Footnote g was added in the 2009 rulemaking. ADEQ has stated throughout this rulemaking of its intent to revert back to numeric criteria that EPA last approved in 2003 for twenty pollutants EPA did not approve from 2009. TTHM was the text in the pre-2009 version of the rules (see Notice of Final Rulemaking, 14 A.A.R. 4708, at 4864-4865, December 26, 2008.) Before the 2009 amendments, there was no numeric criteria for FBC for Dibromochloromethane and Bromodichloromethane as the prior reference to “TTHM” meant no numeric standard (see Notice of Final Rulemaking, 14 A.A.R. 4708, at 4871)



ADEQ thanks the commentor City of Phoenix for discovering this error, and notes that the waters of likely concern (EDW reaches such as the Salt River from the City of Phoenix 23rd Ave WWTP outfall to the confluence with the Gila River) carry the PBC designated use, for which the 18,667 µg/L standard for Dibromochloromethane and Bromodichloromethane does still apply. Waters carrying the FBC designated use will still be required to meet the individual numeric standards for Chloroform and Bromoform.

6. Appendix A, Table 1: The FBC and PBC standard for Total Chromium is 100 µg/L, but its individual constituents are Chromium III at 1,400,000 µg/L and Chromium VI 2,800 µg/L. This will make compliance with the standards challenging. ADEQ RESPONSE: The commentor is correct. ADEQ is returning the criteria to the original text of no numeric standard.

Chromium occurs in the environment primarily in two states, trivalent chromium (Chromium III) and hexavalent chromium (Chromium VI). The Total Chromium standard was inconsistent before the 2009 amendments, in that the two constituents of Chromium III and Chromium VI would greatly exceed the Total Chromium standard of 100 for both FBC and PBC. For the 2009 amendments, ADEQ proposed to delete the 100 standard for Total Chromium for FBC and PBC on the rationale that certain reference factors necessary to calculate a criteria for PBC or FBC did not exist (such as the relative source contribution) and ADEQ did not believe that a reliable criterion could be derived for PBC or FBC. The historical changes are described below:

Parameter	Pre-2009	2009 change	2016 proposed
Total Chromium (FBC and PBC)	100 T		100 T
	Chromium III	2,100,000 µg/L	1,400,000 µg/L
	Chromium VI	4,200 µg/L	2,800 µg/L

EPA did not accept ADEQ’s rationale and did not act on the proposed change to no criteria. ADEQ proposed to return the Total Chromium standard for both FBC and PBC to 100. In response to comments ADEQ reexamined the proposed language and decided to retain the original text of no numeric standard for the following reasons:

- ADEQ has standards protective of human health and the environment for Chromium III and Chromium VI for all designated uses (other than agricultural).
- Reliable reference factors necessary to calculate a criterion for PBC or FBC still do not exist for Total Chromium.
- EPA and other surrounding states have PBC/FBC standards for Chromium III and Chromium VI and set Total Chromium for a drinking water designated use.
- Total Chromium set at 100 µg/L for the designated uses of PBC and FBC is not supported by any data.

7. Appendix A, Table 1: For Nitrate, the CAS Number and PBC standard is split into two rows and is difficult to read. ADEQ RESPONSE: The Secretary of State’s office is responsible for publishing the Arizona Register and Arizona Administrative Code.

8. Appendix A, Table 1: footnote (f) should include definitions of the following abbreviations: DWS, FC, FBC, PBC, A&Wc, A&Www, A&Wedw, AgI, and AgL. ADEQ RESPONSE: These acronyms are defined in R18-11-101.

9. Appendix A: An explanation of the calculations used in tables 2 – 12 should be included in the rule. ADEQ RESPONSE: ADEQ has added footnote k after Table 1 to explain the abbreviations used.

10. Appendix B. Surface Waters and Designated Uses: Two designations for the Phoenix Area Canals should be clarified for the issue if water treatment plants (WTP) are constructed in succession along a single canal, would the first WTP be considered a drinking water source (DWS) canal and the second WTP be a non-DWS canal? ADEQ RESPONSE: The designation language for the Phoenix area canals is consistent with the language for Yuma area canals; DWS designation above the WTP intakes, but not below them. As the language refers to all “WTP intakes”, the DWS designation applies until below the last WTP intake.

11. Appendix B: A portion of the Salt River from the 23rd Avenue WWTP outfall to the 91st Avenue WWTP Outfall should be classified as ephemeral, and the Dobson Lake system and the Riverview Park Lake should be removed from Appendix B as these waters are maintained by purchased water purchased and precipitation runoff from storm events. ADEQ RESPONSE: Redesignating or removing additional waters from Appendix B at this stage of the rulemaking would be a substantial change, requiring that ADEQ renounce the changes and open the rulemaking up for an additional 45-day public comment period. ADEQ is not opposed to the suggested changes and will work with the city commentors to conduct any necessary studies supporting these changes for the next Triennial Review.

12. Appendix B: For the new segment of Mineral Creek, the correct latitude of the tunnel inlet should be 33° 12’ 24”. The commentor also suggests that the new segment be referred to “Mineral Creek (diversion tunnel and lined channel)”. ADEQ RESPONSE: ADEQ agrees and has made both changes.

13. R18-11-101 Definitions: The existing regulatory definition of surface water tracks the federal definition of the term “waters of the United States” (“WOTUS”) from 1986, which has been held to be overly broad in some respects by two Supreme Court



decisions. Federal agencies adopted guidance to interpret the Supreme Court decisions (last revised in 2008). As the recently adopted regulatory definition has been stayed by multiple courts pending the resolution of numerous legal challenges to the rule, the 2008 guidance remains in effect in Arizona. ADEQ should clarify in the preamble to the final rule that notwithstanding the outdated definition contained in the rules, the phrase “surface water” will be interpreted for purposes of the SWQS as applying to WOTUS as defined by governing legal precedent.

ADEQ RESPONSE: Comment noted, however it is outside the scope of this rulemaking.

14. The following is a summary of sections for which ADEQ received supportive comments:

- R18-11-106, Net Ecological Benefit: Removal of the requirement that there needs to be “...a plan to eliminate the discharge...”
- R18-11-109, Numeric Water Quality Standards: Change in nutrient standards.
- R18-11-115, Site-Specific Standards: Enhanced flexibility that will be achieved by additional grounds for adopting site-specific criteria and allowing a broader range of studies to be submitted in support.
- R18-11-115: Adding natural adaptive process and the Biotic ligand model.
- R18-11-121, Schedules of Compliance: Eliminate the three year limitation on compliance schedules because allows dischargers the time needed to address particularly challenging situations that sometimes arise.
- Appendix A, Numeric Water Quality Standards: Revising the state rules to reflect the EPA-approved criteria for the particular 21 pollutants and uses, since it will eliminate permittee confusion.
- Appendix B: Supports discrete new segment of Mineral Creek (comprising the diversion tunnel and concrete-lined channel) that will have partial body contact as the only assigned designated use.

12. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

The rules do not require permits, but establish standards. Standards are enforced as limitations in both individual and general permits. The rules governing permits are in Title 18, Chapter 9.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

The administrative rules are consistent with federal law and are no more stringent than federal law.

c. Whether a person submitted an analysis to the agency that compares the rule’s impact on the competitiveness of business in this state to the impact on business in other states:

No person has submitted an analysis to the agency that compares the rule’s impact on the competitiveness of business in this state to the impact on business in other states.

13. List of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

- R18-11-110(B) 2014 Review, Water Quality Standards for Salinity, Colorado River System
- R18-11-112(D)(4)(a) Endangered and Threatened Wildlife, 50 CFR 17.11 (revised 2005) and Endangered and Threatened Plants, 50 CFR 17.12 (revised 2005)

14. Whether the rule was previously made, amended or repealed as an emergency rule. If so, cite the notice published in the Register as specified in R1-1-409(A). Also, the agency shall state where the text was changed between the emergency and the final rulemaking packages:

Not applicable

15. The full text of the rule follows:

TITLE 18. ENVIRONMENTAL QUALITY

**CHAPTER 11. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY STANDARDS**

ARTICLE 1. WATER QUALITY STANDARDS FOR SURFACE WATERS

Section	
R18-11-106.	Net Ecological Benefit
R18-11-109.	Numeric Water Quality Standards
R18-11-110.	Salinity Standards for the Colorado River
R18-11-112	Outstanding Arizona Waters
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ARTICLE 1. WATER QUALITY STANDARDS FOR SURFACE WATERS



R18-11-106. Net Ecological Benefit

- A. The Director may, by rule, modify a water quality standard on the ground that there is a net ecological benefit associated with the discharge of effluent to support or create a riparian and aquatic habitat in an area where water resources are limited. The Director may modify a water quality standard for a pollutant if it is demonstrated that:
 1. The discharge of effluent creates or supports an ecologically valuable aquatic, wetland, or riparian ecosystem in an area where these resources are limited;
 2. The ecological benefits associated with the discharge of effluent under a modified water quality standard exceed the environmental costs associated with the elimination of the discharge of effluent;
 3. The cost of treatment to achieve compliance with a water quality standard is so high that it is more cost effective to eliminate the discharge of effluent to the surface water. The discharger shall demonstrate that it is feasible to eliminate the discharge of effluent that creates or supports the ecologically valuable aquatic, wetland, or riparian ecosystem ~~and that a plan to eliminate the discharge is under active consideration;~~
 4. The discharge of effluent to the surface water will not cause or contribute to a violation of a water quality standard that has been established for a downstream surface water;
 5. All practicable point source discharge control programs, including local pretreatment, waste minimization, and source reduction programs are implemented; and
 6. The discharge of effluent does not produce or contribute to the concentration of a pollutant in the tissues of aquatic organisms or wildlife that is likely to be harmful to humans or wildlife through food chain concentration.
- B. The Director shall not modify a water quality criterion for a pollutant to be less stringent than a technology-based effluent limitation that applies to the discharge of that effluent. The discharge of effluent shall, at a minimum, comply with applicable technology-based effluent limitations.

R18-11-109. Numeric Water Quality Standards

- A. *E. coli* bacteria. The following water quality standards for *Escherichia coli* (*E. coli*) are expressed in colony forming units per 100 milliliters of water (cfu / 100 ml) or as a Most Probable Number (MPN):

<i>E. coli</i>	FBC	PBC
Geometric mean (minimum of four samples in 30 days)	126	126
Single sample maximum	235	575

- B. pH. The following water quality standards for pH are expressed in standard units:

pH	DWS	FBC, PBC, A&W ¹	AgI	AgL
Maximum	9.0	9.0	9.0	9.0
Minimum	5.0	6.5	4.5	6.5

- C. The maximum allowable increase in ambient water temperature, due to a thermal discharge is as follows:

A&Ww	A&Wedw	A&Wc
3.0° C	3.0° C	1.0° C

- D. Suspended sediment concentration.

- 1. The following water quality standards for suspended sediment concentration, expressed in milligrams per liter (mg/L), are expressed as a median value determined from a minimum of four samples collected at least seven days apart:

A&Wc	A&Ww
25	80

- 2. The Director shall not use the results of a suspended sediment concentration sample collected during or within 48 hours after a local storm event to determine the median value.

- E. Dissolved oxygen. ~~The following water quality standards for dissolved oxygen are expressed in milligrams per liter (mg/L) A surface water meets the water quality standard for dissolved oxygen when either:~~

1.	Dissolved oxygen	A&Ww	A&We
	Single sample minimum ²	6.0	7.0
2.	Dissolved oxygen in effluent dependent waters		
	(single sample minimum)	A&Wedw	
	Three hours after sunrise to sunset	3.0	
	Sunset to three hours after sunrise	1.0	



3. ~~A surface water meets with the water quality standard for dissolved oxygen if the percent saturation of dissolved oxygen is equal to or greater than 90 percent.~~

1. The percent saturation of dissolved oxygen is equal to or greater than 90 percent, or
2. The single sample minimum concentration for the designated use, as expressed in milligrams per liter (mg/L) is as follows:

Designated Use	Single sample minimum concentration in mg/L
<u>A&Ww</u>	<u>6.0</u>
<u>A&Wc</u>	<u>7.0</u>
<u>A&W edw for a sample taken from three hours after sunrise to sunset</u>	<u>3.0</u>
<u>A&W edw for a sample taken from sunset to three hours after sunrise</u>	<u>1.0</u>
<u>The single sample minimum concentration is the same for the designated use in a lake, but the sample must be taken from a depth no greater than one meter</u>	

F. Nutrient criteria. The following are water quality standards for total phosphorus and total nitrogen ~~are~~ (expressed in milligrams per liter (mg/L)) that apply to the surface waters listed below. A minimum of 10 samples, each taken at least 10 days apart in a consecutive 12-month period, are required to determine a 90th percentile. Not more than 10 percent of the samples may exceed the 90th percentile value listed below. The Director will apply these water quality standards for total phosphorus and total nitrogen to a surface water listed below, and to any source discharging to a tributary (ephemeral, intermittent, effluent dependent water or perennial) based on volume, frequency, magnitude and duration of the discharge and distance to the downstream surface water listed below:

1. Verde River and its perennial tributaries from the Verde headwaters to Bartlett Lake:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.10	0.30	1.00
Total nitrogen	1.00	1.50	3.00

2. Black River, Tonto Creek and their perennial tributaries for any segments that are not located on tribal lands:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.10	0.20	0.80
Total nitrogen	0.50	1.00	2.00

3. Salt River and its perennial tributaries above Roosevelt ~~Reservoir, excluding Pinal Creek,~~ Lake for any segments that are not located on tribal lands:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.12	0.30	1.00
Total nitrogen	0.60	1.20	2.00

4. Salt River below Stewart Mountain Dam to its confluence with the Verde River:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.05	–	0.20
Total nitrogen	0.60	–	3.00

5. Little Colorado River and its perennial tributaries upstream ~~above River Reservoir in Greer, South Fork of Little Colorado River above South Fork Campground, and Water Canyon Creek above Apache-Sitgreaves National Forest boundary~~ from:

- a. The headwaters to River Reservoir,
- b. South Fork of Little Colorado River at 34°00'49"/109°24'18" to above South Fork Campground at 34°04'49"/109°24'18", and



c. The headwaters of Water Canyon Creek to the Apache-Sitgreaves National Forest boundary:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.08	0.10	0.75
Total nitrogen	0.60	0.75	1.10

6. Little Colorado River at the crossing of Apache County Road No. 124:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	-	-	0.75
Total nitrogen	-	-	1.80

7. From the Little Colorado River above Lyman Lake to above the Amity Ditch diversion near crossing of Arizona Highway 273 (applies only when in-stream turbidity is less than 50 NTU); and State Route 260 at 34°06'39"/109°18'55" to Lyman Lake:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.20	0.30	0.75
Total nitrogen	0.70	1.20	1.50

8. Colorado River at the Northern International Boundary near Morelos Dam:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	-	0.33	-
Total nitrogen	-	2.50	-

9. Oak Creek from its headwaters at 35°01'30"/111°44'12" to its confluence with the Verde River at 34°40'41"/111°56'30" and the West Fork of Oak Creek from its headwaters at 35°02'44"/111°54'48" to its confluence with Oak Creek at 34°59'14"/111°44'46".

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	1.00 <u>0.1</u>	1.50 <u>0.25</u>	2.50 <u>0.30</u>
Total nitrogen	0.40 <u>1.00</u>	0.25 <u>1.50</u>	0.30 <u>2.50</u>

10. No discharge of wastewater to Show Low Creek or its perennial tributaries upstream of and including Fools Hollow Lake shall exceed 0.16 mg/L total phosphates as P.

11. No discharge of wastewater to the San Francisco River or its perennial tributaries upstream of Luna Lake Dam shall exceed 1.0 mg/L total phosphates as P.

G. Footnotes:

1. Includes A&Wc, A&Ww, A&Wedw, and A&We.
2. "2" ~~The dissolved oxygen water quality standard for a lake applies below the water surface but not at a depth greater than one meter.~~

R18-11-110. Salinity Standards for the Colorado River

A. The flow-weighted average annual salinity in the lower main stem of the Colorado River shall not exceed the following criteria:

Location	Total Dissolved Solids
Below Hoover Dam	723 mg/L
Below Parker Dam	747 mg/L
At Imperial Dam	879 mg/L

B. The plan of implementation contained in the "2005 2014 Review, Water Quality Standards for Salinity, Colorado River System,"



approved October ~~2005~~ 2014, is incorporated by reference to preserve the basin-wide approach to salinity control developed by the Colorado River Basin Salinity Control Forum and to ensure compliance with the numeric criteria for salinity in subsection (A). This material does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or may be obtained from the Colorado River Basin Salinity Control Forum, 106 West 500 South, Suite 101, Bountiful, Utah 84010-6232 or at <http://www.coloradoriversalinity.org/>.

R18-11-112. Outstanding Arizona Waters

- A. The Director shall classify a surface water as an outstanding Arizona water (OAW) by rule.
- B. The Director may adopt, under R18-11-115, a site-specific standard to maintain and protect existing water quality in an OAW.
- C. Any person may nominate a surface water for classification as an OAW by filing a nomination with the Director. The nomination shall include:
1. A map and a description of the surface water;
 2. A written statement in support of the nomination, including specific reference to the applicable criteria for an OAW classification prescribed in subsection (D);
 3. Supporting evidence demonstrating that the criteria prescribed in subsection (D) are met; and
 4. Available water quality data relevant to establishing the baseline water quality of the proposed OAW.
- D. The Director may classify a surface water as an OAW based upon the following criteria:
1. The surface water is a perennial or intermittent water;
 2. The surface water is in a free-flowing condition. For purposes of this subsection, "in a free-flowing condition" means that a surface water does not have an impoundment, diversion, channelization, rip-rapping or other bank armor, or another hydrological modification within the reach nominated for an OAW classification;
 3. The surface water has good water quality. For purposes of this subsection, "good water quality" means that the surface water has water quality that meets or is better than applicable surface water quality standards. A surface water that is listed as impaired under R18-11-604(E) is ineligible for OAW classification; and
 4. The surface water meets one or both of the following conditions:
 - a. The surface water is of exceptional recreational or ecological significance because of its unique attributes, such as the geology, flora and fauna, water quality, aesthetic value, or the wilderness characteristic of the surface water;
 - b. An endangered or threatened species is associated with the surface water and the existing water quality is essential to the species' maintenance and propagation or the surface water provides critical habitat for the threatened or endangered species. An endangered or threatened species is identified in "Endangered and Threatened Wildlife," 50 CFR 17.11 (revised 2005), and "Endangered and Threatened Plants," 50 CFR 17.12 (revised 2005). This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or may be obtained from the National Archives and Records Administration at <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1>.
- E. The Director shall hold at least one public meeting in the local area of a surface water that is nominated for classification as an OAW to solicit public comment on the nomination.
- F. The Director shall consider the following factors when deciding whether to classify a surface water as an OAW:
1. Whether there is the ability to manage the surface water and its watershed to maintain and protect existing water quality;
 2. The social and economic impact of Tier 3 antidegradation protection;
 3. The public comments in support of, or in opposition to, an OAW classification;
 4. The timing of the nomination relative to the triennial review of surface water quality standards;
 5. The consistency of an OAW classification with applicable water quality management plans; and
 6. Whether the nominated surface water is located within a national or state park, national monument, national recreation area, wilderness area, riparian conservation area, area of critical environmental concern, or it has another special use designation (for example, Wild and Scenic River).
- G. The following surface waters are classified as OAWs:
1. The West Fork of the Little Colorado River, from its headwaters at $33^{\circ}55'02''/109^{\circ}33'30''$ to Government Springs at $33^{\circ}59'33''/109^{\circ}27'54''$ (approximately 9.1 river miles);
 2. Oak Creek, from its headwaters at $35^{\circ}01'30''/111^{\circ}44'12''$ to its confluence with the Verde River at $34^{\circ}40'41''/111^{\circ}56'30''$ (approximately 50.3 river miles);
 3. West Fork of Oak Creek, from its headwaters at $35^{\circ}02'44''/111^{\circ}54'48''$ to its confluence with Oak Creek at $34^{\circ}59'14''/111^{\circ}44'46''$ (approximately 15.8 river miles);
 4. Peeples Canyon Creek, from its headwaters at $34^{\circ}23'57''/113^{\circ}19'45''$ to its confluence with the Santa Maria River at $34^{\circ}20'36''/113^{\circ}15'42''$ (approximately 8.1 river miles);
 5. Burro Creek, from its headwaters at $34^{\circ}52'46.5''/113^{\circ}05'13.5''$ to its confluence with Boulder Creek at $34^{\circ}37'4.5''/113^{\circ}18'36''$ (approximately 29.5 miles);
 6. Francis Creek, from its headwaters at $34^{\circ}54'38''/113^{\circ}20'30''$ to its confluence with Burro Creek at $34^{\circ}44'29''/113^{\circ}14'37''$ (approximately 22.9 river miles);
 7. Bonita Creek, from its boundary of the San Carlos Indian Reservation at $33^{\circ}03'08''/109^{\circ}33'41''$ to its confluence with the Gila River at $32^{\circ}53'36''/109^{\circ}28'43''$ (approximately 14.7 river miles);
 8. Cienega Creek, from its confluence with Gardner Canyon and Spring Water Canyon at $31^{\circ}47'38.5''/110^{\circ}35'21.5''$ to the USGS gaging station at $32^{\circ}02'09''/110^{\circ}40'34''$ (#09484600) (approximately 28.3 river miles);
 9. Aravaipa Creek, from its confluence with Stowe Gulch at $32^{\circ}52'10''/110^{\circ}22'03''$ to the downstream boundary of the Aravaipa Canyon Wilderness Area at $32^{\circ}54'23''/110^{\circ}33'42''$ (approximately 15.5 river miles);



10. Cave Creek, from its headwaters at 31°50'30"/109°17'04.5" to the Coronado National Forest boundary at 31°54'38"/109°08'40" (approximately 10.4 river miles);
11. South Fork of Cave Creek, from its headwaters at 31°50'20"/109°16'33" to its confluence with Cave Creek at 31°53'04"/109°10'30" (approximately 8.6 river miles);
12. Buehman Canyon Creek, from its headwaters at 32°52'0.5"/110°39'54.5" to its confluence with unnamed tributary at 32°24'31.5"/110°32'08" 32°24'31"/110°32'08" (approximately 9.8 river miles);
13. Lee Valley Creek, from its headwaters at 33°55'49"/109°31'34" to its confluence with Lee Valley Reservoir at 33°56'28"/109°30'15.5" (approximately 1.6 river miles);
14. Bear Wallow Creek, from its headwaters at 33°35'54"/109°26'54.5" to the boundary of the San Carlos Indian Reservation at 33°37'52"/109°29'44" (approximately 4.25 river miles);
15. North Fork of Bear Wallow Creek, from its headwaters at 33°34'47.5"/109°21'59.5" to its confluence with Bear Wallow Creek at 33°35'54"/109°26'54.5" (approximately 3.8 river miles);
16. South Fork of Bear Wallow Creek, from its headwaters at 33°34'38.5"/109°23'58" to its confluence with Bear Wallow Creek at 33°35'54"/109°26'54.5" (approximately 3.8 river miles);
17. Snake Creek, from its headwaters at 33°37'21.5"/109°26'11" to its confluence with the Black River at 33°40'31.5"/109°28'58.5" (approximately 6.2 river miles);
18. Hay Creek, from its headwaters at 33°51'00"/109°28'48" to its confluence with the West Fork of the Black River at 33°48'30"/109°25'49" (approximately 5.5 river miles);
19. Stinky Creek, from the White Mountain Apache Indian Reservation boundary at 33°52'36.5"/109°29'45" to its confluence with the West Fork of the Black River at 33°51'21.5"/109°27'09.5" (approximately 3.0 river miles);
20. KP Creek, from its headwaters at 33°34'03"/109°21'19" to its confluence with the Blue River at 33°31'44"/109°12'04.5" (approximately 12.7 river miles);
21. Davidson Canyon, from the unnamed spring at 31°59'00"/110°38'46" 31°59'00"/110°38'49" to its confluence with Cienega Creek; and
22. Fossil Creek, from its headwaters at the confluence of Sandrock and Calf Pen Canyons above Fossil Springs at 34°26'48.7"/111°32'25" to its confluence with the Verde River at 34°18'21.8"/111°40'31.6" (approximately 17.2 river miles).

R18-11-115. Site-Specific Standards

- A. The Director shall adopt a site-specific standard by rule.
- B. The Director may adopt a site-specific standard based upon a request or upon the Director’s initiative for any of the following reasons:
 1. Local physical, chemical, or hydrological conditions of a surface water such as pH, hardness, fate and transport, or temperature alters the biological availability or toxicity of a pollutant;
 2. The sensitivity of resident aquatic organisms that occur in a surface water to a pollutant differs from the sensitivity of the species used to derive the numeric water quality standards to protect aquatic life in Appendix A;
 3. Resident aquatic organisms that occur in a surface water represent a narrower mix of species than those in the dataset used by the Department to derive numeric water quality standards to protect aquatic life in Appendix A; ~~or~~
 4. The natural background concentration of a pollutant is greater than the numeric water quality standard to protect aquatic life prescribed in Appendix A. “Natural background” means the concentration of a pollutant in a surface water due only to non-anthropogenic sources.
 5. Natural adaptive processes have enabled a viable, balanced population of aquatic life to exist in a surface water where the level of a pollutant is greater than the numeric water quality standard to protect aquatic life prescribed in Appendix A; or
 6. Other factors or combination of factors that upon review by the Director warrant changing a numeric water quality standard for a surface water.
- C. Site specific study. A person shall conduct a study to support the development of a site specific standard using one of the following procedures:
 1. ~~The Recalculation Procedure, Appendix L, pages 90–98, Water Quality Standards Handbook, Second Edition, EPA 823-B-94-005b, August 1994. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. A copy of the incorporated material is available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or: may be obtained from the U.S. Environmental Protection Agency, Office of Water at <http://www.epa.gov/waterseience/standards/handbook/handbookappxL.pdf>.~~
 2. ~~Water Effects Ratio for Metals, Appendix L, pages 1–89, Water Quality Standards Handbook, Second Edition, EPA 823-B-94-005b, August 1994. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. A copy of the incorporated material is available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or: may be obtained from the U.S. Environmental Protection Agency, Office of Water at <http://www.epa.gov/waterseience/standards/handbook/handbookappxL.pdf>.~~
 3. ~~Streamlined Water Effects Ratio Procedure for Discharges of Copper, EPA 822-R-01-005, March 2001. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. A copy of the incorporated material is available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or: may be obtained from the U.S. Environmental Protection Agency, Office of Water at <http://www.epa.gov/ost/criteria/copper/copper.pdf>.~~
 4. Natural background:
 - a. A person seeking to develop a site specific standard based on natural background shall provide a study outline to the Director and obtain the Director’s approval before conducting the study:
 - i. The person may use statistical or modeling approaches to determine natural background concentration.



- ii. Modeling approaches include Better Assessment Science Integrating Source and Nonpoint Sources (Basins), Hydrologic Simulation Program Fortran (HSPF), and Hydrologic Engineering Center (HEC) programs developed by the U.S. Army Corps of Engineers;
- b. The Director may establish a site-specific standard at a concentration equal to the natural background concentration.
- e. For purposes of this subsection, “natural background” means the concentration of a pollutant in a surface water due only to non-anthropogenic sources.

Site-specific standard by request. To request that the Director adopt a site-specific standard, a person must conduct a study to support the development of a site-specific standard using a scientifically-defensible procedure.

1. Before conducting the study, a person shall submit a study outline to the Director for approval that contains the following elements:
 - a. Identifies the pollutant;
 - b. Describes the reach’s boundaries;
 - c. Uses one of the following procedures, as defined by the most recent EPA guidance documents:
 - i. The recalculation procedure;
 - ii. The water effects ratio for metals;
 - iii. The streamlined water effects ratio, or
 - iv. The Biotic ligand model.
 - d. Demonstrates that all designated uses are protected.
2. Alternatively, a study outline submitted for the Director’s approval must contain the following elements:
 - a. Identifies the pollutant;
 - b. Describes the reach’s boundaries;
 - c. Describes the hydrologic regime of the waterbody;
 - d. Describes the scientifically-defensible procedure, which can include relevant aquatic life studies, ecological studies, laboratory tests, biological translators, fate and transport models, and risk analyses;
 - e. Describes and compares the taxonomic composition, distribution and density of the aquatic biota within the reach to a reference reach and describes the basis of any major taxonomic differences;
 - f. Describes the pollutant’s effect on the affected species or appropriate surrogate species and on the other designated uses listed for the reach;
 - g. Demonstrates that all designated uses are protected; and
 - h. A person seeking to develop a site-specific standard based on natural background may use statistical or modeling approaches to determine natural background concentration. Modeling approaches include Better Assessment Science Integrating Source and Nonpoint Sources (Basins), Hydrologic Simulation Program-Fortran (HSPF), and Hydrologic Engineering Center (HEC) programs developed by the U.S. Army Corps of Engineers.

R18-11-121. Schedules of Compliance

- A.** ~~The Director may establish a schedule in an AZPDES permit to bring an existing point source into compliance with a new or revised water quality standard. A compliance schedule in an AZPDES permit for an existing point source, other than a stormwater discharge, shall require the permittee to comply with a discharge limitation based upon a new or revised water quality standard no later than three years after the effective date of the AZPDES permit as soon as possible to achieve compliance. The permittee shall demonstrate that all requirements under § 301(b) and § 306 of the Clean Water Act [33 U.S.C. 1311(b) and 1316] are achieved and that the point source cannot comply with a discharge limitation based upon the new or revised water quality standard through the application of existing water pollution control technology, operational changes, or source reduction. In establishing a compliance schedule, the Director shall consider:~~
1. How much time the permittee has already had to meet any effluent limitations under a prior permit;
 2. The extent to which the permittee has made good faith efforts to comply with the effluent limitations and other requirements in a prior permit;
 3. Whether treatment facilities, operations, or measures must be modified to meet the effluent limitations;
 4. How long any necessary modifications would take to implement; and
 5. Whether the permittee would be expected to use the same treatment facilities, operations or other measures to meet the effluent limitations as it would have used to meet the effluent limitations in a prior permit.
- B.** ~~The Director may establish a schedule of compliance in an AZPDES permit for a new point source. The first AZPDES permit issued to a new point source may contain a schedule of compliance only when necessary to allow the permittee to attain compliance with a new or revised water quality standard that becomes effective after commencement of construction but less than three years before the discharge begins. For purposes of this subsection, “commencement of construction” means that the owner or operator of the point source has obtained the federal, state, and local approvals or permits necessary to begin physical construction of the point source and either:~~
1. ~~Onsite physical construction has begun; or~~
 2. ~~The owner or operator has entered into a contract for physical construction of the point source and the contract cannot be cancelled or modified without substantial loss. For purposes of this subsection, “substantial loss” means in excess of 10 percent of the total cost incurred for physical construction.~~
- C.** ~~The Director may establish a schedule of compliance in an AZPDES permit for a recommencing point source discharge. The first AZPDES permit issued to a recommencing point source discharger may contain a schedule of compliance only when necessary to attain compliance with a new or revised water quality standard that is effective less than three years before recommencement of the discharge.~~
- D.** ~~The Director may establish a schedule to bring a point source discharge of stormwater into compliance with a water quality standard in an AZPDES permit. A compliance schedule for a stormwater discharge shall require implementation of all reasonable and cost-effective best management practices to control the discharge of pollutants in stormwater.~~



Appendix A.Numeric Water Quality Standards

Table 1. Water Quality Criteria By Designated Use (see f)

Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&W c Acute (µg/L)	A&Wc Chronic (µg/L)	A&W w Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wed w Acute (µg/L)	A&Wed w Chronic (µg/L)	A&W e Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Acenaphthene	83329	420	198	56,000	56,000	850	550	850	550	850	550			
Acrolein	107028	3.5	1.9	467	467	34	30	34	30	34	30			
Acrylonitrile	107131	0.06	0.2	3	37,333	3,800	250	3,800	250	3,800	250			
Alachlor	15972608	2		9,333	9,333	2,500	170	2,500	170	2,500	170			
Aldrin	309002	0.002	0.00005	0.08	28	3		3		3		4.5	0.003	See (b)
Alpha Particles (Gross) Radioactivity		15 pCi/L See (h)												
Ammonia	7664417					See (e) & Table 25 11	See (e) & Table 26 12	See (e) & Table 25 11	See (e) & Table 26 12	See (e) & Table 25 11	See (e) & Table 26 12			
Anthracene	120127	2,100	74	280,000	280,000									
Antimony	7440360	6 T	640 T	747 T	747 T	88 D	30 D	88 D	30 D	1,000 D	600 D			
Arsenic	7440382	10 T	80 T	30 T	280 T	340 D	150 D	340 D	150 D	340 D	150 D	440 D	2,000 T	200 T
Asbestos	1332214	See (a)												
Atrazine	1912249	3		32,667	32,667									
Barium	7440393	2,000 T		98,000 T	98,000 T									
Benz(a)anthracene	56553	0.005	0.02	0.2	0.2									
Benzene	71432	5	44 140	93	3,733	2,700	180	2,700	180	8,800	560			
3, 4 Benzfluoranthene	205992	0.005	0.02	1.9	1.9									
Benzidine	92875	0.0002	0.0002	0.01	2,800	1,300	89	1,300	89	1,300	89	10,000	0.01	0.01
Benzo(a)pyrene	50328	0.2	0.02	0.2	0.2									
Benzo(k)fluoranthene	207089	0.005	0.02	1.9	1.9									
Beryllium	7440417	4 T	84 T	1,867 T	1,867 T	65 D	5.3 D	65 D	5.3 D	65 D	5.3 D			
Beta particles and photon emitters		4 milli-rems / year See (i)												
Bis(2-chloroethyl) ether	111444	0.03	0.5	1	1	120,000	6,700	120,000	6,700	120,000	6,700			
Bis(2-chloroisopropyl) ether	108601	280	3,441	37,333	37,333									
Boron	7440428	1,400 T		186,667 T	186,667 T								1,000 T	
Bromodichloromethane	75274	TTHM See (g)	17	18,667 TTHM	18,667									
p-Bromodiphenyl ether	101553					180	14	180	14	180	14			
Bromoform	75252	TTHM See (g)	133	180	18,667	15,000	10,000	15,000	10,000	15,000	10,000			
Bromomethane	74839	9.8	299	1,307	1,307	5,500	360	5,500	360	5,500	360			
Butyl benzyl phthalate	85687	1,400	386	186,667	186,667	1,700	130	1,700	130	1,700	130			
Cadmium	7440439	5 T	84 T	700 T	700 T	See (d) & Table 2	See (d) & Table 3	See (d) & Table 4 2	See (d) & Table 5 2	See (d) & Table 4 2	See (d) & Table 5 2	See (d) & Table 6 2	50	50
Carbofuran	1563662	40		4,667	4,667	650	50	650	50	650	50			
Carbon tetrachloride	56235	5	2	11	1,307 980	18,000	1,100	18,000	1,100	18,000	1,100			
Chlordane	57749	2	0.0008	4	467	2.4	0.004	2.4	0.2	2.4	0.2	3.2		
Chlorine (total residual)	7782505	4,000		4,000	4,000	19	11	19	11	19	11			
Chlorobenzene	108907	100	1,553	18,667	18,667	3,800	260	3,800	260	3,800	260			
2-Chloroethyl vinyl ether	110758					180,000	9,800	180,000	9,800	180,000	9,800			
Chloroform	67663	TTHM See (g)	2,133 470	9,333 230	9,333	14,000	900	14,000	900	14,000	900			
p-Chloro-m-cresol	59507					15	4.7	15	4.7	15	4.7	48,000		
Chloromethane	74873					270,000	15,000	270,000	15,000	270,000	15,000			
2-Chloronaphthalene	91587	560	317	74,667	74,667									
2-Chlorophenol	95578	35	30	4,667	4,667	2,200	150	2,200	150	2,200	150			
Chloropyrifos	2921882	21		2,800	2,800	0.08	0.04	0.08	0.04	0.08	0.04			



Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&Wc Acute (µg/L)	A&Wc Chronic (µg/L)	A&Ww Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wedw Acute (µg/L)	A&Wedw Chronic (µg/L)	A&We Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Chromium III	16065831		75,000 T	1,400,000 T	1,400,000 T	See (d) & Table 7.4	See (d) & Table 8.4	See (d) & Table 7.4	See (d) & Table 8.4	See (d) & Table 7.4	See (d) & Table 8.4	See (d) & Table 9.4		
Chromium VI	18540299	21 T	150 T	2,800 T	2,800 T	16 D	11 D	16 D	11 D	16 D	11 D	34 D		
Chromium (Total)	7440473	100 T											1,000	1,000
Chrysene	218019	0.005	0.02	19	19									
Copper	7440508	1,300 T		1,300 T	1,300 T	See (d) & Table 10.5	See (d) & Table 11.5	See (d) & Table 10.5	See (d) & Table 11.5	See (d) & Table 10.5	See (d) & Table 11.5	See (d) & Table 12.5	5,000 T	500 T
Cyanide (as free cyanide)	57125	200 T	16,000 T	18,667 T	18,667 T	22 T	5.2 T	41 T	9.7 T	41 T	9.7 T	84 T		200 T
Dalapon	75990	200	8,000	28,000	28,000									
Dibenz (ah) anthracene	53703	0.005	0.02	1.9	1.9									
Dibromochloromethane	124481	TTHM See (g)	13	48,667 TTHM	18,667									
1,2-Dibromo-3-chloropropane	96128	0.2		2,800	2,800									
1,2-Dibromoethane	106934	0.05		8,400	8,400									
Dibutyl phthalate	84742	700	899	93,333	93,333	470	35	470	35	470	35	1,100		
1,2-Dichlorobenzene	95501	600	205	84,000	84,000	790	300	1,200	470	1,200	470	5,900		
1,3-Dichlorobenzene	541731					2,500	970	2,500	970	2,500	970			
1,4-Dichlorobenzene	106467	75	5,755	373,333	373,333	560	210	2,000	780	2,000	780	6,500		
3,3'-Dichlorobenzidine	91941	0.08	0.03	3	3									
p,p'-Dichlorodiphenyltrichloroethane (DDT) and metabolites (DDD) and (DDE)	50293	0.1	0.0002	4	467	1.1	0.001	1.1	0.001	1.1	0.001	1.1	0.001	0.001
1,2-Dichloroethane	107062	5	37	15	186,667	59,000	41,000	59,000	41,000	59,000	41,000			
1,1-Dichloroethylene	75354	7	7,143	46,667	46,667	15,000	950	15,000	950	15,000	950			
1,2-cis-Dichloroethylene	156592	70		70	70									
1,2-trans-Dichloroethylene	156605	100	10,127	18,667	18,667	68,000	3,900	68,000	3,900	68,000	3,900			
Dichloromethane	75092	5	593	190	56,000	97,000	5,500	97,000	5,500	97,000	5,500			
2,4-Dichlorophenol	120832	21	59	2,800	2,800	1,000	88	1,000	88	1,000	88			
2,4-Dichlorophenoxyacetic acid (2,4-D)	94757	70		9,333	9,333									
1,2-Dichloropropane	78875	5	17,518	84,000	84,000	26,000	9,200	26,000	9,200	26,000	9,200			
1,3-Dichloropropene	542756	0.7	42	420	28,000	3,000	1,100	3,000	1,100	3,000	1,100			
Dieldrin	60571	0.002	0.00005	0.09	47	0.2	0.06	0.2	0.06	0.2	0.06	4	0.003	See (b)
Diethyl phthalate	84662	5,600	8,767	746,667	746,667	26,000	1,600	26,000	1,600	26,000	1,600			
Di (2-ethylhexyl) adipate	103231	400		560,000	560,000									
Di (2-ethylhexyl) phthalate	117817	6	3	4,200 100	18,667	400	360	400	360	400	360	3,100		
2,4-Dimethylphenol	105679	140	171	18,667	18,667	1,000	310	1,000	310	1,000	310	150,000		
Dimethyl phthalate	131113					17,000	1,000	17,000	1,000	17,000	1,000			
4,6-Dinitro-o-cresol	534521	28	582	3,733	3,733	310	24	310	24	310	24			
2,4-Dinitrophenol	51285	14	1,067	1,867	1,867	110	9.2	110	9.2	110	9.2			
2,4-Dinitrotoluene	121142	14	421	1,867	1,867	14,000	860	14,000	860	14,000	860			
2,6-Dinitrotoluene	606202	0.05		2	3,733									
Di-n-octyl phthalate	117840	2,800		373,333	373,333									
Dinoseb	88857	7		933	933									
1,2-Diphenylhydrazine	122667	0.04	0.2	1.8	1.8	130	11	130	11	130	11			
Diquat	85007	20		2,053	2,053									
Endosulfan sulfate	1031078	42	18	5,600	5,600	0.2	0.06	0.2	0.06	0.2	0.06	3		
Endosulfan (Total)	115297	42	18	5,600	5,600	0.2	0.06	0.2	0.06	0.2	0.06	3		
Endothall	145733	100		18,667	18,667									
Endrin	72208	2	0.06	280	280	0.09	0.04	0.09	0.04	0.09	0.04	0.7	0.004	0.004
Endrin aldehyde	7421933					0.09	0.04	0.09	0.04	0.09	0.04	0.7		
Ethylbenzene	100414	700	2,133	93,333	93,333	23,000	1,400	23,000	1,400	23,000	1,400			
Fluoranthene	206440	280	28	37,333	37,333	2,000	1,600	2,000	1,600	2,000	1,600			



Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&W c Acute (µg/L)	A&Wc Chronic (µg/L)	A&W w Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wed w Acute (µg/L)	A&Wed w Chronic (µg/L)	A&W e Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Fluorene	86737	280	1,067	37,333	37,333									
Fluoride	7782414	4,000		140,000	140,000									
Glyphosate	1071836	700	266,667	93,333	93,333									
Guthion	86500						0.01		0.01		0.01			
Heptachlor	76448	0.4	0.0008	0.4	467	0.5	0.004	0.5	0.004	0.6	0.01	0.9		
Heptachlor epoxide	1024573	0.2	0.0004	0.2	12	0.5	0.004	0.5	0.004	0.6	0.01	0.9		
Hexachlorobenzene	118741	1	0.0003	1	747	6	3.7	6	3.7	6	3.7			
Hexachlorobutadiene	87683	0.4	18	18	187	45	8.2	45	8.2	45	8.2			
Hexachlorocyclohexane alpha	319846	0.006	0.005	0.22	7,467	1,600	130	1,600	130	1,600	130	1,600		
Hexachlorocyclohexane beta	319857	0.02	0.02	0.78	560	1,600	130	1,600	130	1,600	130	1,600		
Hexachlorocyclohexane delta	319868					1,600	130	1,600	130	1,600	130	1,600		
Hexachlorocyclohexane gamma (lindane)	58899	0.2	1.8	280	280	1	0.08	1	0.28	1	0.61	11		
Hexachlorocyclopentadiene	77474	50	74 580	11,200 9,800	11,200 9,800	3.5	0.3	3.5	0.3	3.5	0.3			
Hexachloroethane	67721	2.5	3.3	100	933	490	350	490	350	490	350	850		
Hydrogen sulfide	7783064						2 See (c)		2 See (c)		2 See (c)			
Indeno (1,2,3-cd) pyrene	193395	0.05	0.2 0.49	1.9	1.9									
Iron	7439896						1,000 D		1,000 D		1,000 D			
Isophorone	78591	37	961	1,500	186,667	59,000	43,000	59,000	43,000	59,000	43,000			
Lead	7439971	15 T		15 T	15 T	See (d) & Table 13 6	See (d) & Table 14 6	See (d) & Table 13 6	See (d) & Table 14 6	See (d) & Table 13 6	See (d) & Table 14 6	See (d) & Table 15 6	10,000 T	100 T
Malathion	121755	140		18,667	18,667		0.1		0.1		0.1			
Manganese	7439965	980		130,667	130,667								10,000	
Mercury	7439976	2 T		280 T	280 T	2.4 D	0.01 D	2.4 D	0.01 D	2.4 D	0.01 D	5 D		10 T
Methoxychlor	72435	40		4,667	4,667		0.03		0.03		0.03			
Methylmercury			0.3 mg/kg											
Mirex	2385855	1		187	187		0.001		0.001		0.001			
Naphthalene	91203	140	1,524	18,667	18,667	1,100	210	3,200	580	3,200	580			
Nickel	7440020	210 T 140 T	511 T 4,600 T	28,000 T	28,000 T	See (d) & Table 16 7	See (d) & Table 17 7	See (d) & Table 16 7	See (d) & Table 17 7	See (d) & Table 16 7	See (d) & Table 17 7	See (d) & Table 18 7		
Nitrate	14797558	10,000		3,733,333	3,733,333									
Nitrite	14797650	1,000		233,333	233,333									
Nitrate + Nitrite		10,000												
Nitrobenzene	98953	3.5	138	467	467	1,300	850	1,300	850	1,300	850			
p-Nitrophenol	100027					4,100	3,000	4,100	3,000	4,100	3,000			
N-nitrosodimethylamine	62759	0.001	3	0.03	0.03									
N-nitrosodi-n-phenylamine	86306	7.1	6	290	290	2,900	200	2,900	200	2,900	200			
N-nitrosodi-n-propylamine	621647	0.005	0.5	0.2	88,667									
Oxamyl	23135220	200		23,333	23,333									
Parathion	56382					0.07	0.01	0.07	0.01	0.07	0.01			
Paraquat	1910425	32		4,200	4,200	100	54	100	54	100	54			
Pentachlorophenol	87865	1	370 1,000	12	28,000	See (e), (i) & Table 22 10	See (e), (i) & Table 23 10	See (e), (i) & Table 22 10	See (e), (i) & Table 23 10	See (e), (i) & Table 22 10	See (e), (i) & Table 23 10	See (e), (i) & Table 24 10		



Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&Wc Acute (µg/L)	A&Wc Chronic (µg/L)	A&Ww Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wedw Acute (µg/L)	A&Wedw Chronic (µg/L)	A&We Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Permethrin	52645531	350		46,667	46,667	0.3	0.2	0.3	0.2	0.3	0.2			
Phenanthrene	85018					30	6.3	30	6.3	30	6.3			
Phenol	108952	2,100	37	280,000	280,000	5,100	730	7,000	1,000	7,000	1,000	180,000		
Picloram	1918021	500	2,710	65,333	65,333									
Polychlorinated biphenyls (PCBs)	1336363	0.5	0.00006	19	19	2	0.01	2	0.02	2	0.02	11	0.001	0.001
Pyrene	129000	210	800	28,000	28,000									
Radium 226 + Radium 228		5 pCi/L												
Selenium	7782492	50 T	667 T	4,667 T	4,667 T		2 T		2 T		2 T	33 T	20 T	50 T
Silver	7440224	35 T	8,000 T	4,667 T	4,667 T	See (d) & Table 49 g		See (d) & Table 49 g		See (d) & Table 49 g		See (d) & Table 49 g		
Simazine	112349	4		4,667	4,667									
Strontium		8 pCi/L												
Styrene	100425	100		186,667	186,667	5,600	370	5,600	370	5,600	370			
Sulfides												100		
2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	1746016	0.00003	5x10-9	0.00003	0.0009	0.01	0.005	0.01	0.005	0.01	0.005	0.1		
1,1,2,2-Tetrachloroethane	79345	0.2	4	7	93,333 56,000	4,700	3,200	4,700	3,200	4,700	3,200			
Tetrachloroethylene	127184	5	261	9,333	9,333	2,600	280	6,500	680	6,500	680	15,000		
Thallium	7440280	2 T	4 T 7.2 T	75 T	75 T	700 D	150 D	700 D	150 D	700 D	150 D			
Toluene	108883	1,000	29,907 201.00 0	373,333 280,000	373,333 280,000	8,700	180	8,700	180	8,700	180			
Toxaphene	8001352	3	0.0003	1.3	933	0.7	0.0002	0.7	0.0002	0.7	0.0002	11	0.005	0.005
Tributyltin						0.5	0.07	0.5	0.07	0.5	0.07			
1,2,4-Trichlorobenzene	120821	70	70	9,333	9,333	750	130	1,700	300	1,700	300			
1,1,1-Trichloroethane	71556	200	428,571	1,866,667	1,866,667	2,600	1,600	2,600	1,600	2,600	1,600		1,000	
1,1,2-Trichloroethane	79005	5	16	25	3,733	18,000	12,000	18,000	12,000	18,000	12,000			
Trichloroethylene	79016	5	29	280,000	280	20,000	1,300	20,000	1,300	20,000	1,300			
2,4,6-Trichlorophenol	88062	3.2	2	130	130	160	25	160	25	160	25	3,000		
2,4,5-Trichlorophenoxy propionic acid (2,4,5-TP)	93721	50		7,467	7,467									
Trihalomethanes (T)		80												
Tritium		20,000 pCi/L												
Uranium	7440611	30 D		2,800	2,800									
Vinyl chloride	75014	2	5	2	2,800									
Xylenes (T)	1330207	10,000		186,667	186,667									
Zinc	7440666	2,100 T	5,106 T	280,000 T	280,000 T	See (d) & Table 20 g	See (d) & Table 20 g	10,000 T	25,000 T					

Footnotes

- a. The asbestos standard is 7 million fibers (longer than 10 micrometers) per liter.
- b. The aldrin/dieldrin standard is exceeded when the sum of the two compounds exceeds 0.003 µg/L.
- c. In lakes, the acute criteria for hydrogen sulfide apply only to water samples taken from the epilimnion, or the upper layer of a lake or reservoir.
- d. Hardness, expressed as mg/L CaCO₃, is determined according to the following criteria:
 - i. If the receiving water body has an A&Wc or A&Ww designated use, then hardness is based on the hardness of the receiving water body from a sample taken at the same time that the sample for the metal is taken, except that the hardness may not exceed 400 mg/L CaCO₃.
 - ii. If the receiving water has an A&Wedw or A&We designated use, then the hardness is based on the hardness of the effluent from a sample taken at the same time that the sample for the metal is taken, except that the hardness may not exceed 400 mg/L CaCO₃.
 - iii. The mathematical equations for the hardness-dependent parameter represent the water quality standards. Examples of criteria for the hardness-dependent parameters have been calculated and are presented in separate tables at the end of Appendix A for the convenience of the user.
- e. pH is determined according to the following criteria:



- i. If the receiving water has an A&Wc or A&Ww designated use, then pH is based on the pH of the receiving water body from a sample taken at the same time that the sample for pentachlorophenol or ammonia is taken.
- ii. If the receiving water body has an A&Wedw or A&We designated use, then the pH is based on the pH of the effluent from a sample taken at the same time that the sample for pentachlorophenol or ammonia is taken.
- iii. The mathematical equations for ammonia represent the water quality standards. Examples of criteria for ammonia have been calculated and are presented in separate tables at the end of Appendix A for the convenience of the user.
- f. Table 1 abbreviations.
 - i. µg/L = micrograms per liter,
 - ii. mg/kg = milligrams per kilogram,
 - iii. pCi/L = picocuries per liter,
 - iv. D = dissolved,
 - v. T = total recoverable,
 - vi. TTHM indicates that the chemical is a trihalomethane.
- g. The total trihalomethane (TTHM) standard is exceeded when the sum of these four compounds exceeds 80 µg/L, as a rolling annual average.
- h. The concentration of gross alpha particle activity includes radium-226, but excludes radon and uranium.
- i. The average annual concentration of beta particle activity and photon emitters from manmade radionuclides shall not produce an annual dose equivalent to the total body or any internal organ greater than four millirems per year.
- j. The mathematical equations for the pH-dependent parameters represent the water quality standards. Examples of criteria for the pH-dependent parameters have been calculated and are presented in separate tables at the end of Appendix A for the convenience of the user.
- k. Abbreviations for the mathematical equations are as follows:
 e = the base of the natural logarithm and is a mathematical constant equal to 2.71828
 LN = is the natural logarithm
 CMC = Criterion Maximum Concentration (acute)
 CCC = Criterion Continuous Concentration (chronic)

Table 2. Acute Water Quality Standards for Dissolved Cadmium Aquatic and Wildlife coldwater

Hard: mg/L	Std: µg/L																		
1	0.02	41	0.85	81	1.64	121	2.42	161	3.20	201	3.97	241	4.73	281	5.49	321	6.25	361	7.00
2	0.04	42	0.87	82	1.66	122	2.44	162	3.22	202	3.99	242	4.75	282	5.51	322	6.27	362	7.02
3	0.07	43	0.89	83	1.68	123	2.46	163	3.24	203	4.01	243	4.77	283	5.53	323	6.29	363	7.04
4	0.09	44	0.91	84	1.70	124	2.48	164	3.26	204	4.03	244	4.79	284	5.55	324	6.31	364	7.06
5	0.11	45	0.93	85	1.72	125	2.50	165	3.28	205	4.04	245	4.81	285	5.57	325	6.33	365	7.08
6	0.13	46	0.95	86	1.74	126	2.52	166	3.30	206	4.06	246	4.83	286	5.59	326	6.34	366	7.10
7	0.15	47	0.97	87	1.76	127	2.54	167	3.31	207	4.08	247	4.85	287	5.61	327	6.36	367	7.12
8	0.17	48	0.99	88	1.78	128	2.56	168	3.33	208	4.10	248	4.87	288	5.63	328	6.38	368	7.14
9	0.19	49	1.01	89	1.80	129	2.58	169	3.35	209	4.12	249	4.88	289	5.64	329	6.40	369	7.15
10	0.21	50	1.03	90	1.82	130	2.60	170	3.37	210	4.14	250	4.90	290	5.66	330	6.42	370	7.17
11	0.23	51	1.05	91	1.84	131	2.62	171	3.39	211	4.16	251	4.92	291	5.68	331	6.44	371	7.19
12	0.26	52	1.07	92	1.86	132	2.64	172	3.41	212	4.18	252	4.94	292	5.70	332	6.46	372	7.21
13	0.28	53	1.09	93	1.88	133	2.66	173	3.43	213	4.20	253	4.96	293	5.72	333	6.48	373	7.23
14	0.30	54	1.11	94	1.90	134	2.68	174	3.45	214	4.22	254	4.98	294	5.74	334	6.50	374	7.25
15	0.32	55	1.13	95	1.92	135	2.70	175	3.47	215	4.24	255	5.00	295	5.76	335	6.51	375	7.27
16	0.34	56	1.15	96	1.94	136	2.72	176	3.49	216	4.26	256	5.02	296	5.78	336	6.53	376	7.29
17	0.36	57	1.17	97	1.95	137	2.73	177	3.51	217	4.27	257	5.04	297	5.80	337	6.55	377	7.30
18	0.38	58	1.19	98	1.97	138	2.75	178	3.53	218	4.29	258	5.06	298	5.81	338	6.57	378	7.32
19	0.40	59	1.21	99	1.99	139	2.77	179	3.55	219	4.31	259	5.08	299	5.83	339	6.59	379	7.34
20	0.42	60	1.23	100	2.01	140	2.79	180	3.56	220	4.33	260	5.09	300	5.85	340	6.61	380	7.36
21	0.44	61	1.25	101	2.03	141	2.81	181	3.58	221	4.35	261	5.11	301	5.87	341	6.63	381	7.38
22	0.46	62	1.26	102	2.05	142	2.83	182	3.60	222	4.37	262	5.13	302	5.89	342	6.65	382	7.40
23	0.48	63	1.28	103	2.07	143	2.85	183	3.62	223	4.39	263	5.15	303	5.91	343	6.66	383	7.42
24	0.50	64	1.30	104	2.09	144	2.87	184	3.64	224	4.41	264	5.17	304	5.93	344	6.68	384	7.44
25	0.52	65	1.32	105	2.11	145	2.89	185	3.66	225	4.43	265	5.19	305	5.95	345	6.70	385	7.45
26	0.54	66	1.34	106	2.13	146	2.91	186	3.68	226	4.45	266	5.21	306	5.97	346	6.72	386	7.47
27	0.56	67	1.36	107	2.15	147	2.93	187	3.70	227	4.47	267	5.23	307	5.99	347	6.74	387	7.49
28	0.58	68	1.38	108	2.17	148	2.95	188	3.72	228	4.48	268	5.25	308	6.00	348	6.76	388	7.51
29	0.60	69	1.40	109	2.19	149	2.97	189	3.74	229	4.50	269	5.27	309	6.02	349	6.78	389	7.53
30	0.62	70	1.42	110	2.21	150	2.99	190	3.76	230	4.52	270	5.28	310	6.04	350	6.80	390	7.55

31	0.64	71	1.44	111	2.23	151	3.01	191	3.78	231	4.54	271	5.30	311	6.06	351	6.82	391	7.57
32	0.66	72	1.46	112	2.25	152	3.03	192	3.80	232	4.56	272	5.32	312	6.08	352	6.83	392	7.59
33	0.68	73	1.48	113	2.27	153	3.04	193	3.81	233	4.58	273	5.34	313	6.10	353	6.85	393	7.60
34	0.70	74	1.50	114	2.29	154	3.06	194	3.83	234	4.60	274	5.36	314	6.12	354	6.87	394	7.62
35	0.72	75	1.52	115	2.31	155	3.08	195	3.85	235	4.62	275	5.38	315	6.14	355	6.89	395	7.64
36	0.75	76	1.54	116	2.33	156	3.10	196	3.87	236	4.64	276	5.40	316	6.16	356	6.91	396	7.66
37	0.77	77	1.56	117	2.35	157	3.12	197	3.89	237	4.66	277	5.42	317	6.17	357	6.93	397	7.68
38	0.79	78	1.58	118	2.37	158	3.14	198	3.91	238	4.68	278	5.44	318	6.19	358	6.95	398	7.70
39	0.81	79	1.60	119	2.38	159	3.16	199	3.93	239	4.69	279	5.45	319	6.21	359	6.97	399	7.72
40	0.83	80	1.62	120	2.40	160	3.18	200	3.95	240	4.71	280	5.47	320	6.23	360	6.98	400	7.74

Table 2. Acute Water Quality Standards for Dissolved Cadmium

<u>Aquatic and Wildlife coldwater</u>		<u>Aquatic and Wildlife warmwater, and edw</u>		<u>Aquatic and Wildlife ephemeral</u>	
<u>Hard. mg/L</u>	<u>Std. µg/L</u>	<u>Hard. mg/L</u>	<u>Std. µg/L</u>	<u>Hard. mg/L</u>	<u>Std. µg/L</u>
20	0.42	20	0.74	20	11.3
100	2.0	100	4.3	100	64.6
400	7.7	400	19.1	400	290
$e^{((1.0166 * LN(Hardness) - 3.924)) * (1.136672 - LN(Hardness)) * 0.041838)}$		$e^{((1.128 * LN(Hardness) - 3.6867) * (1.136672 - LN(Hardness)) * 0.041838)}$		$e^{((1.128 * LN(Hardness) - 0.9691) * (1.136672 - LN(Hardness)) * 0.041838)}$	

Table 3. Chronic Water Quality Standards for Dissolved Cadmium Aquatic and Wildlife coldwater

Hard mg/L	Std. µg/L																		
1	0.01	41	0.13	81	0.21	121	0.28	161	0.34	201	0.40	241	0.45	281	0.50	321	0.55	361	0.60
2	0.02	42	0.13	82	0.21	122	0.28	162	0.34	202	0.40	242	0.45	282	0.50	322	0.55	362	0.60
3	0.02	43	0.14	83	0.22	123	0.28	163	0.35	203	0.40	243	0.46	283	0.51	323	0.55	363	0.60
4	0.03	44	0.14	84	0.22	124	0.29	164	0.35	204	0.40	244	0.46	284	0.51	324	0.56	364	0.60
5	0.03	45	0.14	85	0.22	125	0.29	165	0.35	205	0.40	245	0.46	285	0.51	325	0.56	365	0.60
6	0.03	46	0.14	86	0.22	126	0.29	166	0.35	206	0.41	246	0.46	286	0.51	326	0.56	366	0.60
7	0.04	47	0.15	87	0.22	127	0.29	167	0.35	207	0.41	247	0.46	287	0.51	327	0.56	367	0.61
8	0.04	48	0.15	88	0.23	128	0.29	168	0.35	208	0.41	248	0.46	288	0.51	328	0.56	368	0.61
9	0.05	49	0.15	89	0.23	129	0.29	169	0.35	209	0.41	249	0.46	289	0.51	329	0.56	369	0.61
10	0.05	50	0.15	90	0.23	130	0.30	170	0.36	210	0.41	250	0.46	290	0.51	330	0.56	370	0.61
11	0.05	51	0.15	91	0.23	131	0.30	171	0.36	211	0.41	251	0.47	291	0.52	331	0.56	371	0.61
12	0.06	52	0.16	92	0.23	132	0.30	172	0.36	212	0.41	252	0.47	292	0.52	332	0.57	372	0.61
13	0.06	53	0.16	93	0.23	133	0.30	173	0.36	213	0.42	253	0.47	293	0.52	333	0.57	373	0.61
14	0.06	54	0.16	94	0.24	134	0.30	174	0.36	214	0.42	254	0.47	294	0.52	334	0.57	374	0.61
15	0.07	55	0.16	95	0.24	135	0.30	175	0.36	215	0.42	255	0.47	295	0.52	335	0.57	375	0.62
16	0.07	56	0.16	96	0.24	136	0.30	176	0.36	216	0.42	256	0.47	296	0.52	336	0.57	376	0.62
17	0.07	57	0.17	97	0.24	137	0.31	177	0.37	217	0.42	257	0.47	297	0.52	337	0.57	377	0.62
18	0.07	58	0.17	98	0.24	138	0.31	178	0.37	218	0.42	258	0.47	298	0.52	338	0.57	378	0.62
19	0.08	59	0.17	99	0.24	139	0.31	179	0.37	219	0.42	259	0.48	299	0.53	339	0.57	379	0.62
20	0.08	60	0.17	100	0.25	140	0.31	180	0.37	220	0.43	260	0.48	300	0.53	340	0.57	380	0.62
21	0.08	61	0.17	101	0.25	141	0.31	181	0.37	221	0.43	261	0.48	301	0.53	341	0.58	381	0.62
22	0.09	62	0.18	102	0.25	142	0.31	182	0.37	222	0.43	262	0.48	302	0.53	342	0.58	382	0.62
23	0.09	63	0.18	103	0.25	143	0.32	183	0.37	223	0.43	263	0.48	303	0.53	343	0.58	383	0.62
24	0.09	64	0.18	104	0.25	144	0.32	184	0.38	224	0.43	264	0.48	304	0.53	344	0.58	384	0.63



25	0.09	65	0.18	105	0.25	145	0.32	185	0.38	225	0.43	265	0.48	305	0.53	345	0.58	385	0.63
26	0.10	66	0.18	106	0.26	146	0.32	186	0.38	226	0.43	266	0.48	306	0.53	346	0.58	386	0.63
27	0.10	67	0.19	107	0.26	147	0.32	187	0.38	227	0.43	267	0.49	307	0.54	347	0.58	387	0.63
28	0.10	68	0.19	108	0.26	148	0.32	188	0.38	228	0.44	268	0.49	308	0.54	348	0.58	388	0.63
29	0.10	69	0.19	109	0.26	149	0.32	189	0.38	229	0.44	269	0.49	309	0.54	349	0.59	389	0.63
30	0.11	70	0.19	110	0.26	150	0.33	190	0.38	230	0.44	270	0.49	310	0.54	350	0.59	390	0.63
31	0.11	71	0.19	111	0.26	151	0.33	191	0.39	231	0.44	271	0.49	311	0.54	351	0.59	391	0.63
32	0.11	72	0.20	112	0.27	152	0.33	192	0.39	232	0.44	272	0.49	312	0.54	352	0.59	392	0.63
33	0.11	73	0.20	113	0.27	153	0.33	193	0.39	233	0.44	273	0.49	313	0.54	353	0.59	393	0.64
34	0.12	74	0.20	114	0.27	154	0.33	194	0.39	234	0.44	274	0.50	314	0.54	354	0.59	394	0.64
35	0.12	75	0.20	115	0.27	155	0.33	195	0.39	235	0.45	275	0.50	315	0.55	355	0.59	395	0.64
36	0.12	76	0.20	116	0.27	156	0.33	196	0.39	236	0.45	276	0.50	316	0.55	356	0.59	396	0.64
37	0.12	77	0.21	117	0.27	157	0.34	197	0.39	237	0.45	277	0.50	317	0.55	357	0.59	397	0.64
38	0.13	78	0.21	118	0.28	158	0.34	198	0.40	238	0.45	278	0.50	318	0.55	358	0.60	398	0.64
39	0.13	79	0.21	119	0.28	159	0.34	199	0.40	239	0.45	279	0.50	319	0.55	359	0.60	399	0.64
40	0.13	80	0.21	120	0.28	160	0.34	200	0.40	240	0.45	280	0.50	320	0.55	360	0.60	400	0.64

Table 3. Chronic Water Quality Standards for Dissolved Cadmium

<u>Aquatic and Wildlife coldwater</u>		<u>Aquatic and Wildlife warmwater, and edw</u>	
<u>Hard. mg/L</u>	<u>Std. ug/L</u>	<u>Hard. mg/L</u>	<u>Std. ug/L</u>
20	0.08	20	0.68
100	0.25	100	2.2
400	0.64	400	6.2
$e^{(0.7409*LN(Hardness)-4.719)}*(1.101672-LN(Hardness))*0.041838$		$e^{(0.7852*LN(Hardness)-2.715)}*(1.101672-LN(Hardness))*0.041838$	

Table 4. Acute Water Quality Standards for Dissolved Cadmium Aquatic and Wildlife warmwater, and edw

Hard mg/L	Std. ug/L																		
1	0.09	41	3.30	81	6.41	121	9.47	161	12.50	201	15.51	241	18.49	281	21.47	321	24.42	361	27.37
2	0.17	42	3.38	82	6.49	122	9.55	162	12.58	202	15.58	242	18.57	282	21.54	322	24.50	362	27.44
3	0.26	43	3.46	83	6.57	123	9.62	163	12.65	203	15.66	243	18.64	283	21.61	323	24.57	363	27.52
4	0.34	44	3.54	84	6.64	124	9.70	164	12.73	204	15.73	244	18.72	284	21.69	324	24.64	364	27.59
5	0.42	45	3.62	85	6.72	125	9.78	165	12.80	205	15.81	245	18.79	285	21.76	325	24.72	365	27.66
6	0.51	46	3.70	86	6.80	126	9.85	166	12.88	206	15.88	246	18.87	286	21.84	326	24.79	366	27.74
7	0.59	47	3.77	87	6.87	127	9.93	167	12.95	207	15.96	247	18.94	287	21.91	327	24.87	367	27.81
8	0.67	48	3.85	88	6.95	128	10.00	168	13.03	208	16.03	248	19.02	288	21.98	328	24.94	368	27.88
9	0.75	49	3.93	89	7.03	129	10.08	169	13.10	209	16.11	249	19.09	289	22.06	329	25.01	369	27.96
10	0.83	50	4.01	90	7.10	130	10.16	170	13.18	210	16.18	250	19.16	290	22.13	330	25.09	370	28.03
11	0.92	51	4.09	91	7.18	131	10.23	171	13.25	211	16.26	251	19.24	291	22.21	331	25.16	371	28.10
12	1.00	52	4.17	92	7.26	132	10.31	172	13.33	212	16.33	252	19.31	292	22.28	332	25.23	372	28.18
13	1.08	53	4.24	93	7.33	133	10.38	173	13.40	213	16.40	253	19.39	293	22.35	333	25.31	373	28.25
14	1.16	54	4.32	94	7.41	134	10.46	174	13.48	214	16.48	254	19.46	294	22.43	334	25.38	374	28.32
15	1.24	55	4.40	95	7.49	135	10.53	175	13.56	215	16.55	255	19.54	295	22.50	335	25.46	375	28.40
16	1.32	56	4.48	96	7.56	136	10.61	176	13.63	216	16.63	256	19.61	296	22.58	336	25.53	376	28.47
17	1.40	57	4.55	97	7.64	137	10.69	177	13.71	217	16.70	257	19.68	297	22.65	337	25.60	377	28.54



12	0.13	52	0.36	92	0.53	132	0.68	172	0.82	212	0.95	252	1.07	292	1.18	332	1.29	372	1.40
13	0.14	53	0.36	93	0.53	133	0.68	173	0.82	213	0.95	253	1.07	293	1.18	333	1.29	373	1.40
14	0.14	54	0.37	94	0.54	134	0.69	174	0.82	214	0.95	254	1.07	294	1.19	334	1.30	374	1.40
15	0.15	55	0.37	95	0.54	135	0.69	175	0.83	215	0.95	255	1.07	295	1.19	335	1.30	375	1.40
16	0.16	56	0.38	96	0.55	136	0.69	176	0.83	216	0.96	256	1.08	296	1.19	336	1.30	376	1.41
17	0.16	57	0.38	97	0.55	137	0.70	177	0.83	217	0.96	257	1.08	297	1.19	337	1.30	377	1.41
18	0.17	58	0.38	98	0.55	138	0.70	178	0.84	218	0.96	258	1.08	298	1.20	338	1.31	378	1.41
19	0.18	59	0.39	99	0.56	139	0.71	179	0.84	219	0.97	259	1.09	299	1.20	339	1.31	379	1.41
20	0.18	60	0.39	100	0.56	140	0.71	180	0.84	220	0.97	260	1.09	300	1.20	340	1.31	380	1.42
21	0.19	61	0.40	101	0.57	141	0.71	181	0.85	221	0.97	261	1.09	301	1.21	341	1.31	381	1.42
22	0.20	62	0.40	102	0.57	142	0.72	182	0.85	222	0.98	262	1.10	302	1.21	342	1.32	382	1.42
23	0.20	63	0.41	103	0.57	143	0.72	183	0.85	223	0.98	263	1.10	303	1.21	343	1.32	383	1.42
24	0.21	64	0.41	104	0.58	144	0.72	184	0.86	224	0.98	264	1.10	304	1.21	344	1.32	384	1.43
25	0.21	65	0.42	105	0.58	145	0.73	185	0.86	225	0.99	265	1.10	305	1.22	345	1.32	385	1.43
26	0.22	66	0.42	106	0.58	146	0.73	186	0.86	226	0.99	266	1.11	306	1.22	346	1.33	386	1.43
27	0.23	67	0.42	107	0.59	147	0.73	187	0.87	227	0.99	267	1.11	307	1.22	347	1.33	387	1.43
28	0.23	68	0.43	108	0.59	148	0.74	188	0.87	228	0.99	268	1.11	308	1.22	348	1.33	388	1.44
29	0.24	69	0.43	109	0.60	149	0.74	189	0.87	229	1.00	269	1.12	309	1.23	349	1.34	389	1.44
30	0.24	70	0.44	110	0.60	150	0.74	190	0.88	230	1.00	270	1.12	310	1.23	350	1.34	390	1.44
31	0.25	71	0.44	111	0.60	151	0.75	191	0.88	231	1.00	271	1.12	311	1.23	351	1.34	391	1.44
32	0.25	72	0.45	112	0.61	152	0.75	192	0.88	232	1.01	272	1.12	312	1.24	352	1.34	392	1.45
33	0.26	73	0.45	113	0.61	153	0.75	193	0.89	233	1.01	273	1.13	313	1.24	353	1.35	393	1.45
34	0.26	74	0.46	114	0.61	154	0.76	194	0.89	234	1.01	274	1.13	314	1.24	354	1.35	394	1.45
35	0.27	75	0.46	115	0.62	155	0.76	195	0.89	235	1.02	275	1.13	315	1.24	355	1.35	395	1.46
36	0.28	76	0.46	116	0.62	156	0.76	196	0.90	236	1.02	276	1.14	316	1.25	356	1.35	396	1.46
37	0.28	77	0.47	117	0.63	157	0.77	197	0.90	237	1.02	277	1.14	317	1.25	357	1.36	397	1.46
38	0.29	78	0.47	118	0.63	158	0.77	198	0.90	238	1.02	278	1.14	318	1.25	358	1.36	398	1.46
39	0.29	79	0.48	119	0.63	159	0.77	199	0.91	239	1.03	279	1.14	319	1.26	359	1.36	399	1.47
40	0.30	80	0.48	120	0.64	160	0.78	200	0.91	240	1.03	280	1.15	320	1.26	360	1.36	400	1.47

Table 5. Water Quality Standards for Dissolved Copper

<u>Acute Aquatic and Wildlife coldwater, warmwater and edw</u>		<u>Chronic Aquatic and Wildlife coldwater, warmwater and edw</u>		<u>Acute Aquatic and Wildlife ephemeral</u>	
<u>Hard. mg/L</u>	<u>Std. ug/L</u>	<u>Hard. mg/L</u>	<u>Std. ug/L</u>	<u>Hard. mg/L</u>	<u>Std. ug/L</u>
20	2.9	20	2.3	20	5.1
100	13.4	100	9.0	100	23.3
400	49.6	400	29.3	400	85.9
$e^{(0.9422*LN(Hardness)-1.702)}*(0.96)$		$e^{(0.8545*LN(Hardness)-1.702)}*(0.96)$		$e^{(0.9422*LN(Hardness)-1.1514)}*(0.96)$	

Table 6. Acute Water Quality Standards for Dissolved Cadmium Aquatic and Wildlife ephemeral

Hard mg/L	Std. ug/L																		
1	0.25	41	9.58	81	18.58	121	27.45	161	36.23	201	44.94	241	53.59	281	62.21	321	70.78	361	79.32
2	0.50	42	9.80	82	18.80	122	27.67	162	36.45	202	45.15	242	53.81	282	62.42	322	70.99	362	79.53
3	0.75	43	10.03	83	19.03	123	27.89	163	36.66	203	45.37	243	54.03	283	62.64	323	71.21	363	79.74
4	0.99	44	10.26	84	19.25	124	28.11	164	36.88	204	45.59	244	54.24	284	62.85	324	71.42	364	79.95
5	1.23	45	10.49	85	19.47	125	28.33	165	37.10	205	45.81	245	54.46	285	63.06	325	71.63	365	80.17

6	1.47	46	10.71	86	19.69	126	28.55	166	37.32	206	46.02	246	54.67	286	63.28	326	71.85	366	80.38
7	1.71	47	10.94	87	19.92	127	28.77	167	37.54	207	46.24	247	54.89	287	63.49	327	72.06	367	80.59
8	1.95	48	11.17	88	20.14	128	28.99	168	37.76	208	46.46	248	55.10	288	63.71	328	72.27	368	80.81
9	2.18	49	11.39	89	20.36	129	29.21	169	37.97	209	46.67	249	55.32	289	63.92	329	72.49	369	81.02
10	2.42	50	11.62	90	20.58	130	29.43	170	38.19	210	46.89	250	55.54	290	64.14	330	72.70	370	81.23
11	2.65	51	11.84	91	20.81	131	29.65	171	38.41	211	47.11	251	55.75	291	64.35	331	72.92	371	81.44
12	2.89	52	12.07	92	21.03	132	29.87	172	38.63	212	47.32	252	55.97	292	64.57	332	73.13	372	81.66
13	3.13	53	12.30	93	21.25	133	30.09	173	38.85	213	47.54	253	56.18	293	64.78	333	73.34	373	81.87
14	3.36	54	12.52	94	21.47	134	30.31	174	39.06	214	47.76	254	56.40	294	65.00	334	73.56	374	82.08
15	3.59	55	12.75	95	21.70	135	30.53	175	39.28	215	47.97	255	56.61	295	65.21	335	73.77	375	82.30
16	3.83	56	12.97	96	21.92	136	30.75	176	39.50	216	48.19	256	56.83	296	65.42	336	73.98	376	82.51
17	4.06	57	13.20	97	22.14	137	30.97	177	39.72	217	48.41	257	57.04	297	65.64	337	74.20	377	82.72
18	4.29	58	13.42	98	22.36	138	31.19	178	39.94	218	48.62	258	57.26	298	65.85	338	74.41	378	82.93
19	4.53	59	13.65	99	22.58	139	31.41	179	40.15	219	48.84	259	57.48	299	66.07	339	74.62	379	83.15
20	4.76	60	13.87	100	22.81	140	31.63	180	40.37	220	49.06	260	57.69	300	66.28	340	74.84	380	83.36
21	4.99	61	14.10	101	23.03	141	31.85	181	40.59	221	49.27	261	57.91	301	66.50	341	75.05	381	83.57
22	5.22	62	14.32	102	23.25	142	32.07	182	40.81	222	49.49	262	58.12	302	66.71	342	75.26	382	83.78
23	5.45	63	14.55	103	23.47	143	32.29	183	41.03	223	49.71	263	58.34	303	66.93	343	75.48	383	84.00
24	5.68	64	14.77	104	23.69	144	32.50	184	41.24	224	49.92	264	58.55	304	67.14	344	75.69	384	84.21
25	5.91	65	15.00	105	23.91	145	32.72	185	41.46	225	50.14	265	58.77	305	67.35	345	75.90	385	84.42
26	6.14	66	15.22	106	24.13	146	32.94	186	41.68	226	50.35	266	58.98	306	67.57	346	76.12	386	84.64
27	6.37	67	15.45	107	24.36	147	33.16	187	41.90	227	50.57	267	59.20	307	67.78	347	76.33	387	84.85
28	6.60	68	15.67	108	24.58	148	33.38	188	42.11	228	50.79	268	59.41	308	68.00	348	76.54	388	85.06
29	6.83	69	15.90	109	24.80	149	33.60	189	42.33	229	51.00	269	59.63	309	68.21	349	76.76	389	85.27
30	7.06	70	16.12	110	25.02	150	33.82	190	42.55	230	51.22	270	59.84	310	68.42	350	76.97	390	85.49
31	7.29	71	16.34	111	25.24	151	34.04	191	42.77	231	51.44	271	60.06	311	68.64	351	77.18	391	85.70
32	7.52	72	16.57	112	25.46	152	34.26	192	42.98	232	51.65	272	60.27	312	68.85	352	77.40	392	85.91
33	7.75	73	16.79	113	25.68	153	34.48	193	43.20	233	51.87	273	60.49	313	69.07	353	77.61	393	86.12
34	7.98	74	17.02	114	25.90	154	34.70	194	43.42	234	52.08	274	60.70	314	69.28	354	77.82	394	86.33
35	8.21	75	17.24	115	26.12	155	34.91	195	43.63	235	52.30	275	60.92	315	69.49	355	78.04	395	86.55
36	8.44	76	17.46	116	26.34	156	35.13	196	43.85	236	52.52	276	61.13	316	69.71	356	78.25	396	86.76
37	8.67	77	17.69	117	26.57	157	35.35	197	44.07	237	52.73	277	61.35	317	69.92	357	78.46	397	86.97
38	8.89	78	17.91	118	26.79	158	35.57	198	44.29	238	52.95	278	61.56	318	70.14	358	78.68	398	87.18
39	9.12	79	18.13	119	27.01	159	35.79	199	44.50	239	53.16	279	61.78	319	70.35	359	78.89	399	87.40
40	9.35	80	18.36	120	27.23	160	36.01	200	44.72	240	53.38	280	61.99	320	70.56	360	79.10	400	87.61

Table 6. Water Quality Standards for Dissolved Lead

<u>Acute Aquatic and Wildlife coldwater, warmwater and edw</u>		<u>Chronic Aquatic and Wildlife coldwater, warmwater and edw</u>		<u>Acute Aquatic and Wildlife ephemeral</u>	
<u>Hard. mg/L</u>	<u>Std. µg/L</u>	<u>Hard. mg/L</u>	<u>Std. µg/L</u>	<u>Hard. mg/L</u>	<u>Std. µg/L</u>
20	10.8	20	0.4	20	22.8
100	64.6	100	2.5	100	136.3
400	281	400	10.9	400	592.7
$e^{(1.273 * LN(Hardness) - 1.46)} * (1.46203 - (LN(Hardness)) * (0.145712))$		$e^{(1.273 * LN(Hardness) - 4.705)} * (1.46203 - (LN(Hardness)) * (0.145712))$		$e^{(1.273 * (LN(Hardness)) - 0.7131)} * (1.46203 - (LN(Hardness)) * (0.145712))$	



Table 7. Acute Water Quality Standards for Dissolved Chromium III Aquatic and Wildlife coldwater, warmwater and edw

Table with 20 columns (Hard mg/L, Std. µg/L) and 40 rows of numerical data representing water quality standards for Chromium III.

Table 7. Water Quality Standards for Dissolved Nickel

Table with 3 main columns: Acute Aquatic and Wildlife coldwater, warmwater and edw; Chronic Aquatic and Wildlife coldwater, warmwater and edw; Acute Aquatic and Wildlife ephemeral. Each column has sub-columns for Hard. mg/L and Std. µg/L with values and formulas.

Table 8. Chronic Water Quality Standards for Dissolved Chromium III Aquatic and Wildlife coldwater, warmwater and edw

Table with 20 columns (Hard. mg/L, Std. µg/L) and 7 rows of numerical data representing chronic water quality standards for Chromium III.



8	9.37	48	40.63	88	66.75	128	90.72	168	113.35	208	135.02	248	155.94	288	176.26	328	196.07	368	215.44
9	10.21	49	41.22	89	67.37	129	91.20	169	113.90	209	135.55	249	156.46	289	176.76	329	196.56	369	215.92
10	11.24	50	42.01	90	67.99	130	91.88	170	114.46	210	136.08	250	156.97	290	177.26	330	197.05	370	216.40
11	12.16	51	42.70	91	68.61	131	92.46	171	115.01	211	136.61	251	157.48	291	177.76	331	197.53	371	216.88
12	13.05	52	43.38	92	69.22	132	93.04	172	115.56	212	137.14	252	158.00	292	178.26	332	198.02	372	217.36
13	13.94	53	44.06	93	69.84	133	93.61	173	116.11	213	137.67	253	158.51	293	178.76	333	198.51	373	217.84
14	14.81	54	44.74	94	70.45	134	94.19	174	116.66	214	138.20	254	159.02	294	179.26	334	199.00	374	218.32
15	15.67	55	45.42	95	71.07	135	94.76	175	117.21	215	138.73	255	159.54	295	179.76	335	199.49	375	218.79
16	16.52	56	46.10	96	71.68	136	95.34	176	117.75	216	139.26	256	160.05	296	180.26	336	199.97	376	219.27
17	17.36	57	46.77	97	72.29	137	95.91	177	118.30	217	139.79	257	160.56	297	180.76	337	200.46	377	219.75
18	18.20	58	47.44	98	72.90	138	96.49	178	118.85	218	140.31	258	161.07	298	181.25	338	200.95	378	220.23
19	19.02	59	48.11	99	73.51	139	97.06	179	119.40	219	140.84	259	161.58	299	181.75	339	201.44	379	220.70
20	19.84	60	48.78	100	74.11	140	97.63	180	119.94	220	141.37	260	162.09	300	182.25	340	201.92	380	221.18
21	20.64	61	49.44	101	74.72	141	98.20	181	120.49	221	141.89	261	162.60	301	182.75	341	202.41	381	221.66
22	21.45	62	50.10	102	75.33	142	98.77	182	121.03	222	142.42	262	163.11	302	183.24	342	202.89	382	222.13
23	22.24	63	50.76	103	75.93	143	99.34	183	121.58	223	142.94	263	163.62	303	183.74	343	203.38	383	222.61
24	23.03	64	51.42	104	76.53	144	99.91	184	122.12	224	143.47	264	164.13	304	184.24	344	203.87	384	223.09
25	23.81	65	52.08	105	77.14	145	100.48	185	122.66	225	143.99	265	164.64	305	184.73	345	204.35	385	223.56
26	24.59	66	52.74	106	77.74	146	101.04	186	123.21	226	144.52	266	165.15	306	185.23	346	204.84	386	224.04
27	25.36	67	53.39	107	78.34	147	101.61	187	123.75	227	145.04	267	165.66	307	185.72	347	205.32	387	224.51
28	26.13	68	54.04	108	78.94	148	102.18	188	124.29	228	145.56	268	166.17	308	186.22	348	205.81	388	224.99
29	26.89	69	54.69	109	79.53	149	102.74	189	124.83	229	146.09	269	166.67	309	186.72	349	206.29	389	225.46
30	27.65	70	55.34	110	80.13	150	103.31	190	125.37	230	146.61	270	167.18	310	187.21	350	206.77	390	225.94
31	28.40	71	55.99	111	80.73	151	103.87	191	125.91	231	147.13	271	167.69	311	187.70	351	207.26	391	226.41
32	29.15	72	56.63	112	81.32	152	104.43	192	126.45	232	147.65	272	168.20	312	188.20	352	207.74	392	226.88
33	29.89	73	57.27	113	81.92	153	104.99	193	126.99	233	148.17	273	168.70	313	188.69	353	208.22	393	227.36
34	30.63	74	57.92	114	82.51	154	105.56	194	127.53	234	148.69	274	169.21	314	189.19	354	208.71	394	227.83
35	31.37	75	58.56	115	83.10	155	106.12	195	128.07	235	149.21	275	169.71	315	189.68	355	209.19	395	228.31
36	32.10	76	59.20	116	83.69	156	106.68	196	128.61	236	149.73	276	170.22	316	190.17	356	209.67	396	228.78
37	32.83	77	59.83	117	84.28	157	107.24	197	129.14	237	150.25	277	170.72	317	190.66	357	210.15	397	229.25
38	33.55	78	60.47	118	84.87	158	107.80	198	129.68	238	150.77	278	171.23	318	191.16	358	210.64	398	229.72
39	34.28	79	61.10	119	85.46	159	108.35	199	130.22	239	151.29	279	171.73	319	191.65	359	211.12	399	230.20
40	34.99	80	61.74	120	86.05	160	108.91	200	130.75	240	151.81	280	172.24	320	192.14	360	211.60	400	230.67

Table 8. Water Quality Standards for Dissolved Silver

Acute Aquatic and Wildlife coldwater, warmwater, edw. and ephemeral	
Hard. mg/L	Std. ug/L
20	0.20
100	3.2
400	34.9
$e^{(1.72*LN(Hardness)-6.59)}*(0.85)$	

Table 9. Acute Water Quality Standards for Dissolved Chromium III Aquatic and Wildlife ephemeral

Hard. mg/L	Std. ug/L																		
1	44	41	921	81	1609	121	2235	161	2824	201	3386	241	3929	281	4456	321	4969	361	5470
2	78	42	939	82	1625	122	2250	162	2838	202	3400	242	3942	282	4469	322	4981	362	5483
3	108	43	958	83	1641	123	2265	163	2852	203	3414	243	3956	283	4481	323	4994	363	5495
4	137	44	976	84	1657	124	2280	164	2867	204	3428	244	3969	284	4494	324	5007	364	5507
5	164	45	994	85	1673	125	2295	165	2881	205	3441	245	3982	285	4507	325	5019	365	5520
6	191	46	1012	86	1690	126	2310	166	2895	206	3455	246	3996	286	4520	326	5032	366	5532
7	217	47	1030	87	1706	127	2325	167	2909	207	3469	247	4009	287	4533	327	5045	367	5545
8	242	48	1048	88	1722	128	2340	168	2924	208	3483	248	4022	288	4546	328	5057	368	5557
9	266	49	1066	89	1738	129	2355	169	2938	209	3496	249	4035	289	4559	329	5070	369	5569
10	290	50	1084	90	1754	130	2370	170	2952	210	3510	250	4049	290	4572	330	5082	370	5582
11	314	51	1101	91	1770	131	2385	171	2966	211	3524	251	4062	291	4585	331	5095	371	5594
12	337	52	1119	92	1785	132	2400	172	2981	212	3537	252	4075	292	4598	332	5108	372	5606
13	360	53	1137	93	1801	133	2415	173	2995	213	3551	253	4088	293	4611	333	5120	373	5619
14	382	54	1154	94	1817	134	2429	174	3009	214	3565	254	4102	294	4624	334	5133	374	5631
15	404	55	1172	95	1833	135	2444	175	3023	215	3578	255	4115	295	4637	335	5145	375	5643
16	426	56	1189	96	1849	136	2459	176	3037	216	3592	256	4128	296	4649	336	5158	376	5656



17	448	57	1206	97	1865	137	2474	177	3051	217	3606	257	4141	297	4662	337	5171	377	5668
18	469	58	1224	98	1880	138	2489	178	3066	218	3619	258	4155	298	4675	338	5183	378	5680
19	491	59	1241	99	1896	139	2503	179	3080	219	3633	259	4168	299	4688	339	5196	379	5693
20	512	60	1258	100	1912	140	2518	180	3094	220	3646	260	4181	300	4701	340	5208	380	5705
21	532	61	1275	101	1927	141	2533	181	3108	221	3660	261	4194	301	4714	341	5221	381	5717
22	553	62	1292	102	1943	142	2548	182	3122	222	3673	262	4207	302	4726	342	5233	382	5730
23	574	63	1309	103	1958	143	2562	183	3136	223	3687	263	4220	303	4739	343	5246	383	5742
24	594	64	1326	104	1974	144	2577	184	3150	224	3701	264	4234	304	4752	344	5258	384	5754
25	614	65	1343	105	1990	145	2592	185	3164	225	3714	265	4247	305	4765	345	5271	385	5766
26	634	66	1360	106	2005	146	2606	186	3178	226	3728	266	4260	306	4778	346	5283	386	5779
27	654	67	1377	107	2021	147	2621	187	3192	227	3741	267	4273	307	4790	347	5296	387	5791
28	674	68	1394	108	2036	148	2635	188	3206	228	3755	268	4286	308	4803	348	5308	388	5803
29	694	69	1411	109	2051	149	2650	189	3220	229	3768	269	4299	309	4816	349	5321	389	5815
30	713	70	1427	110	2067	150	2665	190	3234	230	3781	270	4312	310	4829	350	5333	390	5828
31	733	71	1444	111	2082	151	2679	191	3248	231	3795	271	4325	311	4841	351	5346	391	5840
32	752	72	1461	112	2098	152	2694	192	3262	232	3808	272	4338	312	4854	352	5358	392	5852
33	771	73	1477	113	2113	153	2708	193	3276	233	3822	273	4351	313	4867	353	5371	393	5864
34	790	74	1494	114	2128	154	2723	194	3289	234	3835	274	4364	314	4880	354	5383	394	5877
35	809	75	1510	115	2143	155	2737	195	3303	235	3849	275	4377	315	4892	355	5396	395	5889
36	828	76	1527	116	2159	156	2752	196	3317	236	3862	276	4390	316	4905	356	5408	396	5901
37	847	77	1543	117	2174	157	2766	197	3331	237	3875	277	4404	317	4918	357	5421	397	5913
38	865	78	1560	118	2189	158	2780	198	3345	238	3889	278	4417	318	4931	358	5433	398	5925
39	884	79	1576	119	2204	159	2795	199	3359	239	3902	279	4430	319	4943	359	5445	399	5938
40	903	80	1592	120	2220	160	2809	200	3372	240	3916	280	4443	320	4956	360	5458	400	5950

Table 9. Water Quality Standards for Dissolved Zinc

<u>Acute and Chronic Aquatic and Wildlife coldwater, warmwater and edw</u>		<u>Acute Aquatic and Wildlife ephemeral</u>	
<u>Hard. mg/L</u>	<u>Std. ug/L</u>	<u>Hard. mg/L</u>	<u>Std. ug/L</u>
<u>20</u>	<u>30.0</u>	<u>20</u>	<u>284</u>
<u>100</u>	<u>117</u>	<u>100</u>	<u>1112</u>
<u>400</u>	<u>379</u>	<u>400</u>	<u>3599</u>
<u>$e^{(0.8473*LN(Hardness)+0.884)}*(0.978)$</u>		<u>$e^{(0.8473*LN(Hardness)+3.1342)}*(0.978)$</u>	

Table 10. Acute Water Quality Standards for Dissolved Copper Aquatic and Wildlife coldwater, warmwater and edw

Hard. mg/L	Std. ug/L																		
1	-0.18	41	5.80	81	11.02	121	16.08	161	21.05	201	25.94	241	30.78	281	35.57	321	40.33	361	45.05
2	-0.34	42	5.93	82	11.15	122	16.21	162	21.17	202	26.07	242	30.90	282	35.69	322	40.45	362	45.16
3	-0.49	43	6.07	83	11.28	123	16.33	163	21.30	203	26.19	243	31.02	283	35.81	323	40.56	363	45.28
4	-0.65	44	6.20	84	11.40	124	16.46	164	21.42	204	26.31	244	31.14	284	35.93	324	40.68	364	45.40
5	-0.80	45	6.33	85	11.53	125	16.58	165	21.54	205	26.43	245	31.26	285	36.05	325	40.80	365	45.52
6	-0.95	46	6.47	86	11.66	126	16.71	166	21.66	206	26.55	246	31.38	286	36.17	326	40.92	366	45.63
7	-1.10	47	6.60	87	11.79	127	16.83	167	21.79	207	26.67	247	31.50	287	36.29	327	41.04	367	45.75
8	-1.24	48	6.73	88	11.91	128	16.96	168	21.91	208	26.79	248	31.62	288	36.41	328	41.16	368	45.87
9	-1.39	49	6.86	89	12.04	129	17.08	169	22.03	209	26.92	249	31.74	289	36.53	329	41.27	369	45.99
10	-1.54	50	6.99	90	12.17	130	17.21	170	22.16	210	27.04	250	31.86	290	36.65	330	41.39	370	46.10
11	-1.68	51	7.13	91	12.30	131	17.33	171	22.28	211	27.16	251	31.98	291	36.77	331	41.51	371	46.22
12	-1.82	52	7.26	92	12.42	132	17.46	172	22.40	212	27.28	252	32.10	292	36.89	332	41.63	372	46.34
13	-1.97	53	7.39	93	12.55	133	17.58	173	22.52	213	27.40	253	32.22	293	37.00	333	41.75	373	46.46
14	-2.11	54	7.52	94	12.68	134	17.71	174	22.65	214	27.52	254	32.34	294	37.12	334	41.86	374	46.57
15	-2.25	55	7.65	95	12.81	135	17.83	175	22.77	215	27.64	255	32.46	295	37.24	335	41.98	375	46.69
16	-2.39	56	7.78	96	12.93	136	17.96	176	22.89	216	27.76	256	32.58	296	37.36	336	42.10	376	46.81
17	-2.53	57	7.91	97	13.06	137	18.08	177	23.02	217	27.89	257	32.70	297	37.48	337	42.22	377	46.92
18	-2.67	58	8.04	98	13.19	138	18.20	178	23.14	218	28.01	258	32.82	298	37.60	338	42.34	378	47.04
19	-2.81	59	8.17	99	13.31	139	18.33	179	23.26	219	28.13	259	32.94	299	37.72	339	42.45	379	47.16
20	-2.95	60	8.31	100	13.44	140	18.45	180	23.38	220	28.25	260	33.06	300	37.84	340	42.57	380	47.28
21	-3.09	61	8.44	101	13.57	141	18.58	181	23.50	221	28.37	261	33.18	301	37.96	341	42.69	381	47.39
22	-3.23	62	8.57	102	13.69	142	18.70	182	23.63	222	28.49	262	33.30	302	38.07	342	42.81	382	47.51
23	-3.37	63	8.70	103	13.82	143	18.82	183	23.75	223	28.61	263	33.42	303	38.19	343	42.93	383	47.63
24	-3.50	64	8.83	104	13.95	144	18.95	184	23.87	224	28.73	264	33.54	304	38.31	344	43.04	384	47.74
25	3.64	65	8.96	105	14.07	145	19.07	185	23.99	225	28.85	265	33.66	305	38.43	345	43.16	385	47.86



26	3.78	66	9.09	106	14.20	146	19.20	186	24.12	226	28.97	266	33.78	306	38.55	346	43.28	386	47.98
27	3.91	67	9.22	107	14.32	147	19.32	187	24.24	227	29.09	267	33.90	307	38.67	347	43.40	387	48.10
28	4.05	68	9.34	108	14.45	148	19.44	188	24.36	228	29.22	268	34.02	308	38.79	348	43.52	388	48.21
29	4.19	69	9.47	109	14.58	149	19.57	189	24.48	229	29.34	269	34.14	309	38.91	349	43.63	389	48.33
30	4.32	70	9.60	110	14.70	150	19.69	190	24.60	230	29.46	270	34.26	310	39.02	350	43.75	390	48.45
31	4.46	71	9.73	111	14.83	151	19.82	191	24.73	231	29.58	271	34.38	311	39.14	351	43.87	391	48.56
32	4.59	72	9.86	112	14.95	152	19.94	192	24.85	232	29.70	272	34.50	312	39.26	352	43.99	392	48.68
33	4.73	73	9.99	113	15.08	153	20.06	193	24.97	233	29.82	273	34.62	313	39.38	353	44.10	393	48.80
34	4.86	74	10.12	114	15.20	154	20.19	194	25.09	234	29.94	274	34.74	314	39.50	354	44.22	394	48.92
35	5.00	75	10.25	115	15.33	155	20.31	195	25.21	235	30.06	275	34.86	315	39.62	355	44.34	395	49.03
36	5.13	76	10.38	116	15.46	156	20.43	196	25.34	236	30.18	276	34.98	316	39.74	356	44.46	396	49.15
37	5.27	77	10.51	117	15.58	157	20.56	197	25.46	237	30.30	277	35.10	317	39.85	357	44.58	397	49.27
38	5.40	78	10.63	118	15.71	158	20.68	198	25.58	238	30.42	278	35.22	318	39.97	358	44.69	398	49.38
39	5.53	79	10.76	119	15.83	159	20.80	199	25.70	239	30.54	279	35.34	319	40.09	359	44.81	399	49.50
40	5.67	80	10.89	120	15.96	160	20.93	200	25.82	240	30.66	280	35.46	320	40.21	360	44.93	400	49.62

Table 10. Water Quality Standards for Pentachlorophenol

Acute Aquatic and Wildlife coldwater, warmwater and edw		Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
pH	µg/L	pH	µg/L	pH	µg/L
3	0.16	3	0.1	3	0.66
6	3.3	6	2.1	6	13.5
9	67.7	9	42.7	9	274
$e^{(1.005*(pH)-4.83)}$		$e^{(1.005*(pH)-5.29)}$		$e^{(1.005*(pH)-3.4306)}$	

Table 11. Chronic Water Quality Standards for Dissolved Copper Aquatic and Wildlife coldwater, warmwater and edw

Hard. mg/L	Std. µg/L																		
1	0.18	41	4.18	81	7.48	121	10.54	161	13.45	201	16.26	241	18.99	281	21.65	321	24.26	361	26.82
2	0.32	42	4.27	82	7.56	122	10.61	162	13.52	202	16.33	242	19.06	282	21.72	322	24.33	362	26.89
3	0.45	43	4.35	83	7.64	123	10.69	163	13.60	203	16.40	243	19.13	283	21.78	323	24.39	363	26.95
4	0.57	44	4.44	84	7.72	124	10.76	164	13.67	204	16.47	244	19.19	284	21.85	324	24.45	364	27.01
5	0.69	45	4.53	85	7.79	125	10.84	165	13.74	205	16.54	245	19.26	285	21.92	325	24.52	365	27.08
6	0.81	46	4.61	86	7.87	126	10.91	166	13.81	206	16.61	246	19.33	286	21.98	326	24.58	366	27.14
7	0.92	47	4.70	87	7.95	127	10.99	167	13.88	207	16.68	247	19.39	287	22.05	327	24.65	367	27.20
8	1.03	48	4.78	88	8.03	128	11.06	168	13.95	208	16.75	248	19.46	288	22.11	328	24.71	368	27.27
9	1.14	49	4.87	89	8.11	129	11.13	169	14.02	209	16.81	249	19.53	289	22.18	329	24.78	369	27.33
10	1.25	50	4.95	90	8.18	130	11.21	170	14.09	210	16.88	250	19.59	290	22.24	330	24.84	370	27.39
11	1.36	51	5.04	91	8.26	131	11.28	171	14.16	211	16.95	251	19.66	291	22.31	331	24.91	371	27.46
12	1.46	52	5.12	92	8.34	132	11.35	172	14.24	212	17.02	252	19.73	292	22.38	332	24.97	372	27.52
13	1.57	53	5.21	93	8.42	133	11.43	173	14.31	213	17.09	253	19.80	293	22.44	333	25.03	373	27.58
14	1.67	54	5.29	94	8.49	134	11.50	174	14.38	214	17.16	254	19.86	294	22.51	334	25.10	374	27.65
15	1.77	55	5.37	95	8.57	135	11.57	175	14.45	215	17.23	255	19.93	295	22.57	335	25.16	375	27.71
16	1.87	56	5.46	96	8.65	136	11.65	176	14.52	216	17.29	256	20.00	296	22.64	336	25.23	376	27.77
17	1.97	57	5.54	97	8.73	137	11.72	177	14.59	217	17.36	257	20.06	297	22.70	337	25.29	377	27.83
18	2.07	58	5.62	98	8.80	138	11.79	178	14.66	218	17.43	258	20.13	298	22.77	338	25.35	378	27.90
19	2.17	59	5.71	99	8.88	139	11.87	179	14.73	219	17.50	259	20.20	299	22.83	339	25.42	379	27.96
20	2.26	60	5.79	100	8.96	140	11.94	180	14.80	220	17.57	260	20.26	300	22.90	340	25.48	380	28.02
21	2.36	61	5.87	101	9.03	141	12.01	181	14.87	221	17.64	261	20.33	301	22.96	341	25.55	381	28.09
22	2.46	62	5.95	102	9.11	142	12.08	182	14.94	222	17.70	262	20.40	302	23.03	342	25.61	382	28.15
23	2.55	63	6.03	103	9.18	143	12.16	183	15.01	223	17.77	263	20.46	303	23.09	343	25.68	383	28.21
24	2.65	64	6.12	104	9.26	144	12.23	184	15.08	224	17.84	264	20.53	304	23.16	344	25.74	384	28.28
25	2.74	65	6.20	105	9.34	145	12.30	185	15.15	225	17.91	265	20.60	305	23.22	345	25.80	385	28.34
26	2.83	66	6.28	106	9.41	146	12.37	186	15.22	226	17.98	266	20.66	306	23.29	346	25.87	386	28.40
27	2.93	67	6.36	107	9.49	147	12.45	187	15.29	227	18.04	267	20.73	307	23.35	347	25.93	387	28.46
28	3.02	68	6.44	108	9.56	148	12.52	188	15.36	228	18.11	268	20.79	308	23.42	348	25.99	388	28.53
29	3.11	69	6.52	109	9.64	149	12.59	189	15.43	229	18.18	269	20.86	309	23.48	349	26.06	389	28.59
30	3.20	70	6.60	110	9.72	150	12.66	190	15.50	230	18.25	270	20.93	310	23.55	350	26.12	390	28.65
31	3.29	71	6.68	111	9.79	151	12.74	191	15.57	231	18.32	271	20.99	311	23.61	351	26.19	391	28.72
32	3.38	72	6.76	112	9.87	152	12.81	192	15.64	232	18.38	272	21.06	312	23.68	352	26.25	392	28.78
33	3.47	73	6.84	113	9.94	153	12.88	193	15.71	233	18.45	273	21.13	313	23.74	353	26.31	393	28.84
34	3.56	74	6.92	114	10.02	154	12.95	194	15.78	234	18.52	274	21.19	314	23.81	354	26.38	394	28.90
35	3.65	75	7.00	115	10.09	155	13.02	195	15.85	235	18.59	275	21.26	315	23.87	355	26.44	395	28.97



36	3.74	76	7.08	116	10.17	156	13.10	196	15.92	236	18.65	276	21.32	316	23.94	356	26.50	396	29.03
37	3.82	77	7.16	117	10.24	157	13.17	197	15.99	237	18.72	277	21.39	317	24.00	357	26.57	397	29.09
38	3.92	78	7.24	118	10.32	158	13.24	198	16.05	238	18.79	278	21.46	318	24.07	358	26.63	398	29.15
39	4.01	79	7.32	119	10.39	159	13.31	199	16.12	239	18.86	279	21.52	319	24.13	359	26.70	399	29.22
40	4.09	80	7.40	120	10.47	160	13.38	200	16.19	240	18.92	280	21.59	320	24.20	360	26.76	400	29.28

Table 12. Acute Water Quality Standards for Dissolved Copper Aquatic and Wildlife ephemeral

Hard. mg/L	Std. µg/L																		
1	0.30	41	10.04	81	19.07	121	27.84	161	36.42	201	44.91	241	53.28	281	61.57	321	69.80	361	77.97
2	0.58	42	10.27	82	19.29	122	28.05	162	36.65	202	45.12	242	53.49	282	61.78	322	70.00	362	78.17
3	0.85	43	10.50	83	19.52	123	28.27	163	36.86	203	45.33	243	53.70	283	61.99	323	70.21	363	78.37
4	1.12	44	10.73	84	19.74	124	28.49	164	37.07	204	45.54	244	53.90	284	62.19	324	70.41	364	78.58
5	1.38	45	10.96	85	19.96	125	28.70	165	37.29	205	45.75	245	54.11	285	62.40	325	70.62	365	78.78
6	1.64	46	11.19	86	20.18	126	28.92	166	37.50	206	45.96	246	54.32	286	62.61	326	70.82	366	78.98
7	1.90	47	11.42	87	20.40	127	29.14	167	37.71	207	46.17	247	54.53	287	62.81	327	71.03	367	79.19
8	2.15	48	11.65	88	20.62	128	29.35	168	37.92	208	46.38	248	54.74	288	63.02	328	71.23	368	79.39
9	2.41	49	11.88	89	20.84	129	29.57	169	38.14	209	46.59	249	54.94	289	63.22	329	71.44	369	79.59
10	2.66	50	12.11	90	21.06	130	29.78	170	38.35	210	46.80	250	55.15	290	63.43	330	71.64	370	79.80
11	2.91	51	12.33	91	21.28	131	30.00	171	38.56	211	47.01	251	55.36	291	63.64	331	71.85	371	80.00
12	3.16	52	12.56	92	21.50	132	30.22	172	38.77	212	47.22	252	55.57	292	63.84	332	72.05	372	80.20
13	3.40	53	12.79	93	21.72	133	30.43	173	38.99	213	47.43	253	55.78	293	64.05	333	72.26	373	80.41
14	3.65	54	13.02	94	21.94	134	30.65	174	39.20	214	47.64	254	55.98	294	64.25	334	72.46	374	80.61
15	3.89	55	13.24	95	22.16	135	30.86	175	39.41	215	47.85	255	56.19	295	64.46	335	72.66	375	80.81
16	4.14	56	13.47	96	22.38	136	31.08	176	39.62	216	48.06	256	56.40	296	64.67	336	72.87	376	81.02
17	4.38	57	13.70	97	22.60	137	31.29	177	39.84	217	48.27	257	56.61	297	64.87	337	73.07	377	81.22
18	4.62	58	13.92	98	22.82	138	31.51	178	40.05	218	48.48	258	56.81	298	65.08	338	73.28	378	81.42
19	4.86	59	14.15	99	23.04	139	31.72	179	40.26	219	48.68	259	57.02	299	65.28	339	73.48	379	81.62
20	5.11	60	14.37	100	23.26	140	31.94	180	40.47	220	48.89	260	57.23	300	65.49	340	73.69	380	81.83
21	5.35	61	14.60	101	23.48	141	32.15	181	40.68	221	49.10	261	57.44	301	65.69	341	73.89	381	82.03
22	5.59	62	14.83	102	23.70	142	32.37	182	40.89	222	49.31	262	57.64	302	65.90	342	74.09	382	82.23
23	5.82	63	15.05	103	23.92	143	32.58	183	41.11	223	49.52	263	57.85	303	66.11	343	74.30	383	82.44
24	6.06	64	15.28	104	24.14	144	32.80	184	41.32	224	49.73	264	58.06	304	66.31	344	74.50	384	82.64
25	6.30	65	15.50	105	24.36	145	33.01	185	41.53	225	49.94	265	58.26	305	66.52	345	74.71	385	82.84
26	6.54	66	15.73	106	24.57	146	33.23	186	41.74	226	50.15	266	58.47	306	66.72	346	74.91	386	83.04
27	6.77	67	15.95	107	24.79	147	33.44	187	41.95	227	50.36	267	58.68	307	66.93	347	75.11	387	83.25
28	7.01	68	16.17	108	25.01	148	33.65	188	42.16	228	50.57	268	58.89	308	67.13	348	75.32	388	83.45
29	7.25	69	16.40	109	25.23	149	33.87	189	42.37	229	50.78	269	59.09	309	67.34	349	75.52	389	83.65
30	7.48	70	16.62	110	25.45	150	34.08	190	42.59	230	50.99	270	59.30	310	67.54	350	75.73	390	83.85
31	7.72	71	16.85	111	25.66	151	34.30	191	42.80	231	51.19	271	59.51	311	67.75	351	75.93	391	84.06
32	7.95	72	17.07	112	25.88	152	34.51	192	43.01	232	51.40	272	59.71	312	67.95	352	76.13	392	84.26
33	8.18	73	17.29	113	26.10	153	34.72	193	43.22	233	51.61	273	59.92	313	68.16	353	76.34	393	84.46
34	8.42	74	17.52	114	26.32	154	34.94	194	43.43	234	51.82	274	60.13	314	68.36	354	76.54	394	84.66
35	8.65	75	17.74	115	26.53	155	35.15	195	43.64	235	52.03	275	60.33	315	68.57	355	76.74	395	84.87
36	8.88	76	17.96	116	26.75	156	35.37	196	43.85	236	52.24	276	60.54	316	68.77	356	76.95	396	85.07
37	9.12	77	18.18	117	26.97	157	35.58	197	44.06	237	52.45	277	60.75	317	68.98	357	77.15	397	85.27
38	9.35	78	18.41	118	27.19	158	35.79	198	44.27	238	52.65	278	60.95	318	69.18	358	77.36	398	85.47
39	9.58	79	18.63	119	27.40	159	36.01	199	44.48	239	52.86	279	61.16	319	69.39	359	77.56	399	85.68
40	9.81	80	18.85	120	27.62	160	36.22	200	44.69	240	53.07	280	61.37	320	69.59	360	77.76	400	85.88

Table 13. Acute Water Quality Standards for Dissolved Lead Aquatic and Wildlife coldwater, warmwater and edw

Hard. mg/L	Std. µg/L																		
1	0.34	41	24.17	81	51.30	121	79.43	161	108.02	201	136.86	241	165.82	281	194.81	321	223.79	361	252.72
2	0.76	42	24.82	82	52.00	122	80.14	162	108.74	202	137.59	242	166.55	282	195.54	322	224.52	362	253.44
3	1.22	43	25.48	83	52.69	123	80.85	163	109.46	203	138.31	243	167.27	283	196.26	323	225.24	363	254.16
4	1.71	44	26.14	84	53.39	124	81.56	164	110.18	204	139.03	244	167.99	284	196.99	324	225.96	364	254.89
5	2.21	45	26.81	85	54.08	125	82.27	165	110.90	205	139.76	245	168.72	285	197.71	325	226.69	365	255.61
6	2.73	46	27.47	86	54.78	126	82.98	166	111.62	206	140.48	246	169.44	286	198.44	326	227.41	366	256.33
7	3.26	47	28.13	87	55.48	127	83.69	167	112.34	207	141.20	247	170.17	287	199.16	327	228.14	367	257.05
8	3.80	48	28.80	88	56.17	128	84.41	168	113.06	208	141.93	248	170.89	288	199.89	328	228.86	368	257.77
9	4.35	49	29.47	89	56.87	129	85.12	169	113.78	209	142.65	249	171.62	289	200.61	329	229.58	369	258.50
10	4.91	50	30.14	90	57.57	130	85.83	170	114.50	210	143.37	250	172.34	290	201.34	330	230.31	370	259.22
11	5.47	51	30.81	91	58.27	131	86.54	171	115.22	211	144.10	251	173.07	291	202.06	331	231.03	371	259.94
12	6.04	52	31.48	92	58.97	132	87.26	172	115.94	212	144.82	252	173.79	292	202.79	332	231.75	372	260.66
13	6.62	53	32.15	93	59.67	133	87.97	173	116.66	213	145.54	253	174.52	293	203.51	333	232.48	373	261.38
14	7.20	54	32.82	94	60.37	134	88.68	174	117.38	214	146.27	254	175.24	294	204.24	334	233.20	374	262.10
15	7.79	55	33.49	95	61.07	135	89.40	175	118.10	215	146.99	255	175.97	295	204.96	335	233.92	375	262.83
16	8.38	56	34.17	96	61.77	136	90.11	176	118.82	216	147.71	256	176.69	296	205.69	336	234.65	376	263.55
17	8.98	57	34.84	97	62.47	137	90.83	177	119.54	217	148.44	257	177.42	297	206.41	337	235.37	377	264.27
18	9.58	58	35.52	98	63.18	138	91.54	178	120.26	218	149.16	258	178.14	298	207.13	338	236.09	378	264.99
19	10.18	59	36.20	99	63.88	139	92.25	179	120.98	219	149.89	2							



20	-10.79	60	36.88	100	64.58	140	92.97	180	121.70	220	150.61	260	179.59	300	208.58	340	237.54	380	266.43
21	-11.40	61	37.56	101	65.28	141	93.68	181	122.42	221	151.33	261	180.32	301	209.31	341	238.26	381	267.15
22	-12.02	62	38.24	102	65.99	142	94.40	182	123.14	222	152.06	262	181.04	302	210.03	342	238.99	382	267.88
23	-12.64	63	38.92	103	66.69	143	95.12	183	123.87	223	152.78	263	181.77	303	210.76	343	239.71	383	268.60
24	-13.26	64	39.60	104	67.40	144	95.83	184	124.59	224	153.51	264	182.49	304	211.48	344	240.43	384	269.32
25	-13.88	65	40.28	105	68.10	145	96.55	185	125.31	225	154.23	265	183.22	305	212.21	345	241.16	385	270.04
26	-14.51	66	40.97	106	68.81	146	97.26	186	126.03	226	154.95	266	183.94	306	212.93	346	241.88	386	270.76
27	-15.14	67	41.65	107	69.51	147	97.98	187	126.75	227	155.68	267	184.67	307	213.65	347	242.60	387	271.48
28	-15.77	68	42.33	108	70.22	148	98.70	188	127.47	228	156.40	268	185.39	308	214.38	348	243.33	388	272.20
29	-16.40	69	43.02	109	70.93	149	99.41	189	128.20	229	157.13	269	186.12	309	215.10	349	244.05	389	272.92
30	-17.04	70	43.71	110	71.63	150	100.13	190	128.92	230	157.85	270	186.84	310	215.83	350	244.77	390	273.64
31	-17.68	71	44.39	111	72.34	151	100.85	191	129.64	231	158.58	271	187.57	311	216.55	351	245.49	391	274.36
32	-18.32	72	45.08	112	73.05	152	101.56	192	130.36	232	159.30	272	188.29	312	217.28	352	246.22	392	275.08
33	-18.96	73	45.77	113	73.75	153	102.28	193	131.08	233	160.02	273	189.02	313	218.00	353	246.94	393	275.80
34	-19.61	74	46.46	114	74.46	154	103.00	194	131.81	234	160.75	274	189.74	314	218.72	354	247.66	394	276.52
35	-20.25	75	47.15	115	75.17	155	103.72	195	132.53	235	161.47	275	190.47	315	219.45	355	248.38	395	277.25
36	-20.90	76	47.84	116	75.88	156	104.43	196	133.25	236	162.20	276	191.19	316	220.17	356	249.11	396	277.97
37	-21.55	77	48.53	117	76.59	157	105.15	197	133.97	237	162.92	277	191.92	317	220.90	357	249.83	397	278.69
38	-22.20	78	49.22	118	77.30	158	105.87	198	134.70	238	163.65	278	192.64	318	221.62	358	250.55	398	279.41
39	-22.86	79	49.92	119	78.01	159	106.59	199	135.42	239	164.37	279	193.36	319	222.34	359	251.27	399	280.13
40	-23.51	80	50.61	120	78.72	160	107.31	200	136.14	240	165.10	280	194.09	320	223.07	360	252.00	400	280.85

Table 14. Chronic Water Quality Standards for Dissolved Lead Aquatic and Wildlife coldwater, warmwater and edw

Hard. mg/L	Std. µg/L																		
1	-0.01	41	0.94	81	2.00	121	3.10	161	4.21	201	5.33	241	6.46	281	7.59	321	8.72	361	9.85
2	-0.03	42	0.97	82	2.03	122	3.12	162	4.24	202	5.36	242	6.49	282	7.62	322	8.75	362	9.88
3	-0.05	43	0.99	83	2.05	123	3.15	163	4.27	203	5.39	243	6.52	283	7.65	323	8.78	363	9.90
4	-0.07	44	1.02	84	2.08	124	3.18	164	4.29	204	5.42	244	6.55	284	7.68	324	8.81	364	9.93
5	-0.09	45	1.04	85	2.11	125	3.21	165	4.32	205	5.45	245	6.57	285	7.70	325	8.83	365	9.96
6	-0.11	46	1.07	86	2.13	126	3.23	166	4.35	206	5.47	246	6.60	286	7.73	326	8.86	366	9.99
7	-0.13	47	1.10	87	2.16	127	3.26	167	4.38	207	5.50	247	6.63	287	7.76	327	8.89	367	10.02
8	-0.15	48	1.12	88	2.19	128	3.29	168	4.41	208	5.53	248	6.66	288	7.79	328	8.92	368	10.05
9	-0.17	49	1.15	89	2.22	129	3.32	169	4.43	209	5.56	249	6.69	289	7.82	329	8.95	369	10.07
10	-0.19	50	1.17	90	2.24	130	3.34	170	4.46	210	5.59	250	6.72	290	7.85	330	8.97	370	10.10
11	-0.21	51	1.20	91	2.27	131	3.37	171	4.49	211	5.62	251	6.74	291	7.87	331	9.00	371	10.13
12	-0.24	52	1.23	92	2.30	132	3.40	172	4.52	212	5.64	252	6.77	292	7.90	332	9.03	372	10.16
13	-0.26	53	1.25	93	2.33	133	3.43	173	4.55	213	5.67	253	6.80	293	7.93	333	9.06	373	10.19
14	-0.28	54	1.28	94	2.35	134	3.46	174	4.57	214	5.70	254	6.83	294	7.96	334	9.09	374	10.21
15	-0.30	55	1.31	95	2.38	135	3.48	175	4.60	215	5.73	255	6.86	295	7.99	335	9.12	375	10.24
16	-0.33	56	1.33	96	2.41	136	3.51	176	4.63	216	5.76	256	6.89	296	8.02	336	9.14	376	10.27
17	-0.35	57	1.36	97	2.43	137	3.54	177	4.66	217	5.78	257	6.91	297	8.04	337	9.17	377	10.30
18	-0.37	58	1.38	98	2.46	138	3.57	178	4.69	218	5.81	258	6.94	298	8.07	338	9.20	378	10.33
19	-0.40	59	1.41	99	2.49	139	3.60	179	4.71	219	5.84	259	6.97	299	8.10	339	9.23	379	10.35
20	-0.42	60	1.44	100	2.52	140	3.62	180	4.74	220	5.87	260	7.00	300	8.13	340	9.26	380	10.38
21	-0.44	61	1.46	101	2.54	141	3.65	181	4.77	221	5.90	261	7.03	301	8.16	341	9.28	381	10.41
22	-0.47	62	1.49	102	2.57	142	3.68	182	4.80	222	5.93	262	7.05	302	8.18	342	9.31	382	10.44
23	-0.49	63	1.52	103	2.60	143	3.71	183	4.83	223	5.95	263	7.08	303	8.21	343	9.34	383	10.47
24	-0.52	64	1.54	104	2.63	144	3.73	184	4.85	224	5.98	264	7.11	304	8.24	344	9.37	384	10.49
25	0.54	65	1.57	105	2.65	145	3.76	185	4.88	225	6.01	265	7.14	305	8.27	345	9.40	385	10.52
26	0.57	66	1.60	106	2.68	146	3.79	186	4.91	226	6.04	266	7.17	306	8.30	346	9.43	386	10.55
27	0.59	67	1.62	107	2.71	147	3.82	187	4.94	227	6.07	267	7.20	307	8.33	347	9.45	387	10.58
28	0.61	68	1.65	108	2.74	148	3.85	188	4.97	228	6.09	268	7.22	308	8.35	348	9.48	388	10.61
29	0.64	69	1.68	109	2.76	149	3.87	189	5.00	229	6.12	269	7.25	309	8.38	349	9.51	389	10.64
30	0.66	70	1.70	110	2.79	150	3.90	190	5.02	230	6.15	270	7.28	310	8.41	350	9.54	390	10.66
31	0.69	71	1.73	111	2.82	151	3.93	191	5.05	231	6.18	271	7.31	311	8.44	351	9.57	391	10.69
32	0.71	72	1.76	112	2.85	152	3.96	192	5.08	232	6.21	272	7.34	312	8.47	352	9.59	392	10.72
33	0.74	73	1.78	113	2.87	153	3.99	193	5.11	233	6.24	273	7.37	313	8.50	353	9.62	393	10.75
34	0.76	74	1.81	114	2.90	154	4.01	194	5.14	234	6.26	274	7.39	314	8.52	354	9.65	394	10.78
35	0.79	75	1.84	115	2.93	155	4.04	195	5.16	235	6.29	275	7.42	315	8.55	355	9.68	395	10.80
36	0.81	76	1.86	116	2.96	156	4.07	196	5.19	236	6.32	276	7.45	316	8.58	356	9.71	396	10.83
37	0.84	77	1.89	117	2.98	157	4.10	197	5.22	237	6.35	277	7.48	317	8.61	357	9.74	397	10.86
38	0.87	78	1.92	118	3.01	158	4.13	198	5.25	238	6.38	278	7.51	318	8.64	358	9.76	398	10.89
39	0.89	79	1.95	119	3.04	159	4.15	199	5.28	239	6.41	279	7.54	319	8.66	359	9.79	399	10.92
40	0.92	80	1.97	120	3.07	160	4.18	200	5.31	240	6.43	280	7.56	320	8.69	360	9.82	400	10.94



Table 15: Acute Water Quality Standards for Dissolved Lead Aquatic and Wildlife ephemeral

Table with 20 columns (Hard. mg/L, Std. µg/L) and 40 rows of data for dissolved lead standards.

Table 16: Acute Water Quality Standards for Dissolved Nickel Aquatic and Wildlife coldwater, warmwater and edw

Table with 20 columns (Hard. mg/L, Std. µg/L) and 34 rows of data for dissolved nickel standards.



35	193	75	367	115	527	155	678	195	824	235	965	275	1102	315	1236	355	1368	395	1497
36	197	76	371	116	531	156	682	196	827	236	968	276	1105	316	1239	356	1371	396	1500
37	202	77	375	117	535	157	686	197	831	237	972	277	1109	317	1243	357	1374	397	1503
38	207	78	379	118	539	158	689	198	835	238	975	278	1112	318	1246	358	1377	398	1506
39	211	79	384	119	542	159	693	199	838	239	979	279	1115	319	1249	359	1381	399	1510
40	216	80	388	120	546	160	697	200	842	240	982	280	1119	320	1253	360	1384	400	1513

Table 17: Chronic Water Quality Standards for Dissolved Nickel Aquatic and Wildlife coldwater, warmwater and edw

Hard: mg/L	Std: µg/L																		
1	1.06	41	24.46	81	43.51	121	61.11	161	77.81	201	93.88	241	109.46	281	124.64	321	139.50	361	154.07
2	1.90	42	24.96	82	43.97	122	61.53	162	78.22	202	94.27	242	109.84	282	125.02	322	139.86	362	154.43
3	2.68	43	25.47	83	44.42	123	61.96	163	78.63	203	94.67	243	110.23	283	125.39	323	140.23	363	154.79
4	3.42	44	25.97	84	44.87	124	62.39	164	79.03	204	95.06	244	110.61	284	125.77	324	140.60	364	155.15
5	4.12	45	26.47	85	45.33	125	62.81	165	79.44	205	95.46	245	110.99	285	126.14	325	140.96	365	155.51
6	4.81	46	26.96	86	45.78	126	63.24	166	79.85	206	95.85	246	111.38	286	126.52	326	141.33	366	155.87
7	5.48	47	27.46	87	46.23	127	63.66	167	80.26	207	96.24	247	111.76	287	126.89	327	141.70	367	156.23
8	6.14	48	27.95	88	46.68	128	64.09	168	80.66	208	96.64	248	112.14	288	127.26	328	142.07	368	156.59
9	6.78	49	28.44	89	47.12	129	64.51	169	81.07	209	97.03	249	112.52	289	127.64	329	142.43	369	156.95
10	7.41	50	28.93	90	47.57	130	64.93	170	81.47	210	97.42	250	112.91	290	128.01	330	142.80	370	157.31
11	8.04	51	29.42	91	48.02	131	65.35	171	81.88	211	97.81	251	113.29	291	128.38	331	143.16	371	157.67
12	8.65	52	29.91	92	48.46	132	65.78	172	82.28	212	98.21	252	113.67	292	128.76	332	143.53	372	158.03
13	9.26	53	30.39	93	48.91	133	66.20	173	82.69	213	98.60	253	114.05	293	129.13	333	143.90	373	158.39
14	9.86	54	30.88	94	49.35	134	66.62	174	83.09	214	98.99	254	114.43	294	129.50	334	144.26	374	158.75
15	10.45	55	31.36	95	49.80	135	67.04	175	83.50	215	99.38	255	114.81	295	129.88	335	144.63	375	159.11
16	11.03	56	31.84	96	50.24	136	67.46	176	83.90	216	99.77	256	115.19	296	130.25	336	144.99	376	159.47
17	11.61	57	32.32	97	50.68	137	67.88	177	84.30	217	100.16	257	115.57	297	130.62	337	145.36	377	159.82
18	12.19	58	32.80	98	51.13	138	68.30	178	84.71	218	100.55	258	115.95	298	130.99	338	145.72	378	160.18
19	12.76	59	33.28	99	51.57	139	68.71	179	85.11	219	100.94	259	116.33	299	131.36	339	146.09	379	160.54
20	13.33	60	33.76	100	52.01	140	69.13	180	85.51	220	101.33	260	116.71	300	131.74	340	146.45	380	160.90
21	13.89	61	34.23	101	52.45	141	69.55	181	85.91	221	101.72	261	117.09	301	132.11	341	146.81	381	161.26
22	14.45	62	34.71	102	52.89	142	69.97	182	86.31	222	102.11	262	117.47	302	132.48	342	147.18	382	161.62
23	15.00	63	35.18	103	53.32	143	70.38	183	86.71	223	102.50	263	117.85	303	132.85	343	147.54	383	161.97
24	15.55	64	35.65	104	53.76	144	70.80	184	87.12	224	102.89	264	118.23	304	133.22	344	147.91	384	162.33
25	16.10	65	36.12	105	54.20	145	71.22	185	87.52	225	103.28	265	118.61	305	133.59	345	148.27	385	162.69
26	16.64	66	36.59	106	54.63	146	71.63	186	87.92	226	103.67	266	118.99	306	133.96	346	148.63	386	163.05
27	17.18	67	37.06	107	55.07	147	72.05	187	88.32	227	104.05	267	119.37	307	134.33	347	149.00	387	163.40
28	17.72	68	37.53	108	55.51	148	72.46	188	88.71	228	104.44	268	119.75	308	134.70	348	149.36	388	163.76
29	18.25	69	37.99	109	55.94	149	72.87	189	89.11	229	104.83	269	120.12	309	135.07	349	149.72	389	164.12
30	18.78	70	38.46	110	56.37	150	73.29	190	89.51	230	105.22	270	120.50	310	135.44	350	150.09	390	164.47
31	19.31	71	38.92	111	56.81	151	73.70	191	89.91	231	105.60	271	120.88	311	135.81	351	150.45	391	164.83
32	19.83	72	39.39	112	57.24	152	74.11	192	90.31	232	105.99	272	121.26	312	136.18	352	150.81	392	165.19
33	20.36	73	39.85	113	57.67	153	74.53	193	90.71	233	106.38	273	121.63	313	136.55	353	151.17	393	165.54
34	20.88	74	40.31	114	58.10	154	74.94	194	91.10	234	106.76	274	122.01	314	136.92	354	151.54	394	165.90
35	21.40	75	40.77	115	58.53	155	75.35	195	91.50	235	107.15	275	122.39	315	137.29	355	151.90	395	166.26
36	21.91	76	41.23	116	58.96	156	75.76	196	91.90	236	107.53	276	122.76	316	137.66	356	152.26	396	166.61
37	22.43	77	41.69	117	59.39	157	76.17	197	92.29	237	107.92	277	123.14	317	138.02	357	152.62	397	166.97
38	22.94	78	42.15	118	59.82	158	76.58	198	92.69	238	108.30	278	123.52	318	138.39	358	152.98	398	167.32
39	23.45	79	42.60	119	60.25	159	76.99	199	93.09	239	108.69	279	123.89	319	138.76	359	153.34	399	167.68
40	23.96	80	43.06	120	60.68	160	77.40	200	93.48	240	109.07	280	124.27	320	139.13	360	153.71	400	168.04

Table 18: Acute Water Quality Standards for Dissolved Nickel Aquatic and Wildlife ephemeral

Hard: mg/L	Std: µg/L																		
1	85	41	1956	81	3479	121	4886	161	6221	201	7506	241	8752	281	9966	321	11154	361	12319
2	152	42	1996	82	3516	122	4920	162	6254	202	7538	242	8783	282	9996	322	11183	362	12348
3	214	43	2036	83	3552	123	4954	163	6287	203	7569	243	8813	283	10026	323	11213	363	12377
4	273	44	2076	84	3588	124	4988	164	6319	204	7601	244	8844	284	10056	324	11242	364	12405
5	330	45	2116	85	3624	125	5022	165	6352	205	7632	245	8875	285	10086	325	11271	365	12434
6	385	46	2156	86	3660	126	5056	166	6385	206	7664	246	8905	286	10116	326	11301	366	12463
7	438	47	2195	87	3696	127	5090	167	6417	207	7695	247	8936	287	10146	327	11330	367	12492
8	491	48	2235	88	3732	128	5124	168	6450	208	7727	248	8967	288	10176	328	11359	368	12521
9	542	49	2274	89	3768	129	5158	169	6482	209	7758	249	8997	289	10206	329	11389	369	12550
10	593	50	2313	90	3804	130	5192	170	6514	210	7790	250	9028	290	10235	330	11418	370	12578
11	643	51	2352	91	3839	131	5226	171	6547	211	7821	251	9058	291	10265	331	11447	371	12607
12	692	52	2391	92	3875	132	5259	172	6579	212	7852	252	9089	292	10295	332	11476	372	12636
13	740	53	2430	93	3911	133	5293	173	6612	213	7884	253	9119	293	10325	333	11506	373	12664
14	788	54	2469	94	3946	134	5327	174	6644	214	7915	254	9150	294	10355	334	11535	374	12693
15	835	55	2508	95	3982	135	5360	175	6676	215	7946	255	9180	295	10385	335	11564	375	12722
16	882	56	2546	96	4017	136	5394	176	6708	216	7978	256	9211	296	10414	336	11593	376	12751
17	929	57	2585	97	4053	137	5427	177	6741	217	8009	257	9241	297	10444	337	11622	377	12779
18	975	58	2623	98	4088	138	5461	178	6773	218	8040	258	9272	298	10474	338	11652	378	12808
19	1020	59	2																



23	1199	63	2813	103	4264	143	5628	183	6934	223	8196	263	9423	303	10622	343	11797	383	12951
24	1243	64	2851	104	4299	144	5661	184	6966	224	8227	264	9454	304	10652	344	11826	384	12980
25	1287	65	2888	105	4324	145	5694	185	6998	225	8258	265	9484	305	10682	345	11855	385	13008
26	1330	66	2926	106	4368	146	5727	186	7030	226	8289	266	9514	306	10711	346	11884	386	13037
27	1374	67	2963	107	4403	147	5761	187	7062	227	8320	267	9544	307	10741	347	11913	387	13065
28	1416	68	3001	108	4438	148	5794	188	7093	228	8351	268	9575	308	10770	348	11943	388	13094
29	1459	69	3038	109	4473	149	5827	189	7125	229	8382	269	9605	309	10800	349	11972	389	13123
30	1502	70	3075	110	4508	150	5860	190	7157	230	8413	270	9635	310	10830	350	12001	390	13151
31	1544	71	3112	111	4542	151	5893	191	7189	231	8444	271	9665	311	10859	351	12030	391	13180
32	1586	72	3149	112	4577	152	5926	192	7221	232	8475	272	9695	312	10889	352	12059	392	13208
33	1628	73	3186	113	4611	153	5959	193	7253	233	8506	273	9726	313	10918	353	12088	393	13237
34	1669	74	3223	114	4646	154	5992	194	7285	234	8536	274	9756	314	10948	354	12116	394	13265
35	1711	75	3260	115	4680	155	6025	195	7316	235	8567	275	9786	315	10977	355	12145	395	13294
36	1752	76	3297	116	4715	156	6058	196	7348	236	8598	276	9816	316	11007	356	12174	396	13322
37	1793	77	3333	117	4749	157	6090	197	7380	237	8629	277	9846	317	11036	357	12203	397	13350
38	1834	78	3370	118	4783	158	6123	198	7411	238	8660	278	9876	318	11066	358	12232	398	13379
39	1875	79	3407	119	4818	159	6156	199	7443	239	8691	279	9906	319	11095	359	12261	399	13407
40	1915	80	3443	120	4852	160	6189	200	7475	240	8721	280	9936	320	11124	360	12290	400	13436

Table 19. Water Quality Standards for Dissolved Silver Aquatic and Wildlife coldwater, warmwater, edw, and ephemeral

Hard. mg/L	Std. µg/L																		
1	0.001	41	0.69	81	2.24	121	4.46	161	7.30	201	10.69	241	14.60	281	19.02	321	23.91	361	29.26
2	0.004	42	0.72	82	2.29	122	4.53	162	7.38	202	10.78	242	14.71	282	19.14	322	24.04	362	29.40
3	0.01	43	0.75	83	2.33	123	4.59	163	7.45	203	10.87	243	14.81	283	19.25	323	24.17	363	29.54
4	0.01	44	0.78	84	2.38	124	4.66	164	7.53	204	10.96	244	14.92	284	19.37	324	24.30	364	29.68
5	0.02	45	0.81	85	2.43	125	4.72	165	7.61	205	11.06	245	15.02	285	19.49	325	24.43	365	29.82
6	0.03	46	0.85	86	2.48	126	4.79	166	7.69	206	11.15	246	15.13	286	19.61	326	24.56	366	29.96
7	0.03	47	0.88	87	2.53	127	4.85	167	7.77	207	11.24	247	15.24	287	19.72	327	24.69	367	30.11
8	0.04	48	0.91	88	2.58	128	4.92	168	7.85	208	11.34	248	15.34	288	19.84	328	24.82	368	30.25
9	0.05	49	0.94	89	2.63	129	4.98	169	7.93	209	11.43	249	15.45	289	19.96	329	24.95	369	30.39
10	0.06	50	0.98	90	2.68	130	5.05	170	8.01	210	11.52	250	15.56	290	20.08	330	25.08	370	30.53
11	0.07	51	1.01	91	2.74	131	5.12	171	8.09	211	11.62	251	15.66	291	20.20	331	25.21	371	30.67
12	0.08	52	1.04	92	2.79	132	5.19	172	8.18	212	11.71	252	15.77	292	20.32	332	25.34	372	30.81
13	0.10	53	1.08	93	2.84	133	5.25	173	8.26	213	11.81	253	15.88	293	20.44	333	25.47	373	30.96
14	0.11	54	1.11	94	2.89	134	5.32	174	8.34	214	11.91	254	15.99	294	20.56	334	25.60	374	31.10
15	0.12	55	1.15	95	2.95	135	5.39	175	8.42	215	12.00	255	16.09	295	20.68	335	25.73	375	31.24
16	0.14	56	1.19	96	3.00	136	5.46	176	8.51	216	12.10	256	16.20	296	20.80	336	25.87	376	31.39
17	0.15	57	1.22	97	3.05	137	5.53	177	8.59	217	12.19	257	16.31	297	20.92	337	26.00	377	31.53
18	0.17	58	1.26	98	3.11	138	5.60	178	8.67	218	12.29	258	16.42	298	21.04	338	26.13	378	31.67
19	0.18	59	1.30	99	3.16	139	5.67	179	8.76	219	12.39	259	16.53	299	21.16	339	26.26	379	31.82
20	0.20	60	1.34	100	3.22	140	5.74	180	8.84	220	12.48	260	16.64	300	21.28	340	26.40	380	31.96
21	0.22	61	1.37	101	3.27	141	5.81	181	8.93	221	12.58	261	16.75	301	21.41	341	26.53	381	32.11
22	0.24	62	1.41	102	3.33	142	5.88	182	9.01	222	12.68	262	16.86	302	21.53	342	26.67	382	32.25
23	0.26	63	1.45	103	3.38	143	5.95	183	9.10	223	12.78	263	16.97	303	21.65	343	26.80	383	32.40
24	0.28	64	1.49	104	3.44	144	6.02	184	9.18	224	12.88	264	17.08	304	21.78	344	26.93	384	32.54
25	0.30	65	1.53	105	3.50	145	6.09	185	9.27	225	12.98	265	17.19	305	21.90	345	27.07	385	32.69
26	0.32	66	1.57	106	3.56	146	6.17	186	9.35	226	13.08	266	17.31	306	22.02	346	27.20	386	32.84
27	0.34	67	1.62	107	3.61	147	6.24	187	9.44	227	13.18	267	17.42	307	22.15	347	27.34	387	32.98
28	0.36	68	1.66	108	3.67	148	6.31	188	9.53	228	13.28	268	17.53	308	22.27	348	27.47	388	33.13
29	0.38	69	1.70	109	3.73	149	6.39	189	9.61	229	13.38	269	17.64	309	22.39	349	27.61	389	33.28
30	0.41	70	1.74	110	3.79	150	6.46	190	9.70	230	13.48	270	17.76	310	22.52	350	27.75	390	33.42
31	0.43	71	1.78	111	3.85	151	6.54	191	9.79	231	13.58	271	17.87	311	22.64	351	27.88	391	33.57
32	0.45	72	1.83	112	3.91	152	6.61	192	9.88	232	13.68	272	17.98	312	22.77	352	28.02	392	33.72
33	0.48	73	1.87	113	3.97	153	6.68	193	9.97	233	13.78	273	18.10	313	22.90	353	28.16	393	33.87

34	0.50	74	1.92	114	4.03	154	6.76	194	10.06	234	13.88	274	18.21	314	23.02	354	28.29	394	34.02
35	0.53	75	1.96	115	4.09	155	6.84	195	10.15	235	13.98	275	18.33	315	23.15	355	28.43	395	34.16
36	0.55	76	2.01	116	4.15	156	6.91	196	10.24	236	14.09	276	18.44	316	23.27	356	28.57	396	34.31
37	0.58	77	2.05	117	4.21	157	6.99	197	10.33	237	14.19	277	18.56	317	23.40	357	28.71	397	34.46
38	0.61	78	2.10	118	4.28	158	7.06	198	10.42	238	14.29	278	18.67	318	23.53	358	28.85	398	34.61
39	0.64	79	2.14	119	4.34	159	7.14	199	10.51	239	14.40	279	18.79	319	23.66	359	28.99	399	34.76
40	0.67	80	2.19	120	4.40	160	7.22	200	10.60	240	14.50	280	18.90	320	23.78	360	29.12	400	34.91

Table 20. Acute and Chronic Water Quality Standards for Dissolved Zinc Aquatic and Wildlife coldwater, warmwater and edw

Hard. mg/L	Std. µg/L																		
1	2.4	41	55.1	81	98.0	121	137.7	161	175.4	201	211.7	241	246.9	281	281.2	321	314.8	361	347.7
2	4.3	42	56.2	82	99.0	122	138.7	162	176.4	202	212.6	242	247.8	282	282.1	322	315.6	362	348.5
3	6.0	43	57.3	83	100.1	123	139.6	163	177.3	203	213.5	243	248.6	283	282.9	323	316.4	363	349.4
4	7.7	44	58.4	84	101.1	124	140.6	164	178.2	204	214.4	244	249.5	284	283.8	324	317.3	364	350.2
5	9.3	45	59.6	85	102.1	125	141.6	165	179.1	205	215.3	245	250.4	285	284.6	325	318.1	365	351.0
6	10.8	46	60.7	86	103.1	126	142.5	166	180.0	206	216.2	246	251.2	286	285.5	326	318.9	366	351.8
7	12.3	47	61.8	87	104.1	127	143.5	167	181.0	207	217.1	247	252.1	287	286.3	327	319.8	367	352.6
8	13.8	48	62.9	88	105.2	128	144.4	168	181.9	208	217.9	248	253.0	288	287.1	328	320.6	368	353.4
9	15.2	49	64.0	89	106.2	129	145.4	169	182.8	209	218.8	249	253.8	289	288.0	329	321.4	369	354.2
10	16.7	50	65.1	90	107.2	130	146.4	170	183.7	210	219.7	250	254.7	290	288.8	330	322.2	370	355.1
11	18.1	51	66.2	91	108.2	131	147.3	171	184.6	211	220.6	251	255.6	291	289.7	331	323.1	371	355.9
12	19.4	52	67.3	92	109.2	132	148.3	172	185.5	212	221.5	252	256.4	292	290.5	332	323.9	372	356.7
13	20.8	53	68.4	93	110.2	133	149.2	173	186.4	213	222.4	253	257.3	293	291.4	333	324.7	373	357.5
14	22.1	54	69.5	94	111.2	134	150.2	174	187.4	214	223.3	254	258.1	294	292.2	334	325.6	374	358.3
15	23.5	55	70.6	95	112.2	135	151.1	175	188.3	215	224.1	255	259.0	295	293.0	335	326.4	375	359.1
16	24.8	56	71.7	96	113.2	136	152.1	176	189.2	216	225.0	256	259.9	296	293.9	336	327.2	376	359.9
17	26.1	57	72.8	97	114.2	137	153.0	177	190.1	217	225.9	257	260.7	297	294.7	337	328.0	377	360.7
18	27.4	58	73.9	98	115.2	138	153.9	178	191.0	218	226.8	258	261.6	298	295.6	338	328.9	378	361.5
19	28.7	59	74.9	99	116.2	139	154.9	179	191.9	219	227.7	259	262.4	299	296.4	339	329.7	379	362.4
20	30.0	60	76.0	100	117.2	140	155.8	180	192.8	220	228.6	260	263.3	300	297.2	340	330.5	380	363.2
21	31.2	61	77.1	101	118.2	141	156.8	181	193.7	221	229.4	261	264.2	301	298.1	341	331.3	381	364.0
22	32.5	62	78.2	102	119.2	142	157.7	182	194.6	222	230.3	262	265.0	302	298.9	342	332.2	382	364.8
23	33.7	63	79.2	103	120.2	143	158.7	183	195.5	223	231.2	263	265.9	303	299.8	343	333.0	383	365.6
24	35.0	64	80.3	104	121.1	144	159.6	184	196.4	224	232.1	264	266.7	304	300.6	344	333.8	384	366.4
25	36.2	65	81.3	105	122.1	145	160.5	185	197.3	225	232.9	265	267.6	305	301.4	345	334.6	385	367.2
26	37.4	66	82.4	106	123.1	146	161.5	186	198.3	226	233.8	266	268.4	306	302.3	346	335.4	386	368.0
27	38.6	67	83.5	107	124.1	147	162.4	187	199.2	227	234.7	267	269.3	307	303.1	347	336.3	387	368.8
28	39.9	68	84.5	108	125.1	148	163.3	188	200.1	228	235.6	268	270.2	308	304.0	348	337.1	388	369.6
29	41.1	69	85.6	109	126.1	149	164.3	189	201.0	229	236.5	269	271.0	309	304.8	349	337.9	389	370.4
30	42.2	70	86.6	110	127.0	150	165.2	190	201.9	230	237.3	270	271.9	310	305.6	350	338.7	390	371.2
31	43.4	71	87.7	111	128.0	151	166.2	191	202.8	231	238.2	271	272.7	311	306.5	351	339.5	391	372.1
32	44.6	72	88.7	112	129.0	152	167.1	192	203.7	232	239.1	272	273.6	312	307.3	352	340.4	392	372.9
33	45.8	73	89.8	113	130.0	153	168.0	193	204.6	233	239.9	273	274.4	313	308.1	353	341.2	393	373.7
34	47.0	74	90.8	114	130.9	154	168.9	194	205.5	234	240.8	274	275.3	314	309.0	354	342.0	394	374.5
35	48.1	75	91.8	115	131.9	155	169.9	195	206.3	235	241.7	275	276.1	315	309.8	355	342.8	395	375.3
36	49.3	76	92.9	116	132.9	156	170.8	196	207.2	236	242.6	276	277.0	316	310.6	356	343.6	396	376.1
37	50.5	77	93.9	117	133.9	157	171.7	197	208.1	237	243.4	277	277.8	317	311.5	357	344.5	397	376.9
38	51.6	78	94.9	118	134.8	158	172.7	198	209.0	238	244.3	278	278.7	318	312.3	358	345.3	398	377.7
39	52.8	79	96.0	119	135.8	159	173.6	199	209.9	239	245.2	279	279.5	319	313.1	359	346.1	399	378.5
40	53.9	80	97.0	120	136.8	160	174.5	200	210.8	240	246.0	280	280.4	320	314.0	360	346.9	400	379.3

Table 21. Acute Water Quality Standards for Dissolved Zinc Aquatic and Wildlife ephemeral

Hard. mg/L	Std. µg/L																		
1	22	41	522	81	930	121	1307	161	1665	201	2009	241	2343	281	2669	321	2987	361	3300
2	40	42	533	82	940	122	1316	162	1674	202	2018	242	2351	282	2677	322	2995	362	3307
3	57	43	544	83	950	123	1325	163	1682	203	2026	243	2360	283	2685	323	3003	363	3315
4	73	44	555	84	959	124	1334	164	1691	204	2034	244	2368	284	2693	324	3011	364	3323
5	88	45	565	85	969	125	1343	165	1700	205	2043	245	2376	285	2701	325	3019	365	3331
6	103	46	576	86	979	126	1352	166	1708	206	2051	246	2384	286	2709	326	3027	366	3338
7	117	47	587	87	988	127	1362	167	1717	207	2060	247	2392	287	2717	327	3034	367	3346
8	131	48	597	88	998	128	1371	168	1726	208	2068	248	2401	288	2725	328	3042	368	3354
9	145	49	608	89	1007	129	1380	169	1735	209	2077	249	2409	289	2733	329	3050	369	3362



10	158	50	618	90	1017	130	1389	170	1743	210	2085	250	2417	290	2741	330	3058	370	3369
11	171	51	629	91	1027	131	1398	171	1752	211	2093	251	2428	291	2749	331	3066	371	3377
12	184	52	639	92	1036	132	1407	172	1764	212	2102	252	2433	292	2757	332	3074	372	3385
13	197	53	649	93	1046	133	1416	173	1769	213	2110	253	2442	293	2765	333	3082	373	3392
14	210	54	660	94	1055	134	1425	174	1778	214	2119	254	2450	294	2773	334	3089	374	3400
15	223	55	670	95	1065	135	1434	175	1787	215	2127	255	2458	295	2781	335	3097	375	3408
16	235	56	680	96	1074	136	1443	176	1795	216	2135	256	2466	296	2789	336	3105	376	3416
17	248	57	691	97	1084	137	1452	177	1804	217	2144	257	2474	297	2797	337	3113	377	3423
18	260	58	701	98	1093	138	1461	178	1813	218	2152	258	2482	298	2805	338	3121	378	3431
19	272	59	711	99	1103	139	1470	179	1821	219	2161	259	2491	299	2813	339	3129	379	3439
20	284	60	721	100	1112	140	1479	180	1830	220	2169	260	2499	300	2821	340	3136	380	3446
21	296	61	732	101	1121	141	1488	181	1838	221	2177	261	2507	301	2829	341	3144	381	3454
22	308	62	742	102	1131	142	1497	182	1847	222	2186	262	2515	302	2837	342	3152	382	3462
23	320	63	752	103	1140	143	1506	183	1856	223	2194	263	2523	303	2845	343	3160	383	3469
24	332	64	762	104	1150	144	1515	184	1864	224	2202	264	2531	304	2853	344	3168	384	3477
25	344	65	772	105	1159	145	1523	185	1873	225	2211	265	2539	305	2861	345	3175	385	3485
26	355	66	782	106	1168	146	1532	186	1881	226	2219	266	2547	306	2869	346	3183	386	3492
27	367	67	792	107	1178	147	1541	187	1890	227	2227	267	2556	307	2876	347	3191	387	3500
28	378	68	802	108	1187	148	1550	188	1898	228	2236	268	2564	308	2884	348	3199	388	3508
29	390	69	812	109	1196	149	1559	189	1907	229	2244	269	2572	309	2892	349	3207	389	3515
30	401	70	822	110	1206	150	1568	190	1916	230	2252	270	2580	310	2900	350	3214	390	3523
31	412	71	832	111	1215	151	1577	191	1924	231	2260	271	2588	311	2908	351	3222	391	3531
32	423	72	842	112	1224	152	1586	192	1933	232	2269	272	2596	312	2916	352	3230	392	3538
33	435	73	852	113	1233	153	1594	193	1941	233	2277	273	2604	313	2924	353	3238	393	3546
34	446	74	862	114	1243	154	1603	194	1950	234	2285	274	2612	314	2932	354	3245	394	3554
35	457	75	871	115	1252	155	1612	195	1958	235	2294	275	2620	315	2940	355	3253	395	3561
36	468	76	881	116	1261	156	1621	196	1967	236	2302	276	2628	316	2948	356	3261	396	3569
37	479	77	891	117	1270	157	1630	197	1975	237	2310	277	2636	317	2956	357	3269	397	3577
38	490	78	901	118	1279	158	1638	198	1984	238	2318	278	2645	318	2964	358	3276	398	3584
39	501	79	911	119	1289	159	1647	199	1992	239	2327	279	2653	319	2971	359	3284	399	3592
40	512	80	920	120	1298	160	1656	200	2001	240	2335	280	2661	320	2979	360	3292	400	3599

Table 22. Acute Water Quality Standards for Pentachlorophenol-Aquatic and Wildlife coldwater, warmwater, and edw

pH	µg/L	pH	µg/L
3	0.163	7	9.070
3-1	0.180	7-1	10.029
3-2	0.199	7-2	11.090
3-3	0.220	7-3	12.262
3-4	0.243	7-4	13.558
3-5	0.269	7-5	14.992
3-6	0.298	7-6	16.577
3-7	0.329	7-7	18.329
3-8	0.364	7-8	20.267
3-9	0.402	7-9	22.410
4	0.445	8	24.779
4-1	0.492	8-1	27.399
4-2	0.544	8-2	30.296
4-3	0.601	8-3	33.498
4-4	0.665	8-4	37.040
4-5	0.735	8-5	40.956
4-6	0.813	8-6	45.286
4-7	0.899	8-7	50.074
4-8	0.994	8-8	55.368
4-9	1.099	8-9	61.222
5	1.215	9	67.694
5-1	1.344	9-1	74.851
5-2	1.486	9-2	82.765
5-3	1.643	9-3	91.515
5-4	1.817	9-4	101.190
5-5	2.009	9-5	111.888
5-6	2.221	9-6	123.717
5-7	2.456	9-7	136.797
5-8	2.716	9-8	151.260
5-9	3.003	9-9	167.252
6	3.320	10	184.934
6-1	3.671	10-1	204.486
6-2	4.059	10-2	226.105
6-3	4.488	10-3	250.010
6-4	4.963	10-4	276.442
6-5	5.488	10-5	305.668
6-6	6.068	10-6	337.984
6-7	6.709	10-7	373.717
6-8	7.419	10-8	413.228
6-9	8.203	10-9	456.916
		11	505.223

Table 23. Chronic Water Quality Standards for Pentachlorophenol-Aquatic and Wildlife coldwater, warmwater, and edw

pH	µg/L	pH	µg/L
3	0.103	7	5.726
3-1	0.114	7-1	6.331
3-2	0.126	7-2	7.001
3-3	0.139	7-3	7.741
3-4	0.154	7-4	8.559
3-5	0.170	7-5	9.464
3-6	0.188	7-6	10.465
3-7	0.208	7-7	11.571
3-8	0.230	7-8	12.794
3-9	0.254	7-9	14.147
4	0.281	8	15.643
4-1	0.311	8-1	17.296
4-2	0.343	8-2	19.125
4-3	0.380	8-3	21.147
4-4	0.420	8-4	23.383
4-5	0.464	8-5	25.855
4-6	0.513	8-6	28.588
4-7	0.568	8-7	31.611
4-8	0.628	8-8	34.953
4-9	0.694	8-9	38.648
5	0.767	9	42.734
5-1	0.848	9-1	47.252
5-2	0.938	9-2	52.248
5-3	1.037	9-3	57.772
5-4	1.147	9-4	63.880
5-5	1.268	9-5	70.623
5-6	1.4022	9-6	78.101
5-7	1.550	9-7	86.358
5-8	1.714	9-8	95.488
5-9	1.896	9-9	105.583
6	2.096	10	116.746
6-1	2.318	10-1	129.089
6-2	2.563	10-2	142.736
6-3	2.833	10-3	157.827
6-4	3.133	10-4	174.513
6-5	3.464	10-5	192.963
6-6	3.831	10-6	213.364
6-7	4.235	10-7	235.922
6-8	4.683	10-8	260.864
6-9	5.178	10-9	288.444
		11	318.939

Table 24. Acute Water Quality Standards for Pentachlorophenol-Aquatic and Wildlife ephemeral

pH	µg/L	pH	µg/L
3	0.660	7	36.760
3-1	0.730	7-1	40.646
3-2	0.807	7-2	44.943
3-3	0.892	7-3	49.695
3-4	0.986	7-4	54.949
3-5	1.091	7-5	60.758
3-6	1.206	7-6	67.182
3-7	1.334	7-7	74.284
3-8	1.475	7-8	82.138
3-9	1.631	7-9	90.822
4	1.803	8	100.424
4-1	1.994	8-1	111.041
4-2	2.204	8-2	122.781
4-3	2.437	8-3	135.762
4-4	2.695	8-4	150.115
4-5	2.980	8-5	165.985
4-6	3.295	8-6	183.534
4-7	3.643	8-7	202.938
4-8	4.029	8-8	224.393
4-9	4.454	8-9	248.117
5	4.925	9	274.349
5-1	5.446	9-1	303.354
5-2	6.022	9-2	335.426
5-3	6.659	9-3	370.888
5-4	7.363	9-4	410.100
5-5	8.141	9-5	453.457
5-6	9.002	9-6	501.398
5-7	9.953	9-7	554.408
5-8	11.006	9-8	613.021
5-9	12.169	9-9	677.832
6	13.456	10	749.495
6-1	14.878	10-1	828.735
6-2	16.451	10-2	916.351
6-3	18.191	10-3	1013.231
6-4	20.114	10-4	1120.354
6-5	22.240	10-5	1238.802
6-6	24.591	10-6	1369.773
6-7	27.191	10-7	1514.590
6-8	30.066	10-8	1674.718
6-9	33.245	10-9	1851.775
		11	2047.552



Table 25 11. Acute Criteria for Total Ammonia (in mg/L as N) Aquatic and Wildlife coldwater, warmwater, and edw

pH	A&Wc	A&Ww and A&W edw
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65 9.7	14.4
7.8	8.11 8.1	12.1
7.9	6.77 6.8	10.1
8.0	5.62 5.6	8.40 8.4
8.1	4.64 4.6	6.95 7.0
8.2	3.83 3.8	5.72 5.7
8.3	3.15 3.2	4.71 4.7
8.4	2.59 2.6	3.88 3.9
8.5	2.14 2.1	3.20 3.2
8.6	1.77 1.8	2.65 2.7
8.7	1.47 1.5	2.20 2.2
8.8	1.23 1.2	1.84 1.8
8.9	1.04 1.0	1.56 1.6
9.0	0.885 0.9	1.32 1.3
Formula:	$\frac{CM}{C} = \frac{0.275}{1+10^{7.204-pH}} \pm \frac{39.0}{1+10^{pH-}}$	$CMC = \frac{0.411}{1+10^{7.204-pH}} \pm \frac{58.4}{1+10^{pH-}}$

Table 26 12. Chronic Criteria for Total Ammonia (mg/L as N) Aquatic and Wildlife coldwater, warmwater, and edw

pH	Temperature, °C									
	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.33	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03



8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

pH	Temperature, °C									
	0	14	16	18	20	22	24	26	28	30
6.5	6.7	6.7	6.1	5.3	4.7	4.1	3.6	3.2	2.8	2.5
6.6	6.6	6.6	6.0	5.3	4.6	4.1	3.6	3.1	2.8	2.4
6.7	6.4	6.4	5.9	5.2	4.5	4.0	3.5	3.1	2.7	2.4
6.8	6.3	6.3	5.7	5.0	4.4	3.9	3.4	3.0	2.6	2.3
6.9	6.1	6.1	5.6	4.9	4.3	3.8	3.3	2.9	2.6	2.3
7.0	5.9	5.9	5.4	4.7	4.2	3.6	3.2	2.8	2.5	2.2
7.1	5.7	5.7	5.2	4.5	4.0	3.5	3.1	2.7	2.4	2.1
7.2	5.4	5.4	4.9	4.3	3.8	3.3	2.9	2.6	2.3	2.0
7.3	5.1	5.1	4.6	4.1	3.6	3.1	2.8	2.4	2.1	1.9
7.4	4.7	4.7	4.3	3.8	3.3	2.9	2.6	2.3	2.0	1.7
7.5	4.4	4.4	4.0	3.5	3.1	2.7	2.4	2.1	1.8	1.6
7.6	4.0	4.0	3.6	3.2	2.8	2.5	2.2	1.9	1.7	1.5
7.7	3.6	3.6	3.3	2.9	2.5	2.2	1.9	1.7	1.5	1.3
7.8	3.1	3.2	2.9	2.5	2.2	2.0	1.7	1.5	1.3	1.2
7.9	2.8	2.8	2.5	2.2	2.0	1.7	1.5	1.3	1.2	1.0
8.0	2.4	2.4	2.2	1.9	1.7	1.5	1.3	1.2	1.0	0.90
8.1	2.1	2.1	1.9	1.7	1.5	1.3	1.1	1.0	0.88	0.77
8.2	1.8	1.8	1.6	1.4	1.3	1.1	0.97	0.86	0.75	0.66
8.3	1.5	1.5	1.4	1.2	1.1	0.94	0.83	0.73	0.64	0.56
8.4	1.3	1.3	1.2	1.0	0.91	0.80	0.70	0.62	0.54	0.48
8.5	1.1	1.1	1.0	0.90	0.77	0.67	0.59	0.52	0.46	0.40
8.6	0.92	0.92	0.84	0.74	0.65	0.57	0.50	0.44	0.37	0.34
8.7	0.78	0.78	0.71	0.62	0.55	0.48	0.42	0.37	0.33	0.29
8.8	0.66	0.66	0.60	0.53	0.46	0.41	0.36	0.32	0.28	0.24
8.9	0.57	0.57	0.51	0.45	0.40	0.35	0.31	0.27	0.24	0.21
9.0	0.49	0.49	0.44	0.39	0.34	0.30	0.26	0.23	0.20	0.18

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} \pm \frac{2.487}{1+10^{pH-2.487}} \right) - \text{MIN}(2.85, 1.45 \cdot 10^{0.028 \cdot (25-T)})$$



Appendix B. Surface Waters and Designated Uses

(Coordinates are from the North American Datum of 1983 (NAD83). All latitudes in Arizona are north and all longitudes are west, but the negative signs are not included in the Appendix B table. Some web-based mapping systems require a negative sign before the longitude values to indicate it is a west longitude.)

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife				Human Health				Agricultural	
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
BW	Alamo Lake	34°14'45"/113°35'00" 34°14'06"/113°35'00"	Deep		A&Ww			FBC			FC		AgL
BW	Big Sandy River	Headwaters to confluence at Alamo Lake at 34°18'36"/113°31'34"			A&Ww			FBC			FC		AgL
BW	Bill Williams River	Alamo Lake to confluence with Colorado River at 34°18'04"/114°08'10"			A&Ww			FBC			FC		AgL
BW	Blue Tank	34°40'14"/112°58'16" 34°40'14"/112°58'17"			A&Ww			FBC			FC		AgL
BW	Boulder Creek	Headwaters to confluence with unnamed tributary at 34°41'14"/113°03'34" 34°41'13"/113°03'37"		A&Wc				FBC			FC	AgI	AgL
BW	Boulder Creek	Below confluence with unnamed tributary to confluence with Burro Creek at 34°36'47"/113°18'00"			A&Ww			FBC			FC	AgI	AgL
BW	Burro Creek (OAW)	Headwaters to confluence with Boulder Creek at 34°36'47"/113°18'00"			A&Ww			FBC			FC		AgL
BW	Burro Creek	Below confluence with Boulder Creek to confluence with Big Sandy River at 34°32'24"/113°34'19.2"			A&Ww			FBC			FC		AgL
BW	Carter Tank	34°52'27"/112°57'31"			A&Ww			FBC			FC		AgL
BW	Conger Creek	Headwaters to confluence with unnamed tributary at 34°45'13"/113°05'45" 34°45'15"/113°05'46"		A&Wc				FBC			FC		AgL
BW	Conger Creek	Below confluence with unnamed tributary to confluence with Burro Creek at 34°46'05"/113°12'54"			A&Ww			FBC			FC		AgL
BW	Coors Lake	34°26'20"/113°11'25"	Igneous		A&Ww			FBC			FC		
BW	Copper Basin Wash	Headwaters to confluence with unnamed tributary at 34°28'11"/112°35'31" 34°28'12"/112°35'33"		A&Wc				FBC			FC		AgL
BW	Copper Basin Wash	Below confluence with unnamed tributary to confluence with Skull Valley Wash at 34°28'55"/112°41'42"				A&We			PBC				AgL
BW	Cottonwood Canyon	Headwaters to Bear Trap Spring at 34°45'40"/112°52'32"		A&Wc				FBC			FC		AgL
BW	Cottonwood Canyon	Below Bear Trap Spring to confluence at Smith Canyon at 34°37'34"/112°54'46.8"			A&Ww			FBC			FC		AgL
BW	Date Creek	Headwaters to confluence with Santa Maria River at 34°41'11"/113°29'53"			A&Ww			FBC			FC		AgL
BW	Francis Creek (OAW)	Headwaters to confluence with Burro Creek at 34°44'28"/113°14'25"			A&Ww			FBC		DWS	FC	AgI	AgL
BW	Kirkland Creek	Headwaters to confluence with Santa Maria River at 34°22'02"/112°59'38"			A&Ww			FBC			FC	AgI	AgL
BW	Knight Creek	Headwaters to confluence with Big Sandy River at 34°55'16"/113°37'30"			A&Ww			FBC			FC		AgL
BW	Peeples Canyon (OAW)	Headwaters to confluence with Santa Maria River at 34°20'25"/113°15'11"			A&Ww			FBC			FC		AgL
BW	Red Lake	35°12'18"/113°03'57"	Sedimentary		A&Ww			FBC			FC		AgL
BW	Santa Maria River	Headwaters to confluence with Alamo Lake at 34°18'36"/113°31'34"			A&Ww			FBC			FC	AgI	AgL
BW	Trout Creek	Headwaters to confluence with unnamed tributary at 35°06'47"/113°13'01"		A&Wc				FBC			FC		AgL
BW	Trout Creek	Below confluence with unnamed tributary to confluence with Knight Creek at 34°55'16"/113°37'30"			A&Ww			FBC			FC		AgL
CG	Agate Canyon Creek	Headwaters to confluence with the Colorado River at 36°08'38"/112°16'48"			A&Ww			FBC			FC		
CG	Beaver Dam Wash	Headwaters to confluence with the Virgin River at 36°53'42"/113°55'09"			A&Ww			FBC			FC		AgL
CG	Big Springs Tank	36°36'10"/112°20'58" 36°36'08"/112°21'01"		A&Wc				FBC			FC		AgL
CG	Boucher Creek	Headwaters to confluence with the Colorado River at 36°06'54"/112°13'44"			A&Ww			FBC			FC		
CG	Bright Angel Creek	Headwaters to confluence with Roaring Springs Canyon at 36°11'34"/112°01'54" Creek		A&Wc				FBC			FC		
CG	Bright Angel Creek	Below Roaring Spring Springs Canyon Creek to confluence with Colorado River at 36°05'56"/112°05'27.6"			A&Ww			FBC			FC		
CG	Bright Angel Wash	Headwaters to Grand Canyon National Park South Rim of Grand Canyon WWTP outfall at 36°02'59"/112°09'02"				A&We			PBC				
CG	Bright Angel Wash (EDW)	Grand Canyon National Park South Rim Grand Canyon WWTP outfall at 36°00'11"/112°39'06" to Coconino Wash					A&Wedw		PBC				AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
CG	Bulrush Canyon Wash	Headwaters to confluence with Kanab Creek at 36°46'55"/112°37'08"			A&We			PBC				
CG	Cataract Creek	Headwaters to Santa Fe Reservoir		A&Wc			FBC		DWS	FC	AgI	AgL
CG	Cataract Creek	Santa Fe Reservoir to City of Williams WWTP outfall at 35°15'40"/112°10'40" 35°14'40"/112°11'18"		A&Wc			FBC			FC	AgI	AgL
CG	Cataract Creek (EDW)	City of Williams WWTP outfall to 1 km downstream				A&Wedw		PBC				
CG	Cataract Creek	Red Lake Wash to Havasupai Indian Reservation at 33°56'52"/112°30'38.3" boundary			A&We			PBC				AgL
CG	Cataract Lake	35°15'05"/112°12'58" 35°15'04"/112°12'58"	Igneous	A&Wc			FBC		DWS	FC		AgL
CG	Chuar Creek	Headwaters to confluence with unnamed tributary at 36°11'36"/111°52'17" 36°11'35"/111°52'20"		A&Wc			FBC			FC		
CG	Chuar Creek	Below unnamed tributary at 36°11'36.4"/111°52'17" to confluence with the Colorado River at 36°08'20.4"/111°48'58.7"			A&Ww		FBC			FC		
CG	City Reservoir	35°13'57"/112°11'23" 35°13'57"/112°11'25"	Igneous	A&Wc			FBC		DWS	FC		
CG	Clear Creek	Headwaters to confluence with unnamed tributary at 36°09'12"/111°58'25" 36°07'33"/112°00'03"		A&Wc			FBC			FC		
CG	Clear Creek	Below confluence with unnamed tributary to confluence with Colorado River at 36°04'55"/112°02'09.6"			A&Ww		FBC			FC		
CG	Coconino Wash (EDW)	South Grand Canyon Sanitary District Tusayan WRF outfall at 35°58'39"/112°08'25" to 1 km downstream at 35°58'36"/112°08'54"				A&Wedw		PBC				
CG	Colorado River	Lake Powell to Lake Mead		A&Wc			FBC		DWS	FC	AgI	AgL
CG	Cottonwood Creek	Headwaters to confluence with unnamed tributary at 35°20'45.5"/113°35'34" 35°20'46"/113°35'31"		A&Wc			FBC			FC		AgL
CG	Cottonwood Creek	Below confluence with unnamed tributary to confluence with Colorado River at 35°22'05"/113°40'04.8"			A&Ww		FBC			FC		AgL
CG	Crystal Creek	Headwaters to confluence with unnamed tributary at 36°13'42"/112°11'48" 36°13'41"/112°11'49"		A&Wc			FBC			FC		
CG	Crystal Creek	Below confluence with unnamed tributary to confluence with Colorado River at 36°08'06"/112°14'34.8"			A&Ww		FBC			FC		
CG	Deer Creek	Headwaters to confluence with unnamed tributary at 36°26'16"/112°28'15.5" 36°26'15"/112°28'20"		A&Wc			FBC			FC		
CG	Deer Creek	Below confluence with unnamed tributary to confluence with Colorado River at 36°23'20"/112°20'28.8"			A&Ww		FBC			FC		
CG	Detrital Wash	Headwaters to Lake Mead at 36°02'20"/114°27'47"			A&We			PBC				
CG	Dogtown Reservoir	35°12'40"/112°07'46" 35°12'40"/112°07'54"	Igneous	A&Wc			FBC		DWS	FC	AgI	AgL
CG	Dragon Creek	Headwaters to confluence with Milk Creek at 36°12'25"/112°09'23"		A&Wc			FBC			FC		
CG	Dragon Creek	Below confluence with Milk Creek to confluence with Crystal Creek at 36°10'12"/112°12'10.8"			A&Ww		FBC			FC		
CG	Garden Creek	Headwaters to confluence with Pipe Creek at 36°05'35"/112°06'40"			A&Ww		FBC			FC		
CG	Gonzalez Lake	35°15'26"/112°12'07" 35°15'26"/112°12'09"	Shallow	A&Ww			FBC			FC	AgI	AgL
CG	Grand Wash	Headwaters to Lake Mead at 36°15'29"/114°00'18"			A&We			PBC				
CG	Grapevine Creek	Headwaters to confluence with the Colorado River at 36°03'29"/112°00'00"			A&Ww		FBC			FC		
CG	Grapevine Wash	Headwaters to Lake Mead at 36°06'29"/114°00'07"			A&We			PBC				
CG	Hakatai Canyon Creek	Headwaters to confluence with the Colorado River at 36°14'42"/112°22'59"			A&Ww		FBC			FC		
CG	Hance Creek	Headwaters to confluence with the Colorado River at 36°02'46"/111°57'07"			A&Ww		FBC			FC		
CG	Havas Canyon Creek	From the Havasupai Indian Reservation ; boundary to confluence with the Colorado River at 36°18'29"/112°45'43"			A&Ww		FBC			FC		
CG	Hermit Creek	Headwaters to Hermit Pack Trail crossing at 36°03'23"/112°13'25" 36°03'38"/112°14'00"		A&Wc			FBC			FC		
CG	Hermit Creek	Below Hermit Pack Trail crossing to confluence with the Colorado River at 36°06'00"/112°32'04"			A&Ww		FBC			FC		
CG	Horn Creek	Headwaters to confluence with the Colorado River at 36°05'56"/112°07'59"			A&Ww		FBC			FC		
CG	Hualapai Wash	Headwaters to Lake Mead at 36°00'40"/114°07'37"			A&We			PBC				
CG	Jacob Lake	36°42'26"/112°13'48" 36°42'27"/112°13'50"	Sedimentary	A&Wc			FBC			FC		
CG	Kaibab Lake	35°17'04"/112°09'17" 35°17'04"/112°09'32"	Igneous	A&Wc			FBC		DWS	FC	AgI	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
CG	Kanab Creek	Headwaters to confluence with the Colorado River at 36°23'31"/112°37'44"			A&Ww		FBC		DWS	FC		AgL
CG	Kwagunt Creek	Headwaters to confluence with unnamed tributary at 36°13'29"/111°55'24" 36°13'37"/111°54'50"		A&Wc			FBC			FC		
CG	Kwagunt Creek	Below confluence with unnamed tributary to confluence with the Colorado River at 36°15'47"/111°49'40.8"			A&Ww		FBC			FC		
CG	Lake Mead	36°01'00"/114°44'15" 36°06'18"/114°26'33"	Deep	A&Wc			FBC		DWS	FC	AgL	AgL
CG	Lake Powell	36°57'00"/111°29'15" 36°59'53"/111°08'17"	Deep	A&Wc			FBC		DWS	FC	AgL	AgL
CG	Lonetree Canyon Creek	Headwaters to confluence with the Colorado River at 36°04'48"/112°01'52"			A&Ww		FBC			FC		
CG	Matkatamiba Creek	Below Havasupai Indian Reservation ; boundary to confluence with the Colorado River at 36°20'38"/112°40'19"			A&Ww		FBC			FC		
CG	Monument Creek	Headwaters to confluence with the Colorado River at 36°05'53"/112°10'55"			A&Ww		FBC			FC		
CG	Nankoweap Creek	Headwaters to confluence with unnamed tributary at 36°15'20"/111°57'23" 36°15'29"/111°57'26"		A&Wc			FBC			FC		
CG	Nankoweap Creek	Below confluence with unnamed tributary to confluence with Colorado River at 36°18'25"/111°51'28.8"			A&Ww		FBC			FC		
CG	National Canyon Creek	Portion of the creek that flows into the Colorado River at 36°15'25"/112°53'34.8" that is not located on the Headwaters to Hualapai Indian Reservation boundary at 36°15'15"/112°52'34"			A&Ww		FBC			FC		
CG	North Canyon Creek	Headwaters to confluence with unnamed tributary at 36°23'57"/111°55'39" 36°33'58"/111°55'41"		A&Wc			FBC			FC		
CG	North Canyon Creek	Below confluence with unnamed tributary to confluence with Colorado River at 36°37'48"/111°45'46.8"			A&Ww		FBC			FC		
CG	Olo Creek	Headwaters to confluence with the Colorado River at 36°22'16"/112°38'56"			A&Ww		FBC			FC		
CG	Parashant Canyon	Headwaters to confluence with unnamed tributary at 36°21'26"/113°28'10" 36°21'02"/113°27'56"		A&Wc			FBC			FC		
CG	Parashant Canyon	Below confluence with unnamed tributary to confluence with the Colorado River			A&Ww		FBC			FC		
CG	Paria River	Utah border to confluence with the Colorado River at 36°51'29"/111°36'04"			A&Ww		FBC			FC		
CG	Phantom Creek	Headwaters to confluence with unnamed tributary at 36°10'04"/112°07'50" 36°09'29"/112°08'13"		A&Wc			FBC			FC		
CG	Phantom Creek	Below confluence with unnamed tributary to Colorado River at 36°06'58"/112°05'09.6" confluence with Bright Angel Creek			A&Ww		FBC			FC		
CG	Pipe Creek	Headwaters to confluence with the Colorado River at 36°05'56"/112°06'36"			A&Ww		FBC			FC		
CG	Red Canyon Creek	Headwaters to confluence with the Colorado River at 36°02'42"/111°55'08"			A&Ww		FBC			FC		
CG	Red Lake	35°40'00"/114°03'45" 35°40'03"/114°04'07"			A&Ww		FBC			FC		AgL
CG	Redondo Lake	32°44'32"/114°29'02"	Shallow		A&Ww		FBC			FC		
CG	Roaring Springs	Headwaters of Roaring Springs-Creek at 36°11'35"/112°01'58.2" 36°11'45"/112°02'06"		A&Wc			FBC		DWS	FC		
CG	Roaring Springs Canyon Creek	Headwaters to confluence with Bright Angel Creek at 36°11'35"/112°01'55"		A&Wc			FBC			FC		
CG	Rock Canyon	Tributary Headwaters to confluence with Truxton Wash at 35°26'56"/113°36'29"			A&We			PBC				
CG	Royal Arch Creek	Tributary Headwaters to confluence with the Colorado River at 36°11'52"/112°26'56"			A&Ww		FBC			FC		
CG	Ruby Canyon Creek	Tributary Headwaters to confluence with the Colorado River at 36°11'24"/112°18'54"			A&Ww		FBC			FC		
CG	Russell Tank	34°52'22"/111°52'44" 35°52'21"/111°52'45"		A&Wc			FBC			FC		AgL
CG	Saddle Canyon Creek	Headwaters to confluence with unnamed tributary at 36°21'35.5"/112°22'46" 36°21'36"/112°22'43"		A&Wc			FBC			FC		
CG	Saddle Canyon Creek	Below confluence with unnamed tributary to confluence with Colorado River at 36°22'52"/112°23'46.8"			A&Ww		FBC			FC		
CG	Santa Fe Reservoir	35°14'26"/112°11'04" 35°14'31"/112°11'10"	Igneous	A&Wc			FBC		DWS	FC		
CG	Sapphire Canyon Creek	Headwaters to confluence with the Colorado River at 36°08'49"/112°17'28"			A&Ww		FBC			FC		
CG	Serpentine Canyon Creek	Headwaters to confluence with the Colorado River at 36°12'22"/112°19'37"			A&Ww		FBC			FC		
CG	Shinumo Creek	Headwaters to confluence with unnamed tributary at 36°18'21"/112°18'03" 36°18'18"/112°18'07"		A&Wc			FBC			FC		
CG	Shinumo Creek	Below confluence with unnamed tributary to confluence with the Colorado River at 36°14'13"/112°20'52.8"			A&Ww		FBC			FC		
CG	Short Creek	Tributary Headwaters to confluence with the Virgin River at 36°58'23"/113°16'08"			A&We			PBC				

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
CG	Slate Creek	Headwaters to confluence with the Colorado River at 36°08'06"/112°14'42"		A&Ww			FBC		FC		
CG	Spring Canyon Creek	Headwaters to confluence with the Colorado River at 36°01'08"/113°21'00"		A&Ww			FBC		FC		
CG	Stone Creek	Headwaters to confluence with the Colorado River at 36°20'49"/112°27'14"		A&Ww			FBC		FC		
CG	Tapeats Creek	Headwaters to confluence with the Colorado River at 36°22'16"/112°28'05"		A&Wc			FBC		FC		
CG	Thunder River	Tributary Headwaters to confluence with Tapeats Creek at 36°23'31"/112°27'00"		A&Wc			FBC		FC		
CG	Trail Canyon Creek	Headwaters to confluence with the Colorado River at 35°50'20"/113°19'37"		A&Ww			FBC		FC		
CG	Transept Canyon	Headwaters to Grand Canyon National Park North Rim WWTP outfall at 36°12'20"/112°03'35"			A&We			PBC			
CG	Transept Canyon (EDW)	Grand Canyon National Park North Rim WWTP outfall to 1 km downstream				A&Wedw		PBC			
CG	Transept Canyon	From 1 km downstream of the Grand Canyon National Park North Rim WWTP outfall to confluence with Bright Angel Creek			A&We			PBC			
CG	Travertine Canyon Creek	Tributary Headwaters to confluence with the Colorado River at 36°06'11"/112°13'05"		A&Ww			FBC		FC		
CG	Truxton Wash	Tributary Headwaters to Red Lake at 35°37'23"/114°02'00"			A&We			PBC			
CG	Turquoise Canyon Creek	Tributary Headwaters to confluence with the Colorado River at 36°09'14"/112°18'07"		A&Ww			FBC		FC		
CG	Unkar Creek	Below confluence with unnamed tributary at 36°07'54"/111°54'06" to confluence with Colorado River at 36°04'48"/111°52'22.8"		A&Ww			FBC		FC		
CG	Unnamed Wash (EDW)	Grand Canyon NP National Park Desert View WWTP outfall at 36°02'06"/111°49'13" to confluence with Cedar Canyon				A&Wedw		PBC			
CG	Unnamed Wash (EDW)	Valle Airpark WRF outfall at 35°38'34"/112°09'22" to confluence with Spring Valley Wash at 35°38'29"/112°10'47"				A&Wedw		PBC			
CG	Vasey's Paradise	A spring at 36°26'49"/111°50'46" 36°29'52"/111°51'26"		A&Wc			FBC		FC		
CG	Virgin River	Tributary Headwaters to confluence with the Colorado River at 36°47'28"/114°06'11"		A&Ww			FBC		FC	AgL	AgL
CG	Vishnu Creek	Tributary Headwaters to confluence with the Colorado River at 36°03'18"/111°59'42"		A&Ww			FBC		FC		
CG	Warm Springs Creek	Tributary Headwaters to confluence with the Colorado River at 36°11'49"/113°04'55"		A&Ww			FBC		FC		
CG	West Cataract Creek	Tributary Headwaters to confluence with Cataract Creek at 35°15'40"/112°11'38"		A&Wc			FBC		FC	AgL	
CG	White Creek	Headwaters to confluence with unnamed tributary at 36°18'42"/112°21'03" 36°18'45"/112°21'03"		A&Wc			FBC		FC		
CG	White Creek	Below confluence with unnamed tributary to confluence with the Colorado River at 36°15'22"/112°19'30"			A&Ww		FBC		FC		
CG	Wright Canyon Creek	Headwaters to confluence with unnamed tributary at 35°20'54"/113°30'35" 35°20'48"/113°30'40"		A&Wc			FBC		FC	AgL	
CG	Wright Canyon Creek	Below confluence with unnamed tributary to confluence with Truxton Wash			A&Ww		FBC		FC	AgL	
CL	A10 Backwater	33°31'28"/114°33'19" 33°31'45"/114°33'19"	Shallow		A&Ww		FBC		FC		
CL	A7 Backwater	33°34'39"/114°39'42" 33°34'27"/114°32'04"	Shallow		A&Ww		FBC		FC		
CL	Adobe Lake	33°02'39"/114°39'19" 33°02'36"/114°39'26"	Shallow		A&Ww		FBC		FC		
CL	Cibola Lake	33°31'38"/114°33'19" 33°14'01"/114°40'31"	Shallow		A&Ww		FBC		FC		
CL	Clear Lake	33°01'57"/114°31'26" 33°01'59"/114°31'19"	Shallow		A&Ww		FBC		FC		
CL	Columbus Wash	Tributary Headwaters to confluence with the Gila River at 33°00'25"/112°16'08"			A&We			PBC			
CL	Colorado River	Lake Mead to Topock Marsh		A&Wc			FBC		DWS	FC	AgL
CL	Colorado River	Topock Marsh to Morelos Dam			A&Ww		FBC		DWS	FC	AgL
CL	Gila River	Painted Rock Dam to confluence with the Colorado River at 32°42'12"/114°33'14"			A&Ww		FBC		FC	AgL	AgL
CL	Holy Moses Wash	Headwaters to City of Kingman Downtown WWTP outfall at 35°10'30"/114°03'43" 35°10'33"/114°03'46"			A&We			PBC			
CL	Holy Moses Wash (EDW)	City of Kingman Downtown WWTP outfall to 3 km downstream				A&Wedw		PBC			
CL	Holy Moses Wash	From 3 km downstream of City of Kingman Downtown WWTP outfall to confluence with Sawmill Wash at 35°09'43"/114°04'20"			A&We			PBC			
CL	Hunter's Hole Backwater	32°31'45"/114°48'03" 32°31'13"/114°48'07"	Shallow		A&Ww		FBC		FC		AgL
CL	Imperial Reservoir	32°53'04"/114°27'40" 32°53'02"/114°27'54"	Shallow		A&Ww		FBC		DWS	FC	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
CL	Island Lake	33°01'52"/114°35'07" 33°01'44"/114°36'42"	Shallow		A&Ww			FBC		FC		
CL	Laguna Reservoir	32°51'45"/114°28'38" 32°51'35"/114°28'29"	Shallow		A&Ww			FBC		DWS	FC	AgL
CL	Lake Havasu	34°18'45"/114°08'15" 34°35'18"/114°25'47"	Deep		A&Ww			FBC		DWS	FC	AgL
CL	Lake Mohave	35°11'45"/114°34'00" 35°26'58"/114°38'30"	Deep	A&Wc				FBC		DWS	FC	AgL
CL	Martinez Lake	32°58'52"/114°28'23" 32°58'49"/114°28'09"	Shallow		A&Ww			FBC			FC	AgL
CL	Mittry Lake	32°49'11"/114°27'41" 32°49'17"/114°27'54"	Shallow		A&Ww			FBC			FC	
CL	Mohave Wash	Headwaters to Lake Havasu at 33°28'55"/114°35'56"				A&We			PBC			
CL	Nortons Lake	33°02'35"/114°37'58" 33°02'30"/114°37'59"	Shallow		A&Ww			FBC			FC	
CL	Painted Rock (Borrow Pit) Lake	33°05'00"/113°01'20" 33°04'55"/113°01'17"	Sedimentary		A&Ww			FBC			FC	AgL
CL	Pretty Water Lake	33°19'45"/114°42'15" 33°19'51"/114°42'19"	Shallow		A&Ww			FBC			FC	
CL	Quigley Ponds	32°43'00"/113°58'00" 32°43'40"/113°57'44"	Shallow		A&Ww			FBC			FC	
CL	Redondo Lake	32°44'32"/114°29'03"	Shallow		A&Ww			FBC			FC	
CL	Sacramento Wash	Tributary Headwaters to Topock Marsh at 34°43'48"/114°29'13"				A&We			PBC			
CL	Sawmill Canyon	Headwaters to abandoned gaging station at 35°09'46.5"/113°57'54" 35°09'45"/113°57'56"			A&Ww			FBC			FC	AgL
CL	Sawmill Canyon	Below abandoned gaging station to confluence with Sacramento Holy Moses Wash at 35°09'43"/113°58'01.2"				A&We			PBC			AgL
CL	Topock Marsh	34°47'30"/114°31'00" 34°43'27"/114°28'59"	Shallow		A&Ww			FBC		DWS	FC	AgL
CL	Tyson Wash (EDW)	Town of Quartzsite WWTP outfall at 33°42'30"/114°13'14" 33°42'39"/114°13'10" to 1 km downstream at 33°42'30"/114°13'45"					A&Wedw		PBC			
CL	Wellton Canal	Wellton-Mohawk Irrigation District								DWS		AgL
CL	Wellton Ponds	32°42'45"/114°06'45" 32°40'32"/114°00'26"			A&Ww			FBC			FC	
CL	YPG Pond	32°50'22"/114°26'25" 32°50'58"/114°26'14"			A&Ww			FBC			FC	
CL	Yuma Area Canals	Above municipal water treatment plant intakes								DWS		AgL
CL	Yuma Area Canals	Below municipal water treatment plant intakes and all drains										AgL
LC	Als Lake	35°02'17"/111°25'13" 35°02'10"/111°25'17"	Igneous		A&Ww			FBC			FC	AgL
LC	Ashurst Lake	35°01'40"/111°24'09" 35°01'06"/111°24'18"	Igneous	A&Wc				FBC			FC	AgL
LC	Atcheson Reservoir	34°00'00"/109°20'41" 33°59'59"/109°20'43"	Igneous		A&Ww			FBC			FC	AgL
LC	Auger Creek	Tributary Headwaters to confluence with Nutrioso Creek at 33°57'22"/109°12'58"			A&Wc			FBC			FC	AgL
LC	Barbershop Canyon Creek	Tributary Headwaters to confluence with East Clear Creek at 34°33'00"/111°09'43"			A&Wc			FBC			FC	AgL
LC	Bear Canyon Creek	Tributary Headwaters to confluence with General Springs Canyon at 34°32'18"/111°12'45"			A&Wc			FBC			FC	AgL
LC	Bear Canyon Creek	Tributary Headwaters to confluence with Willow Creek at 34°27'29"/111°00'00"			A&Wc			FBC			FC	AgL
LC	Bear Canyon Lake	34°24'10"/111°00'00" 34°24'00"/111°00'06"	Sedimentary	A&Wc				FBC			FC	AgL
LC	Becker Lake	34°09'46"/109°18'18" 34°09'11"/109°18'23"	Shallow	A&Wc				FBC			FC	AgL
LC	Billy Creek	Tributary Headwaters to confluence with Show Low Creek at 34°12'25"/110°00'00"			A&Wc			FBC			FC	AgL
LC	Black Canyon Creek	Tributary Headwaters to confluence with Chevelon Creek at 34°47'38"/110°36'22"			A&Wc			FBC			FC	AgL
LC	Black Canyon Lake	34°19'50"/110°41'59" 34°20'32"/110°40'13"	Sedimentary	A&Wc				FBC		DWS	FC	AgL
LC	Blue Ridge Reservoir	34°33'45"/111°11'01" 34°32'40"/111°11'33"	Deep	A&Wc				FBC			FC	AgL
LC	Boot Lake	34°58'53"/111°20'00" 34°58'54"/111°20'11"	Igneous	A&Wc				FBC			FC	AgL
LC	Bow and Arrow Wash (EDW)	Estates at Pine Canyon WWTP outfall #1 at 35°09'31"/111°38'24" Headwaters, to confluence with Rio de Flag at 35°10'35"/111°36'42"				A&We	A&Wedw		PBC			
LC	Buck Springs Canyon Creek	Tributary Headwaters to confluence with Leonard Canyon Creek at 34°28'52"/111°05'24"			A&Wc			FBC			FC	AgL
LC	Bunch Reservoir	34°02'12"/109°26'45" 34°02'20"/109°26'48"	Igneous	A&Wc				FBC			FC	AgL
LC	Camillo Tank	34°55'03"/111°22'41" 34°55'03"/111°22'40"	Igneous		A&Ww			FBC			FC	AgL
LC	Carnero Lake	34°06'57"/109°31'39" 34°06'57"/109°31'42"	Shallow	A&Wc				FBC			FC	AgL
LC	Chevelon Canyon Lake	34°30'39"/110°49'28" 34°29'18"/110°49'30"	Sedimentary	A&Wc				FBC			FC	AgL
LC	Chevelon Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°57'04"/110°31'30"			A&Wc			FBC			FC	AgL

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
LC	Chevelon Creek, West Fork	Tributary Headwaters to confluence with Chevelon Creek at 34°36'58"/110°46'05"		A&Wc			FBC		FC		AgL
LC	Chilson Tank	34°51'46"/111°22'52" 34°51'43"/111°22'54"	Igneous		A&Ww		FBC		FC		AgL
LC	Clear Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°59'13"/110°38'17"		A&Wc			FBC		DWS	FC	AgL
LC	Clear Creek Reservoir	34°58'10"/110°38'33" 34°57'09"/110°39'14"	Shallow	A&Wc			FBC		DWS	FC	AgL
LC	Coconino Reservoir	35°00'16"/111°23'52" 35°00'05"/111°24'10"	Igneous	A&Wc			FBC			FC	AgL
LC	Colter Creek	Tributary Headwaters to confluence with Nutrioso Creek at 33°58'19"/109°12'29"		A&Wc			FBC			FC	AgL
LC	Colter Reservoir	33°56'40"/109°28'50" 33°56'39"/109°28'53"	Shallow	A&Wc			FBC			FC	AgL
LC	Concho Creek	Tributary Headwaters to confluence with Carrizo Wash at 34°36'25"/109°33'54"		A&Wc			FBC			FC	AgL
LC	Concho Lake	34°26'36"/109°37'40" 34°26'37"/109°37'40"	Shallow	A&Wc			FBC			FC	AgL
LC	Cow Lake	34°53'19"/111°18'49" 34°53'14"/111°18'51"	Igneous		A&Ww		FBC			FC	AgL
LC	Coyote Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°18'22"/109°20'53"		A&Wc			FBC			FC	AgL
LC	Crisis Lake (Snake Tank #2)	34°47'51"/111°17'01" 34°47'51"/111°17'32"			A&Ww		FBC			FC	AgL
LC	Dane Canyon Creek	Tributary Headwaters to confluence with Barbershop Canyon Creek at 34°30'29"/111°09'07"		A&Wc			FBC			FC	AgL
LC	Daves Tank	34°44'22"/111°17'08" 34°44'22"/111°17'15"			A&Ww		FBC			FC	AgL
LC	Deep Lake	35°03'30"/111°24'55" 35°03'34"/111°25'00"	Igneous		A&Ww		FBC			FC	AgL
LC	Dry Lake (EDW)	34°27'52"/110°23'40" 34°28'02"/110°23'40"	Igneous EDW			A&Wedw		PBC			
LC	Ducksnest Lake	34°59'15"/111°23'53" 34°59'14"/111°23'57"			A&Ww		FBC			FC	AgL
LC	East Clear Creek	Tributary Headwaters to confluence with Clear Creek at 34°38'31"/110°59'49"		A&Wc			FBC			FC	AgL
LC	Ellis Wiltbank Reservoir	34°05'25"/109°28'24" 34°05'25"/109°28'25"	Igneous		A&Ww		FBC			FC	AgL
LC	Estates at Pine Canyon lakes (EDW)	35°09'32"/111°38'26"	EDW			A&Wedw		PBC			
LC	Fish Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°04'05"/109°26'49"		A&Wc			FBC			FC	AgL
LC	Fool's Hollow Lake	34°16'14"/110°04'15" 34°16'30"/110°03'43"	Igneous	A&Wc			FBC			FC	AgL
LC	General Springs Canyon Creek	Tributary Headwaters to confluence with East Clear Creek at 34°32'17"/111°12'18"		A&Wc			FBC			FC	AgL
LC	Geneva Reservoir	34°01'44"/109°31'44" 34°01'45"/109°31'46"	Igneous		A&Ww		FBC			FC	AgL
LC	Hall Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°03'58"/109°27'07"		A&Wc			FBC			FC	AgL
LC	Hart Canyon Creek	Tributary Headwaters to confluence with Willow Creek at 34°30'40"/110°59'28"		A&Wc			FBC			FC	AgL
LC	Hay Lake	34°00'11"/109°25'55" 34°00'11"/109°25'57"	Igneous	A&Wc			FBC			FC	AgL
LC	Hog Wallow Lake	33°58'57"/109°25'38" 33°58'57"/109°25'39"	Igneous	A&Wc			FBC			FC	AgL
LC	Horse Lake	35°03'53"/111°27'51" 35°03'55"/111°27'50"			A&Ww		FBC			FC	AgL
LC	Huffer Tank	34°27'45"/111°23'09"			A&Ww		FBC			FC	AgL
LC	Hulsey Creek	Tributary Headwaters to confluence with Nutrioso Creek at 33°56'28"/109°11'28"		A&Wc			FBC			FC	AgL
LC	Hulsey Lake	33°55'57"/109°09'33" 33°55'58"/109°09'40"	Sedimentary	A&Wc			FBC			FC	AgL
LC	Indian Lake	35°00'38"/111°22'37" 35°00'39"/111°22'41"			A&Ww		FBC			FC	AgL
LC	Jack's Canyon Creek	Tributary Headwaters to confluence with the Little Colorado River at 35°00'07"/110°39'07"		A&Wc			FBC			FC	AgL
LC	Jarvis Lake	33°58'59"/109°12'33" 33°58'59"/109°12'36"	Sedimentary		A&Ww		FBC			FC	AgL
LC	Kinnikinick Lake	34°53'52"/111°18'20" 34°53'53"/111°18'18"	Igneous	A&Wc			FBC			FC	AgL
LC	Knoll Lake	34°25'38"/111°05'10" 34°25'38"/111°05'13"	Sedimentary	A&Wc			FBC			FC	AgL
LC	Lake Humphreys (EDW)	35°11'51"/111°35'16" 35°11'51"/111°35'19"	EDW			A&Wedw		PBC			
LC	Lake Mary, Lower	35°06'22"/111°34'20" 35°06'21"/111°34'38"	Igneous	A&Wc			FBC		DWS	FC	AgL
LC	Lake Mary, Upper	35°04'45"/111°31'56" 35°03'23"/111°28'34"	Igneous	A&Wc			FBC		DWS	FC	AgL
LC	Lake of the Woods	34°09'39"/109°58'45" 34°09'40"/109°58'47"	Igneous	A&Wc			FBC			FC	AgL
LC	Lee Valley Creek (OAW)	Headwaters to Lee Valley Reservoir		A&Wc			FBC			FC	
LC	Lee Valley Creek	From Lee Valley Reservoir to confluence with the East Fork of the Little Colorado River at 33°56'35"/109°29'06"		A&Wc			FBC			FC	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
LC	Lee Valley Reservoir	33°56'30"/109°30'00" 33°56'29"/109°30'04"	Igneous	A&Wc			FBC		FC	AgI	AgL
LC	Leonard Canyon Creek	Tributary Headwaters to confluence with Clear Creek at 34°27'26"/111°02'20"		A&Wc			FBC		FC		AgL
LC	Leonard Canyon Creek, East Fork	Tributary Headwaters to confluence with Leonard Canyon Creek at 34°25'52"/111°05'06"		A&Wc			FBC		FC		AgL
LC	Leonard Canyon Creek, Middle Fork	Tributary Headwaters to confluence with Leonard Canyon, West Fork at 34°26'17"/111°06'47"		A&Wc			FBC		FC		AgL
LC	Leonard Canyon Creek, West Fork	Tributary Headwaters to confluence with Leonard Canyon, East Fork at 34°28'01"/111°05'28"		A&Wc			FBC		FC		AgL
LC	Lily Creek	Tributary Headwaters to confluence with Coyote Creek at 33°59'46"/109°03'58"		A&Wc			FBC		FC		AgL
LC	Little Colorado River	Headwaters to Lyman Reservoir		A&Wc			FBC		FC	AgI	AgL
LC	Little Colorado River	Below Lyman Reservoir; to confluence with the Puerco River at 34°53'20"/110°07'41"		A&Wc			FBC		DWS	FC	AgI
LC	Little Colorado River	Below confluence with the Puerco River to the boundary of the Navajo Nation Reservation boundary			A&Ww		FBC		DWS	FC	AgI
LC	Little Colorado River, East Fork	Tributary Headwaters to confluence with the Little Colorado River at 34°00'14"/109°27'22"		A&Wc			FBC		FC		AgL
LC	Little Colorado River, South Fork	Tributary Headwaters to confluence with the Little Colorado River at 34°05'20"/109°24'58"		A&Wc			FBC		FC		AgL
LC	Little Colorado River, West Fork (OAW)	Headwaters to Government Springs at 33°59'33"/109°27'52"		A&Wc			FBC		FC		
LC	Little Colorado River, West Fork	Below Government Springs to confluence with the Little Colorado River at 34°00'14"/109°27'22"		A&Wc			FBC		FC		AgL
LC	Little George Reservoir	34°00'37"/109°19'15"	Igneous		A&Ww		FBC		FC	AgI	
LC	Little Mormon Lake	34°17'00"/109°58'03" 34°17'00"/109°58'06"	Igneous		A&Ww		FBC		FC	AgI	AgL
LC	Little Ortega Lake	34°22'45"/109°40'00" 34°22'47"/109°40'06"	Igneous	A&Wc			FBC		FC		
LC	Long Lake, Lower	34°46'45"/111°12'00" 34°47'16"/111°12'40"	Igneous	A&Wc			FBC		FC	AgI	AgL
LC	Long Lake, Upper	35°00'00"/111°21'00" 35°00'08"/111°21'23"	Igneous	A&Wc			FBC		FC		AgL
LC	Long Tom Tank	34°20'37"/110°49'20" 34°20'35"/110°49'22"		A&Wc			FBC		FC		AgL
LC	Lower Walnut Canyon Lake (EDW)	35°12'04"/111°34'07"	EDW			A&Wedw		PBC			
LC	Lyman Reservoir	34°21'30"/109°21'30" 34°21'21"/109°21'35"	Deep	A&Wc			FBC		FC	AgI	AgL
LC	Mamie Creek	Tributary Headwaters to confluence with Coyote Creek at 33°59'24"/109°03'50"		A&Wc			FBC		FC		AgL
LC	Marshall Lake	35°07'10"/111°32'01" 35°07'18"/111°32'07"	Igneous	A&Wc			FBC		FC		AgL
LC	McKay Reservoir	34°01'27"/110°29'07" 34°01'27"/109°13'48"		A&Wc			FBC		FC	AgI	AgL
LC	Merritt Draw Creek	Tributary Headwaters to confluence with Barbershop Canyon Creek at 34°29'38"/111°09'54"		A&Wc			FBC		FC		AgL
LC	Mexican Hay Lake	34°01'57"/109°21'25" 34°01'58"/109°21'25"	Igneous	A&Wc			FBC		FC	AgI	AgL
LC	Milk Creek	Tributary Headwaters to confluence with Hulsey Creek at 33°56'31"/109°11'17"		A&Wc			FBC		FC		AgL
LC	Miller Canyon Creek	Tributary Headwaters to confluence with East Clear Creek at 34°33'00"/111°14'17"		A&Wc			FBC		FC		AgL
LC	Miller Canyon Creek, East Fork	Tributary Headwaters to confluence with Miller Canyon Creek at 34°30'18"/111°14'53"		A&Wc			FBC		FC		AgL
LC	Mineral Creek	Tributary Headwaters to Little Ortega Lake at 34°22'52"/109°39'50"		A&Wc			FBC		FC	AgI	AgL
LC	Mormon Lake	34°56'40"/111°27'40" 34°56'38"/111°27'25"	Shallow	A&Wc			FBC		DWS	FC	AgI
LC	Morton Lake	34°53'36"/111°17'39" 34°53'37"/111°17'41"	Igneous	A&Wc			FBC		FC		AgL
LC	Mud Lake	34°55'24"/111°21'18" 34°55'19"/111°21'29"	Shallow		A&Ww		FBC		FC		AgL
LC	Ned Lake (EDW)	32°17'18"/110°03'20" 34°17'17"/110°03'22"	EDW			A&Wedw		PBC			
LC	Nelson Reservoir	34°03'12"/109°11'18" 34°02'52"/109°11'19"	Sedimentary	A&Wc			FBC		FC	AgI	AgL
LC	Norton Reservoir	34°03'57"/109°31'21" 34°03'57"/109°31'27"	Igneous		A&Ww		FBC		FC		AgL
LC	Nutriosio Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°09'04"/109°17'35"		A&Wc			FBC		FC	AgI	AgL
LC	Paddy Creek	Tributary Headwaters to confluence with Nutriosio Creek at 33°54'47"/109°10'16"		A&Wc			FBC		FC		AgL
LC	Phoenix Park Wash	Tributary Headwaters to Dry Lake at 34°37'30"/110°22'12"			A&We			PBC			

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
LC	Pierce Seep	34°23'35"/110°31'22" 34°23'39"/110°31'17"		A&We				PBC				
LC	Pine Tank	34°46'49"/111°17'47" 34°46'49"/111°17'21"	Igneous		A&Ww		FBC			FC		AgL
LC	Pintail Lake (EDW)	34°18'06"/110°01'17" 34°18'05"/110°01'21"	EDW			A&Wedw		PBC				
LC	Pool Corral Lake	33°58'16"/109°24'53"	Igneous		A&Ww		FBC			FC	AgL	AgL
LC	Porter Creek	Tributary Headwaters to confluence with Show Low Creek at 34°10'16"/109°58'48"		A&We			FBC			FC		AgL
LC	Potato Lake	34°27'44"/111°20'42" 35°03'15"/111°24'13"	Igneous	A&We			FBC			FC		AgL
LC	Pratt Lake	34°01'31"/109°04'16" 34°01'32"/109°04'18"	Sedimentary	A&We			FBC			FC		
LC	Puerco River	Tributary Headwaters to confluence with the Little Colorado River at 34°52'20"/110°07'41"			A&Ww		FBC		DWS	FC	AgL	AgL
LC	Puerco River (EDW)	Sanders Unified School District WWTP outfall at 35°12'52"/109°19'40" to 0.5 km downstream at 35°12'39"/109°19'52"				A&Wedw		PBC				
LC	Rainbow Lake	34°09'03"/109°59'01" 34°09'00"/109°59'09"	Shallow Igneous	A&We			FBC			FC	AgL	AgL
LC	Reagan Reservoir	34°02'09"/109°08'43" 34°02'09"/109°08'41"	Igneous		A&Ww		FBC			FC		AgL
LC	Rio de Flag	Headwaters to City of Flagstaff WWTP outfall at 35°12'21"/111°39'17"				A&We		PBC				
LC	Rio de Flag (EDW)	From City of Flagstaff WWTP outfall at 35°12'21"/111°39'17" to the confluence with San Francisco Wash				A&Wedw		PBC				
LC	River Reservoir	34°02'01"/109°26'07"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Rogers Reservoir	33°58'30"/109°16'18" 33°56'30"/109°16'20"	Igneous		A&Ww		FBC			FC		AgL
LC	Rudd Creek	Tributary Headwaters to confluence with Nutrioso Creek at 34°04'12"/109°11'56"		A&We			FBC			FC		AgL
LC	Russel Reservoir	33°59'29"/109°20'00" 33°59'29"/109°20'01"	Igneous		A&Ww		FBC			FC	AgL	AgL
LC	Salt House Lake	33°57'06"/109°20'12"	Igneous		A&Ww		FBC			FC		AgL
LC	San Salvador Reservoir	33°58'51"/109°19'54" 33°58'51"/109°19'55"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Scott Reservoir	34°10'27"/109°57'27" 34°10'31"/109°57'31"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Show Low Creek	Tributary Headwaters to confluence with Silver Creek at 34°25'26"/110°04'05"		A&We			FBC			FC	AgL	AgL
LC	Show Low Lake	34°11'25"/109°59'55" 34°11'36"/110°00'12"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Silver Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°44'24"/110°02'17"		A&We			FBC			FC	AgL	AgL
LC	Slade Reservoir	33°59'50"/109°20'00" 33°59'41"/109°20'26"	Igneous		A&Ww		FBC			FC	AgL	AgL
LC	Soldiers Annex Lake	34°47'13"/111°13'48" 34°47'15"/111°13'51"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Soldiers Lake	34°47'49"/110°13'59" 34°47'47"/111°14'04"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Spaulding Tank	34°20'17"/111°02'02" 34°20'17"/111°02'06"			A&Ww		FBC			FC		AgL
LC	Sponseller Lake	34°14'10"/109°50'42" 34°14'09"/109°50'45"	Igneous	A&We			FBC			FC		AgL
LC	St Johns Reservoir (Little Reservoir)	34°29'14"/109°21'57" 34°29'10"/109°22'06"	Igneous		A&Ww		FBC			FC	AgL	AgL
LC	Telephone Lake (EDW)	34°17'35"/110°02'39" 34°17'35"/110°02'42"	EDW			A&Wedw		PBC				
LC	Tremaine Lake	34°46'00"/111°14'10" 34°46'02"/111°13'51"	Igneous	A&We			FBC			FC		AgL
LC	Tunnel Reservoir	34°01'51"/109°26'32" 34°01'53"/109°26'34"	Igneous	A&We			FBC			FC	AgL	AgL
LC	Turkey Draw (EDW)	High Country Pines II WWTP outfall at 34°25'35"/110°38'13" 33°25'35"/110°38'13" to confluence of Turkey Draw with Black Canyon Creek at 34°25'20"/110°36'36"				A&Wedw		PBC				
LC	Unnamed Wash (EDW)	Bison Ranch WWTP outfall at 34°23'31"/110°31'29" to Pierce Seep at 34°23'35"/110°31'22"				A&Wedw		PBC				
LC	Unnamed Wash (EDW)	Black Mesa Ranger Station WWTP outfall at 34°23'32"/110°33'32" 34°23'35"/110°33'36" to confluence of Oklahoma Flat Draw with Pierce Wash at 34°26'47"/110°29'25"				A&Wedw		PBC				
LC	Unnamed Wash (EDW)	Estates at Pine Canyon WWTP outfall at 35°09'17"/111°38'22" to confluence of unnamed wash with Bow Wash and Arrow Wash at 35°09'51"/111°37'20"				A&Wedw		PBC				
LC	Unnamed Wash (EDW)	Estates at Pine Canyon WWTP outfall #3 at 35°09'45"/111°38'48" to confluence with Rio de Flag at 35°10'05"/111°38'37"				A&Wedw		PBC				
LC	Vail Lake	35°05'24"/111°30'42" 35°05'23"/111°30'46"	Igneous	A&We			FBC			FC		AgL
LC	Walnut Creek	Tributary Headwaters to confluence with Billy Creek at 34°09'50"/109°58'48"		A&We			FBC			FC		AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
LC	Water Canyon Creek	Tributary Headwaters to confluence with the Little Colorado River at 34°06'47"/109°18'43"		A&Wc			FBC		FC		AgL
LC	Water Canyon Reservoir	34°00'15"/109°20'05" 34°00'16"/109°20'05"	Igneous		A&Ww		FBC		FC	AgL	AgL
LC	Whale Lake (EDW)	35°12'32"/111°34'42" 35°11'13"/111°35'21"	EDW			A&Wedw		PBC			
LC	Whipple Lake	34°16'47"/109°58'28" 34°16'49"/109°58'29"	Igneous		A&Ww		FBC		FC		AgL
LC	White Mountain Lake	34°21'54"/109°59'38" 34°21'57"/109°59'21"	Igneous	A&Wc			FBC		FC	AgL	AgL
LC	White Mountain Reservoir	34°00'15"/109°30'48" 34°00'12"/109°30'39"	Igneous	A&Wc			FBC		FC	AgL	AgL
LC	Willow Creek	Tributary Headwaters to confluence with Clear Creek at 34°28'31"/110°59'49"		A&Wc			FBC		FC		AgL
LC	Willow Springs Canyon Creek	Tributary Headwaters to confluence with Chevelon Creek at 34°21'32"/110°53'20"		A&Wc			FBC		FC		AgL
LC	Willow Springs Lake	34°18'45"/110°52'34" 34°18'13"/110°52'16"	Sedimentary	A&Wc			FBC		FC	AgL	AgL
LC	Woodland Reservoir	34°07'36"/109°57'06" 34°07'35"/109°57'01"	Igneous	A&Wc			FBC		FC	AgL	AgL
LC	Woods Canyon Creek	Tributary Headwaters to confluence with Chevelon Creek at 34°21'32"/110°53'20"		A&Wc			FBC		FC		AgL
LC	Woods Canyon Lake	34°20'05"/110°56'35" 34°20'09"/110°56'45"	Sedimentary	A&Wc			FBC		FC	AgL	AgL
LC	Zuni River	Tributary Headwaters to confluence with the Little Colorado River at 34°38'42"/109°40'26"		A&Wc			FBC		FC	AgL	AgL
MG	Agua Fria River	Headwaters to confluence with unnamed EDW wash tributary at 34°35'43"/112°16'29", receiving treated wastewater from the Prescott Valley WWTP, 34°35'14"/112°16'18"			A&We			PBC			AgL
MG	Agua Fria River (EDW)	Below confluence with unnamed wash receiving treated wastewater from the Prescott Valley WWTP tributary to State Route 169 at 34°31'43"/112°14'7.5"				A&Wedw		PBC			AgL
MG	Agua Fria River	From State Route 169 to Lake Pleasant at 34°54'54.7"/112°14'7.5"			A&Ww		FBC		DWS	FC	AgL
MG	Agua Fria River	Below Lake Pleasant to the City of El Mirage WWTP at 33°34'36"/112°48'45" 33°34'20"/112°18'32"			A&We			PBC			AgL
MG	Agua Fria River (EDW)	From City of El Mirage WWTP outfall to 2 km downstream				A&Wedw		PBC			
MG	Agua Fria River	Below 2 km downstream of the City of El Mirage WWTP to City of Avondale WWTP outfall at 33°23'55"/112°21'16"			A&We			PBC			
MG	Agua Fria River	From City of Avondale WWTP outfall at 33°23'24"/112°21'50.4" to confluence with Gila River at 33°23'22"/112°21'48"				A&Wedw		PBC			
MG	Alvord Park Lake	Urban Lake- 35th Avenue & Baseline Road, Phoenix at 33°22'34"/112°08'11" 33°22'23"/112°08'20"	Urban		A&Ww			PBC		FC	
MG	Andorra Wash (EDW)	Town of Cave Creek WWTP outfall #1 at 33°50'00"/111°56'32" Headwaters to confluence with Cave Creek Wash at 33°49'54"/111°57'57.4"			A&We	A&Wedw		PBC			
MG	Antelope Creek	Tributary Headwaters to confluence with Martinez Creek at 34°16'37"/112°08'46"			A&Ww		FBC		FC		AgL
MG	Arlington Canal	From Gila River at 33°20'54"/112°35'39" to Gila River at 33°13'44"/112°46'15"									AgL
MG	Ash Creek	Headwaters to confluence with Tex Canyon at 34°34'44"/112°07'18"		A&Wc			FBC		FC	AgL	AgL
MG	Ash Creek	Below confluence with Tex Canyon to confluence with Agua Fria at 34°19'34"/112°04'30" River			A&Ww		FBC		FC	AgL	AgL
MG	Beehive Tank	32°52'36"/111°02'19" 32°52'37"/111°02'20"			A&Ww		FBC		FC		AgL
MG	Big Bug Creek	Headwaters to confluence with Eugene Gulch at 34°27'11"/112°18'28.5"		A&Wc			FBC		FC	AgL	AgL
MG	Big Bug Creek	Below confluence with Eugene Gulch to confluence with Agua Fria River at 34°18'54"/112°02'58"			A&Ww		FBC		FC	AgL	AgL
MG	Black Canyon Creek	Tributary Headwaters to confluence with the Agua Fria River at 34°04'12"/112°09'29"			A&Ww		FBC		FC		AgL
MG	Blind Indian Creek	Tributary Headwaters to confluence with the Hassavampa River at 34°12'40"/112°32'17"			A&Ww		FBC		FC		AgL
MG	Bonsall Park Lake	Urban Lake- 59th Avenue & Bethany Home Road, Phoenix at 33°31'23"/112°11'05" 33°31'24"/112°11'08"	Urban		A&Ww			PBC		FC	
MG	Canal Park Lake	Urban Lake- College Avenue & Curry Road, Tempe at 33°26'57"/111°56'14" 33°26'54"/111°56'19"	Urban		A&Ww			PBC		FC	
MG	Cave Creek	Headwaters to the Cave Creek Dam			A&Ww		FBC		FC		AgL
MG	Cave Creek	Cave Creek Dam to the Arizona Canal at 33°34'24"/112°06'25"				A&We		PBC			
MG	Centennial Wash	Tributary Headwaters to confluence with the Gila River at 33°13'44"/112°46'16" 33°16'32"/112°48'08"			A&We			PBC			AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
MG	Centennial Wash Ponds	33°55'40"/113°23'05" 33°54'52"/113°23'47"		A&Ww			FBC		FC		AgL
MG	Chaparral Park Lake	Urban Lake; Hayden Road & Chaparral Road, Scottsdale at 33°30'41"/111°54'25" 33°30'40"/111°54'27"	Urban	A&Ww			PBC		FC	AgL	
MG	Cortez Park Lake	Urban Lake; 35th Avenue & Dunlap, Glendale at 33°24'13"/112°07'51" 33°34'13"/112°07'52"	Urban	A&Ww			PBC		FC	AgL	
MG	Desert Breeze Lake	Urban Lake; Galaxy Drive, West Chandler at 33°18'47.5"/111°55'08" 33°18'47"/111°55'10"	Urban	A&Ww			PBC		FC		
MG	Devils Canyon	Tributary Headwaters to confluence with Mineral Creek at 33°12'58"/110°59'42"		A&Ww			FBC		FC		AgL
MG	Dobson Lake	Urban Lake; Dobson Road & Los Lagos Vista Avenue, Mesa at 33°22'17"/111°53'12" 33°22'48"/111°52'35"	Urban	A&Ww			PBC		FC		
MG	East Maricopa Floodway	From Brown and Greenfield Rds to the Gila River Indian Reservation Boundary		A&We			PBS				AgL
MG	Eldorado Park Lake	Urban Lake; Miller Road & Oak Street, Tempe at 33°28'25"/111°54'51" 33°28'25"/111°54'53"	Urban	A&Ww			PBC		FC		
MG	Encanto Park Lake	Urban Lake; 15th Avenue & Encanto Blvd., Phoenix at 33°28'36"/112°05'17" 33°28'28"/112°05'18"	Urban	A&Ww			PBC		FC	AgL	
MG	Fain Lake	City Town of Prescott Valley Park Lake 34°34'29"/112°21'03" 34°34'29"/112°21'06"	Urban	A&Ww			PBC		FC		
MG	French Gulch	Headwaters to confluence with Hassayampa River		A&Ww			PBC				AgL
MG	Galena Gulch	Tributary Headwaters to confluence with the Agua Fria River at 34°28'37"/112°15'14"			A&We		PBC				AgL
MG	Galloway Wash (EDW)	Town of Cave Creek WWTP outfall #2 at 33°49'58"/111°57'30" 33°50'15"/111°57'35" to confluence with Andorra Wash at 33°49'59"/111°57'41" Cave Creek				A&Wedw	PBC				
MG	Gila River	San Carlos Indian Reservation boundary to the Ashurst-Hayden Dam at 33°06'01"/111°14'46"		A&Ww			FBC		FC	AgL	AgL
MG	Gila River	Ashurst-Hayden Dam to the Town of Florence WWTP outfall at 33°02'30"/111°24'16" 33°02'20"/111°24'19"			A&We		PBC				AgL
MG	Gila River (EDW)	Town of Florence WWTP outfall to Felix Road at 33°01'49"/111°17'16"				A&Wedw	PBC				
MG	Gila River	Felix Road to the Gila River Indian Reservation boundary			A&We		PBC				AgL
MG	Gila River (EDW)	From the confluence with the Salt River to the Gillespie Dam at 33°13'45"/112°46'07"				A&Wedw	PBC		FC	AgL	AgL
MG	Gila River	Gillespie Dam to confluence with Painted Rock Dam at 33°04'23"/113°00'40"		A&Ww			FBC		FC	AgL	AgL
MG	Granada Park Lake	Urban Lake; 6505 North 20th Street, Phoenix at 33°21'58.6"/112°02'06" 33°31'56"/112°02'16"	Urban	A&Ww			PBC		FC		
MG	Groom Creek	Tributary Headwaters to confluence with the Hassayampa River at 34°27'14"/112°29'24"		A&Wc			FBC		DWS	FC	AgL
MG	Hank Raymond-Lake Lower Lake Pleasant	33°50'18"/112°16'07" 33°50'32"/112°16'03"		A&Ww			FBC		FC	AgL	AgL
MG	Hassayampa Lake	34°25'45"/112°25'29" 34°25'45"/112°25'33"	Igneous	A&Wc			FBC		DWS	FC	
MG	Hassayampa River	Headwaters to confluence with unnamed tributary at 34°26'09"/112°30'32"		A&Wc			FBC		FC	AgL	AgL
MG	Hassayampa River	Below confluence with unnamed tributary to 8 miles south of Wickenburg confluence with unnamed tributary at 33°51'52"/112°39'56"		A&Ww			FBC		FC	AgL	AgL
MG	Hassayampa River	8 miles south of Wickenburg Below unnamed tributary to the Buckeye Irrigation Company Canal at 33°23'38"/112°22'22.8"			A&We		PBC				AgL
MG	Hassayampa River	Below Buckeye Irrigation Company canal to the Gila River at 33°19'34"/112°42'39.6"			A&Ww		FBC		FC		AgL
MG	Horsethief Lake	34°09'42"/112°17'56" 34°09'42"/112°17'57"	Igneous	A&Wc			FBC		DWS	FC	AgL
MG	Indian Bend Wash	Tributary Headwaters to confluence with the Salt River at 33°26'13"/111°54'58"			A&We		PBC				
MG	Indian Bend Wash Lakes	Urban Lakes; Scottsdale at 33°30'31"/111°54'24" 33°30'32"/111°54'24"	Urban	A&Ww			PBC		FC		
MG	Indian School Park Lake	Urban Lake; Indian School Road & Hayden Road, Scottsdale at 33°29'45"/111°54'33" 33°29'39"/111°54'37"	Urban	A&Ww			PBC		FC		
MG	Kiwanis Park Lake	Urban Lake; 6000 South Mill Avenue, Tempe at 33°22'27"/111°56'21" 33°22'27"/111°56'22"	Urban	A&Ww			PBC		FC	AgL	
MG	Lake Pleasant	33°51'15"/112°16'15" 33°53'46"/112°16'29"	Deep	A&Ww			FBC		DWS	FC	AgL
MG	The Lake Tank	32°54'14"/111°04'15"		A&Ww			FBC		FC		AgL
MG	Lion Canyon	Tributary Headwaters to confluence with Weaver Creek at 34°10'12"/112°41'49"			A&Ww		FBC		FC		AgL
MG	Little Ash Creek	Tributary Headwaters to confluence with Ash Creek at 34°20'46"/112°04'16"			A&Ww		FBC		FC		AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
MG	Lynx Creek	Headwaters to confluence with unnamed tributary at 34°34'29"/112°21'05" 34°34'29"/112°21'07"		A&Wc			FBC		FC		AgL
MG	Lynx Creek	Below confluence with unnamed tributary to confluence with Agua Fria River at 34°37'49"/112°14'42"			A&Ww		FBC		FC		AgL
MG	Lynx Lake	34°21'08"/112°23'05" 34°31'07"/112°23'07"	Deep	A&Wc			FBC		DWS	FC	AgL
MG	Maricopa Park Lake	33°35'30"/112°18'46" 33°35'28"/112°18'15"	Urban		A&Ww			PBC		FC	
MG	Martinez Canyon	Tributary Headwaters to confluence with Box Canyon at 33°06'33"/111°12'48"			A&Ww		FBC			FC	AgL
MG	Martinez Creek	Tributary Headwaters to confluence with the Hassavampa River at 33°59'56"/112°44'38"			A&Ww		FBC			FC	AgL
MG	McKellips Park Lake	Urban Lake; Miller Road & McKellips Road, Scottsdale at 33°27'14"/111°54'45" 33°27'14"/111°54'49"	Urban		A&Ww				PBC		FC
MG	McMicken Wash (EDW)	City of Peoria Jomax WWTP outfall at 33°43'30"/112°20'14" 33°43'31"/112°20'15" to confluence of McMicken Wash with Agua Fria River at 33°39'39"/112°18'56"				A&Wedw			PBC		
MG	Mineral Creek	Tributary Headwaters to the Gila River at 34°17'42"/112°12'34" 33°12'34"/110°59'58"			A&Ww		FBC			FC	AgL
MG	Mineral Creek (diversion tunnel and lined channel)	33°12'24"/110°59'58" to 33°07'56"/110°58'34"							PBC		
MG	Mineral Creek	End of diversion channel to confluence with Gila River			A&Ww				FBC		FC
MG	Minnehaha Creek	Tributary Headwaters to confluence with the Hassavampa River at 34°11'49"/112°32'24"			A&Ww		FBC			FC	AgL
MG	Mountain Valley Park Ponds (EDW)	Town of Prescott Valley WWTP outfall 002 at 34°26'07"/112°18'48" 34°26'07"/112°18'48" to Navajo Wash	EDW			A&Wedw			PBC		
MG	New River	Headwaters to H7 at 33°54'19.5"/112°08'46" Interstate 17			A&Ww		FBC			FC	AgL
MG	New River	Below H7 Interstate 17 to confluence with Agua Fria River at 33°30'47"/112°18'14"				A&We			PBC		AgL
MG	Painted Rock Reservoir	33°04'15"/113°00'30" 33°04'23"/113°00'38"	Sedimentary		A&Ww		FBC			FC	AgL
MG	Papago Park Ponds	Urban Lake; Galvin Parkway, Phoenix at 33°26'56"/111°56'50" 33°27'15"/111°56'45"	Urban		A&Ww				PBC		FC
MG	Papago Park South Pond	Urban Lake; Curry Road, Tempe 33°26'22"/111°55'55"	Urban		A&Ww				PBC		FC
MG	Perry Mesa Tank	34°11'03"/112°01'59" 34°11'03"/112°02'01"			A&Ww		FBC			FC	AgL
MG	Phoenix Area Canals	Granite Reef Dam to all municipal WTP intakes								DWS	AgL
MG	Phoenix Area Canals	Below municipal WTP intakes and all other locations									AgL
MG	Picacho Reservoir	32°51'17"/111°28'49" 32°51'10"/111°28'25"	Shallow		A&Ww		FBC			FC	AgL
MG	Poland Creek	Headwaters to confluence with Lorena Gulch at 34°12'32"/112°19'07"			A&Wc		FBC			FC	AgL
MG	Poland Creek	Below confluence with Lorena Gulch to confluence with Black Canyon Creek at 34°14'20"/112°12'54"			A&Ww		FBC			FC	AgL
MG	Queen Creek	Headwaters to the Town of Superior WWTP outfall at 33°16'45"/111°17'25" 33°16'33"/111°07'44"			A&Ww				PBC		AgL
MG	Queen Creek (EDW)	Below Town of Superior WWTP outfall to confluence with Potts Canyon at 33°17'17"/111°11'36"				A&Wedw			PBC		
MG	Queen Creek	Below Potts Canyon to Queen Valley golf course at 33°17'55"/111°17'17" Whitlow Dam			A&Ww		FBC			FC	AgL
MG	Queen Creek	Below Queen Valley golf course Whitlow Dam to confluence with Gila River at 33°09'50"/111°53'16.8"				A&We			PBC		
MG	Riverview Park Lake	Urban Lake; Dobson Road & 8th Street, Mesa at 33°25'50"/111°52'29" 33°25'50"/111°52'29"	Urban		A&Ww				PBC		FC
MG	Roadrunner Park Lake	Urban Lake; 36th Street & Cactus, Phoenix at 33°35'57"/112°00'18" 33°35'56"/112°00'21"	Urban		A&Ww				PBC		FC
MG	Salt River	Verde River to 2 km below Granite Reef Dam (Granite Reef Dam is at 31°26'23"/111°12'40")			A&Ww		FBC			DWS	FC
MG	Salt River	2 km below Granite Reef Dam to City of Mesa NW WRF outfall at 33°26'45"/111°56'35" 33°26'22"/111°53'14"				A&We			PBC		
MG	Salt River (EDW)	City of Mesa NW WRF outfall at 33°26'45"/111°56'35" to Tempe Town Lake at 33°26'01"/111°54'55"				A&Wedw			PBC		
MG	Salt River	Below Tempe Town Lake to I-10 Interstate 10 bridge				A&We			PBC		

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
MG	Salt River	1-40 Below Interstate 10 bridge to the City of Phoenix 23rd Avenue WWTP outfall at 33°25'03"/112°06'41.6" 33°24'44"/112°07'59"		A&Ww			PBC		FC		
MG	Salt River (EDW)	From City of Phoenix 23rd Avenue WWTP outfall to confluence with Gila River at 33°22'55"/112°18'21.6"				A&Wedw	PBC		FC	AgI	AgL
MG	Siphon Draw (EDW)	Superstition Mountains CED WWTP outfall at 33°21'40"/111°33'30" to 6 km downstream at 32°21'04"/111°36'59"				A&Wedw	PBC				
MG	Sycamore Creek	Headwaters to confluence with Tank Canyon at 34°19'32"/111°50'12"		A&Wc			FBC		FC		AgL
MG	Sycamore Creek	Below confluence with Tank Canyon to the confluence with Agua Fria River at 34°19'30"/112°04'12"		A&Ww			FBC		FC		AgL
MG	Tempe Town Lake	At Mill Avenue Bridge at 33°26'30"/111°53'30" 33°26'00"/111°56'26"	Urban	A&Ww			FBC		FC		
MG	Tule Creek	Tributary Headwaters to confluence with the Agua Fria River at 33°57'25"/112°14'12"		A&Ww			FBC		FC		AgL
MG	Turkey Creek	Headwaters to confluence with unnamed tributary at 34°19'28"/112°21'28" 34°19'28"/112°21'33"		A&Wc			FBC		FC	AgI	AgL
MG	Turkey Creek	Below confluence with unnamed tributary to confluence with Poland Creek at 34°14'20"/112°12'54"		A&Ww			FBC		FC	AgI	AgL
MG	Unnamed Wash (EDW)	City of Phoenix Cave Creek WRF outfall at 33°45'20"/112°00'59" to unnamed wash to 0.5 km downstream at 33°35'07"/112°01'12"				A&Wedw	PBC				
MG	Unnamed Wash (EDW)	Gila Bend WWTP outfall to confluence with the Gila River at 32°58'13"/112°43'46"				A&Wedw	PBC				
MG	Unnamed Wash (EDW)	Luke Air Force Base WWTP outfall at 33°32'00"/112°19'03" to confluence with the Agua Fria River at 32°22'21"/112°19'15"				A&Wedw	PBC				
MG	Unnamed Wash (EDW)	North Florence Gardens WWTP outfall at 33°03'49.54"/111°23'13.28" 33°03'50"/111°23'13" to confluence with Gila River at 33°02'59"/111°23'15"				A&Wedw	PBC				
MG	Unnamed Wash (EDW)	Town of Prescott Valley WWTP outfall at 34°35'16"/112°16'18" to confluence with the Agua Fria River at 34°35'16"/112°16'18"				A&Wedw	PBC				
MG	Unnamed Wash (EDW)	Town of Cave Creek WRF outfall at 33°48'02"/111°59'22" to confluence with Cave Creek				A&Wedw	PBC				
MG	Unnamed Wash (EDW)	Queen Valley Sanitary District WWTP outfall at 33°17'38"/111°18'31" to the confluence with Queen Creek				A&Wedw	PBC				
MG	Wagner Wash (EDW)	City of Buckeye Festival Ranch WRF outfall at 33°39'14"/112°40'18" to 2 km downstream				A&Wedw	PBC				
MG	Vista Del Camino Park North	Urban Lake; 7700 East Roosevelt Street, Scottsdale at 33°27'33"/111°54'49.3" 33°27'33"/111°54'52"	Urban	A&Ww			PBC		FC		
MG	Walnut Canyon Creek	Tributary Headwaters to confluence with the Gila River at 33°06'47"/111°05'20"		A&Ww			FBC		FC		AgL
MG	Weaver Creek	Tributary to Martinez Creek at 34°03'18"/112°46'48" Headwaters to confluence with Antelope Creek		A&Ww			FBC		FC		AgL
MG	White Canyon Creek	Tributary Headwaters to confluence with Walnut Canyon Creek at 33°09'25"/111°04'48"		A&Ww			FBC		FC		AgL
SC	Agua Caliente Lake	Urban Lake; 12325 East Roger Road, Tucson 32°16'51"/110°43'52"	Urban	A&Ww			PBC		FC		
SC	Agua Caliente Wash	Headwaters to confluence with Soldier Trail at 32°17'48"/110°42'58.5"		A&Ww			FBC		FC		AgL
SC	Agua Caliente Wash	Below Soldier Trail to confluence with Tanque Verde Creek at 32°14'35"/110°47'17"				A&We	PBC				AgL
SC	Aguirre Wash	These reaches not located on From the Tohono O'odham Indian Reservation boundary to 32°28'38"/111°46'51"				A&We	PBC				
SC	Alambre Wash	Tributary Headwaters to confluence with Brawley Wash at 31°57'47"/111°23'28"				A&We	PBC				
SC	Alamo Wash	Tributary Headwaters to confluence with Rillito Creek at 32°16'22"/110°54'18"				A&We	PBC				
SC	Altar Wash	Tributary Headwaters to confluence with Brawley Wash at 31°57'47"/111°23'28"				A&We	PBC				
SC	Alum Gulch	Headwaters to 31°28'20"/110°43'51"				A&We	PBC				AgL
SC	Alum Gulch	From 31°28'20"/110°43'51" to 31°29'17"/110°44'25"		A&Ww			FBC		FC		AgL
SC	Alum Gulch	Below 31°29'17"/110°44'25" to confluence with Sonoita Creek at 31°20'58"/110°47'06"				A&We	PBC				AgL
SC	Arivaca Creek	Tributary Headwaters to confluence with Altar Wash at 31°43'01"/111°25'41"		A&Ww			FBC		FC		AgL
SC	Arivaca Lake	31°21'50"/111°15'05" 31°31'52"/111°15'06"	Igneous	A&Ww			FBC		FC	AgI	AgL
SC	Atterbury Wash	Tributary Headwaters to confluence with Pantano Wash at 32°10'52"/110°48'50"				A&We	PBC				AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SC	Bear Grass Tank	34°33'01"/111°11'32" 31°33'01"/111°11'03"		A&Ww			FBC		FC		AgL
SC	Big Wash	Tributary Headwaters to confluence with Cañada del Oro at 32°24'47"/110°56'28"			A&We			PBC			
SC	Black Wash (EDW)	Pima County WWM D Avra Valley WWTP outfall at 32°09'50"/111°10'49" 32°09'58"/111°11'17" to confluence with Brawley Wash at 32°15'00"/111°14'34"				A&Wedw		PBC			
SC	Bog Hole Tank	34°28'34"/110°37'07" 31°28'36"/110°37'09"		A&Ww			FBC		FC		AgL
SC	Brawley Wash	Tributary Headwaters to confluence with Los Robles Wash at 32°21'54"/111°17'31"			A&We			PBC			
SC	California Gulch	South of Ruby Headwaters To U.S./Mexico border		A&Ww			FBC		FC		AgL
SC	Cañada del Oro	Headwaters to Highway 89 at 32°24'48"/110°56'14" State Route 77		A&Ww			FBC		FC	AgL	AgL
SC	Cañada del Oro	Below Highway 89 State Route 77 to confluence with the Santa Cruz River at 32°19'30"/111°03'47"			A&We			PBC			AgL
SC	Cienega Creek	Headwaters to confluence with Gardner Canyon and Spring Water Canyon at 31°47'38"/110°25'17"		A&Ww			FBC		FC		AgL
SC	Cienega Creek (OAW)	From confluence with Gardner Canyon and Spring Water Canyon to USGS gaging station at 32°02'09"/110°40'34" (becomes Pantano Wash below this point) (#09484600)		A&Ww			FBC		FC		AgL
SC	Davidson Canyon	Headwaters to unnamed spring at 31°59'00"/110°38'49"			A&We			PBC			AgL
SC	Davidson Canyon (OAW)	Unnamed From unnamed Spring to confluence with unnamed tributary at 31°59'32.5"/110°38'43.5" 31°59'09"/110°38'44"		A&Ww			FBC		FC		AgL
SC	Davidson Canyon (OAW)	From Below confluence with unnamed tributary to unnamed spring at 32°00'54"/110°38'54" 32°00'40"/110°38'36"			A&We			PBC			AgL
SC	Davidson Canyon (OAW)	From unnamed spring at 32°00'54"/110°38'54" to confluence with Cienega Creek at 32°01'05"/110°38'32"		A&Ww			FBC		FC		AgL
SC	Empire Gulch	Headwaters to unnamed spring at 31°47'14"/110°38'12" 31°47'18"/110°38'17"			A&We			PBC			
SC	Empire Gulch	From 31°47'14"/110°38'13" 31°47'18"/110°38'17" to 31°47'11"/110°00'39" 31°47'03"/110°37'35"		A&Ww			FBC		FC		
SC	Empire Gulch	Below 31°47'11"/110°00'39" From 31°47'03"/110°37'35" to 31°47'18"/110°36'57" 31°47'05"/110°36'58"			A&We			PBC			AgL
SC	Empire Gulch	From 31°47'18"/110°36'57" 31°47'05"/110°36'58" to confluence with Cienega Creek at 31°48'32"/110°35'29"		A&Ww			FBC		FC		
SC	Flux Canyon	Tributary Headwaters to confluence with Alum Canyon at 31°30'22"/110°46'41"			A&We			PBC			AgL
SC	Gardner Canyon Creek	Headwaters to confluence with Sawmill Canyon at 31°42'51"/110°44'43"		A&Wc			FBC		FC		
SC	Gardner Canyon Creek	Below Sawmill Canyon to confluence with Cienega Creek at 31°47'28"/110°25'17"		A&Ww			FBC		FC		
SC	Greene Wash	Tributary Greene Reservoir at 32°37'09"/111°24'12" to the Santa Cruz River at 32°00'54"/111°59'46" Tohono O'odham Indian Reservation boundary			A&We			PBC			
SC	Greene Wash	Tohono O'odham Indian Reservation boundary to confluence with Santa Rosa Wash at 32°53'52"/111°56'48"			A&We			PBC			
SC	Harshaw Creek	Tributary Headwaters to confluence with Sonoita Creek at 31°32'35"/110°44'42"			A&We			PBC			AgL
SC	Hit Tank	32°43'57"/111°03'18"		A&Ww			FBC		FC		AgL
SC	Holden Canyon Creek	Headwaters to U.S./Mexico border at 31°23'38"/111°15'54" in the Coronado National Forest			A&Ww		FBC		FC		
SC	Huachuca Tank	31°21'41"/110°30'12" 31°21'11"/110°30'18"		A&Ww			FBC		FC		AgL
SC	Julian Wash	Tributary Headwaters to confluence with the Santa Cruz River at 32°11'20"/110°59'13"			A&We			PBC			
SC	Kennedy Lake	Urban Lake; Mission Road & Ajo Road, Tucson at 32°10'48.5"/111°00'27" 32°10'49"/111°00'27"	Urban	A&Ww				PBC		FC	
SC	Lakeside Lake	Urban Lake; 8300 East Stella Road, Tucson at 32°11'10.5"/110°49'00" 32°11'11"/110°49'00"	Urban	A&Ww				PBC		FC	
SC	Lemmon Canyon Creek	Headwaters to confluence with unnamed tributary at 32°23'47"/110°47'46" 32°23'48"/110°47'49"		A&Wc			FBC		FC		
SC	Lemmon Canyon Creek	Below unnamed tributary to confluence with Sabino Canyon Creek at 32°23'02"/110°47'28"			A&Ww		FBC		FC		
SC	Los Robles Wash	Tributary Headwaters to confluence with the Santa Cruz River at 32°32'13"/111°23'53"			A&We			PBC			
SC	Madera Canyon Creek	Headwaters to confluence with unnamed tributary at 31°43'42"/110°52'50" 31°43'42"/110°52'51"		A&Wc			FBC		FC		AgL
SC	Madera Canyon Creek	Below unnamed tributary to confluence with the Santa Cruz River at 31°46'55"/111°00'58"		A&Ww			FBC		FC		AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SC	Mattie Canyon	Tributary Headwaters to confluence with Cienega Creek at 31°54'31"/110°34'25"			A&Ww		FBC		FC		AgL
SC	Nogales Wash	Tributary Headwaters to confluence with Potrero Creek at 31°24'07"/110°57'11"			A&Ww			PBC	FC		
SC	Oak Tree Canyon	Tributary Headwaters to confluence with Cienega Creek at 31°48'43"/110°35'24"				A&We		PBC			
SC	Palisade Canyon Creek	Headwaters to confluence with unnamed tributary at 32°22'34"/110°45'35" 32°21'59"/110°46'16"		A&Wc			FBC		FC		
SC	Palisade Canyon Creek	Below unnamed tributary to confluence with Sabino Canyon Creek at 32°21'54"/110°46'23"			A&Ww		FBC		FC		
SC	Pantano Wash	Tributary Headwaters to confluence with Tanque Verde Creek at 32°16'22"/110°54'48"				A&We		PBC			
SC	Paradise Lake	32°44'18"/111°40'42"	Urban		A&Ww			PBC			AgL
SC	Parker Canyon Creek	Headwaters to confluence with unnamed tributary at 31°24'17"/110°28'44.5" 31°24'17"/110°28'47"		A&Wc			FBC		FC		
SC	Parker Canyon Creek	Below unnamed tributary to U.S./Mexico border at 31°19'59"/110°33'58"			A&Ww		FBC		FC		
SC	Parker Canyon Lake	31°25'35"/110°27'15"	Deep		A&Wc		FBC		FC	AgL	AgL
SC	Patagonia Lake	31°29'30"/110°52'00" 31°29'56"/110°50'49"	Deep		A&Ww		FBC		FC	AgL	AgL
SC	Peña Blanca Lake	31°24'12"/111°05'04" 31°24'15"/111°05'12"	Igneous		A&Ww		FBC		FC	AgL	AgL
SC	Potrero Creek	Headwaters to Interstate 19 at 31°22'24"/110°57'30"				A&We		PBC			AgL
SC	Potrero Creek	Below Interstate 19 to confluence with Santa Cruz River at 31°22'07"/110°57'40"			A&Ww		FBC		FC		AgL
SC	Puertocito Wash	Tributary Headwaters to confluence with Altar Wash at 31°43'01"/111°25'41"				A&We		PBC			
SC	Quitobaquito Spring	(Pond and Springs) 31°56'39"/113°01'06"			A&Ww		FBC		FC		AgL
SC	Redrock Canyon Creek	Tributary Headwaters to confluence with Harshaw Creek at 31°32'35"/110°44'13"			A&Ww		FBC		FC		
SC	Rillito Creek	Tributary Headwaters to confluence with the Santa Cruz River at 32°18'50"/111°03'48"				A&We		PBC			AgL
SC	Romero Canyon Creek	Headwaters to confluence with unnamed tributary at 32°24'30"/110°50'35" 32°24'29"/110°50'39"		A&Wc			FBC		FC		
SC	Romero Canyon Creek	Below unnamed tributary to confluence with Sutherland Wash at 32°25'52"/110°53'56"			A&Ww		FBC		FC		
SC	Rose Canyon Creek	Tributary Headwaters to Rose Canyon Lake at 32°23'40"/110°43'01"		A&Wc			FBC		FC		
SC	Rose Canyon Lake	32°23'13"/110°42'38"	Igneous		A&Wc		FBC		FC		AgL
SC	Ruby Lakes	Near the town of Ruby at 31°26'28.5"/111°14'19" 31°26'29"/111°14'22"	Igneous		A&Ww		FBC		FC		AgL
SC	Sabino Canyon Creek	Headwaters to confluence with unnamed tributary at 32°23'28"/110°47'00" 32°23'28"/110°47'03"		A&Wc			FBC		DWS	FC	AgL
SC	Sabino Canyon Creek	Below unnamed tributary to confluence with Tanque Verde River at 32°15'40"/110°49'30"			A&Ww		FBC		DWS	FC	AgL
SC	Salero Ranch Tank	31°25'42"/110°53'22" 31°35'43"/110°53'25"			A&Ww		FBC		FC		AgL
SC	Santa Cruz River	Headwaters to the International Boundary at 31°19'58"/110°35'48" U.S./Mexico border			A&Ww		FBC		FC	AgL	AgL
SC	Santa Cruz River	International Boundary U.S./Mexico border to the Nogales International WWTP outfall at 31°27'24"/110°58'05" 31°27'25"/110°58'04"			A&Ww		FBC		DWS	FC	AgL
SC	Santa Cruz River (EDW)	Nogales International WWTP outfall to the Tubac Bridge at 31°26'25"/110°02'00"					A&Wedw	PBC			AgL
SC	Santa Cruz River	The Tubac Bridge to Roger Road-WWTP Agua Nueva WRF outfall at 32°17'04"/111°01'45"				A&We		PBC			AgL
SC	Santa Cruz River (EDW)	Roger Road-WWTP Agua Nueva WRF outfall to Baumgartner Road at 32°35'37"/111°28'08"					A&Wedw	PBC			
SC	Santa Cruz River, West Branch	Headwaters to the confluence with Santa Cruz River				A&We		PBC			AgL
SC	Santa Cruz Wash	Baumgartner Road to the Ak Chin Indian Reservation boundary				A&We		PBC			AgL
SC	Santa Cruz Wash, West Branch	Tributary to the Santa Cruz Wash at 32°12'07"/110°59'20"				A&We		PBC			AgL
SC	Santa Cruz Wash, North Branch	Tributary to the Santa Cruz Wash at 32°55'55"/111°52'10" Headwaters to City of Casa Grande WRF outfall at 32°54'57"/111°47'13"				A&We		PBC			
SC	Santa Cruz Wash, North Branch (EDW)	City of Casa Grande WRF outfall at 32°54'57"/111°47'13" to 1 km downstream at 32°54'49"/111°47'48"					A&Wedw	PBC			
SC	Santa Rosa Wash	Below Tohono O'odham Indian Reservation to the Ak Chin Indian Reservation				A&We		PBC			



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SC	Santa Rosa Wash (EDW)	Palo Verde Utilities WWTP outfall at 33°04'20"/112°01'47" to the Gila River Indian Reservation				A&Wedw	PBC				
SC	Soldier Lake	32°25'34"/110°44'41" 32°25'34"/110°44'43"		A&Wc			FBC		FC		AgL
SC	Sonoita Creek	Headwaters to the Town of Patagonia WWTP outfall at 31°32'45"/110°45'30" 31°32'25"/110°45'31"			A&We		PBC				AgL
SC	Sonoita Creek (EDW)	Town of Patagonia WWTP outfall to permanent groundwater upwelling point approximately 1600 feet downstream of outfall				A&Wedw	PBC				AgL
SC	Sonoita Creek	Below 1600 feet downstream of Town of Patagonia WWTP outfall groundwater upwelling point to confluence with the Santa Cruz River at 31°29'42"/110°58'37"			A&Ww		FBC		FC	AgI	AgL
SC	Split Tank	31°28'15"/111°05'45" 31°28'11"/111°05'12"			A&Ww		FBC		FC		AgL
SC	Sutherland Wash	Tributary Headwaters to confluence with Cañada del Oro at 32°25'05"/110°55'26"			A&Ww		FBC		FC		
SC	Sycamore Canyon	Headwaters to 32°21'60" / 110°44'48"			A&Wc		FBC		FC		
SC	Sycamore Canyon	From 32°21'36"/110°45'21" 32°21'60" / 110°44'48" to Sycamore Reservoir			A&Ww		FBC		FC		
SC	Sycamore Canyon Creek	Headwaters to the U.S./Mexico border at 31°22'48"/111°13'49"			A&Ww		FBC		FC		AgL
SC	Sycamore Reservoir	32°20'57"/110°44'52" 32°20'57"/110°47'38"			A&Wc		FBC		FC		AgL
SC	Tanque Verde Creek	Headwaters to Houghton Road at 32°14'13"/110°46'04"			A&Ww		FBC		FC		AgL
SC	Tanque Verde Creek	Below Houghton Road to confluence with Rillito Creek at 32°16'08"/110°52'30"			A&We		PBC				AgL
SC	The Lake Tank	32°54'14"/111°04'14"			A&Ww		FBC		FC		AgL
SC	Three R Canyon	Headwaters to 31°28'35"/110°46'49" 31°28'26"/110°46'04"			A&We		PBC				AgL
SC	Three R Canyon	From 31°28'35"/110°46'49" 31°28'26"/110°46'04" to 31°28'27"/110°47'12" 31°28'28"/110°47'15"			A&Ww		FBC		FC		AgL
SC	Three R Canyon	From 31°28'27"/110°47'12" 31°28'28"/110°47'15" to confluence with Sonoita Creek at 31°29'56"/110°48'54"			A&We		PBC				AgL
SC	Tinaja Wash	Headwaters to confluence with the Santa Cruz River at 31°32'58.4"/111°02'45.7"			A&We		PBC				AgL
SC	Unnamed Wash (EDW)	Oracle Sanitary District WWTP outfall at 32°36'54"/110°48'02" to 5 km downstream				A&Wedw	PBC				
SC	Unnamed Wash	5 km downstream of the Oracle Sanitary District WWTP outfall				A&We	PBC				
SC	Unnamed Wash (EDW)	Arizona City Sanitary District WWTP outfall at 32°45'47"/111°44'20" 32°45'43"/111°44'24" to confluence with Santa Cruz Wash at 35°45'45"/111°46'42"				A&Wedw	PBC				
SC	Unnamed Wash (EDW)	Saddlebrook WWTP outfall at 32°32'00"/110°52'59" 32°32'00"/110°53'01" to confluence with Cañada del Oro at 32°30'20"/110°52'27"				A&Wedw	PBC				
SC	Vekol Wash	Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations				A&We	PBC				
SC	Wakefield Canyon	Headwaters to confluence with unnamed tributary 31°52'47"/110°26'25" at 31°52'48"/110°26'27"			A&Wc		FBC		FC		AgL
SC	Wakefield Canyon	Below confluence with unnamed tributary to confluence with Cienega Creek at 31°52'47.5"/110°26'25"				A&Ww	FBC		FC		AgL
SC	Wild Burro Canyon	Headwaters to confluence with unnamed tributary at 32°28'26"/111°05'48" 32°27'43"/111°05'47"				A&Ww	FBC		FC		AgL
SC	Wild Burro Canyon	Below confluence with unnamed tributary to confluence with Santa Cruz River at 32°28'34"/111°05'45.5"				A&We	PBC				AgL
SC	Williams Ranch Tanks	31°55'45"/110°25'30" 31°55'14"/110°25'31"				A&Ww	FBC		FC		AgL
SP	Abbot Canyon	Headwaters to confluence with Whitewater Draw at 31°33'32"/109°48'39.6"				A&Ww	FBC		FC		AgL
SP	Aravaipa Creek	Headwaters to confluence with Stowe Gulch at 32°52'40"/110°22'00"				A&Ww	FBC		FC		AgL
SP	Aravaipa Creek (OAW)	Stowe Gulch confluence to downstream boundary of Aravaipa Canyon Wilderness Area at 32°54'23"/110°23'40"				A&Ww	FBC		FC		AgL
SP	Aravaipa Creek	Below downstream boundary of Aravaipa Canyon Wilderness Area to confluence with the San Pedro River at 32°50'20"/110°42'50"				A&Ww	FBC		FC		AgL
SP	Ash Creek	Chiricahua Mountains, near Whitewater Draw at 31°50'28"/109°40'04.2" Headwaters to 31°50'28"/109°40'04"				A&Ww	FBC		FC	AgI	AgL
SP	Babocomari River	Tributary Headwaters to confluence with the San Pedro River at 31°43'49"/110°11'35"				A&Ww	FBC		FC		AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural
SP	Bass Canyon Creek	Headwaters to confluence with unnamed tributary at 32°26'06"/110°13'18" 32°26'06"/110°13'22"		A&Wc			FBC		FC	AgL
SP	Bass Canyon Creek	Below confluence with unnamed tributary to confluence with Hot Springs Canyon Creek at 32°20'53"/110°15'14"			A&Ww		FBC		FC	AgL
SP	Bass Canyon Tank	32°24'00"/110°13'00"			A&Ww		FBC		FC	AgL
SP	Bear Creek	Headwaters to U.S./Mexico border at 31°49'59"/110°22'58.5"			A&Ww		FBC		FC	AgL
SP	Big Creek	Tributary Headwaters to confluence with Pitchfork Canyon at 32°35'24"/109°57'07"		A&Wc			FBC		FC	AgL
SP	Blacktail Pond	Fort Huachuca Military Reservation at 31°24'13"/110°17'23"			A&Ww		FBC		FC	
SP	Blackwater Draw	Headwaters to the U.S./Mexico border at 31°20'02"/109°15'36" in the San Bernardino Valley			A&Ww		FBC		FC	AgL
SP	Booger Canyon Creek	Tributary Headwaters to confluence with Aravaipa Creek at 32°54'54"/110°29'38"			A&Ww		FBC		FC	AgL
SP	Buck Canyon	Headwaters to confluence with Buck Creek Tank at 31°23'06"/109°52'43"			A&Ww		FBC		FC	AgL
SP	Buck Canyon	Below Buck Creek Tank to confluence with Dry Creek at 31°31'08"/109°18'25"			A&We			PBC		AgL
SP	Buehman Canyon Creek (OAW)	Headwaters to confluence with unnamed tributary at 32°24'31.5"/110°32'08" 32°24'54"/110°32'10"			A&Ww		FBC		FC	AgL
SP	Buehman Canyon Creek	Below confluence with unnamed tributary at 32°25'41"/110°29'53" to confluence with San Pedro River			A&Ww		FBC		FC	AgL
SP	Bull Tank	32°21'45"/110°12'45" 32°31'13"/110°12'52"			A&Ww		FBC		FC	AgL
SP	Bullock Canyon	Tributary Headwaters to confluence with Buehman Canyon at 32°23'00"/110°23'04"			A&Ww		FBC		FC	AgL
SP	Carr Canyon Creek	Headwaters to confluence with unnamed tributary at 31°27'00"/110°15'45" 31°27'01"/110°15'48"		A&Wc			FBC		FC	AgL
SP	Carr Canyon Creek	Below confluence with unnamed tributary to confluence with the San Pedro River at 31°30'32"/110°07'37"			A&Ww		FBC		FC	AgL
SP	Copper Creek	Headwaters to confluence with Prospect Canyon at 32°44'48"/110°30'18"			A&Ww		FBC		FC	AgL
SP	Copper Creek	Below confluence with Prospect Canyon to confluence with the San Pedro River at 32°41'17"/110°26'43"			A&We			PBC		AgL
SP	Deer Creek	Headwaters to confluence with unnamed tributary at 32°59'56"/110°20'09" 32°59'57"/110°20'11"		A&Wc			FBC		FC	AgL
SP	Deer Creek	Below confluence with unnamed tributary to confluence with Aravaipa Creek at 32°54'25"/110°28'01"			A&Ww		FBC		FC	AgL
SP	Dixie Canyon	Headwaters to confluence with Mexican Canyon at 31°29'02"/109°45'04" in the Mule Mountains			A&Ww		FBC		FC	AgL
SP	Double R Canyon Creek	Tributary Headwaters to confluence with Bass Canyon at 32°21'06"/110°14'23"			A&Ww		FBC		FC	
SP	Dry Canyon	Headwaters to confluence with Abbot Canyon at 31°23'25"/109°43'23" in the Mule Mountains			A&Ww		FBC		FC	AgL
SP	East Gravel Pit Pond	Fort Huachuca Military Reservation at 31°30'54"/110°19'42" 31°30'54"/110°19'44"	Sedimentary		A&Ww		FBC		FC	
SP	Espiritu Canyon Creek	Tributary Headwaters to confluence with Soza Wash at 32°18'52"/110°28'35"			A&Ww		FBC		FC	AgL
SP	Fly Pond	Fort Huachuca Military Reservation at 31°32'53"/110°21'16"			A&Ww		FBC		FC	
SP	Fourmile Canyon Creek	Tributary Headwaters to confluence with Aravaipa Creek at 32°50'14"/110°20'08"			A&Ww		FBC		FC	AgL
SP	Fourmile Canyon, Left Prong	Headwaters to confluence with unnamed tributary at 32°42'14"/110°23'42" 32°43'15"/110°23'46"		A&Wc			FBC		FC	AgL
SP	Fourmile Canyon, Left Prong	Below confluence with unnamed tributary to confluence with Fourmile Canyon Creek at 32°47'33"/110°22'26"			A&Ww		FBC		FC	AgL
SP	Fourmile Canyon, Right Prong	Tributary Headwaters to confluence with Fourmile Canyon at 32°47'33"/110°22'36"			A&Ww		FBC		FC	AgL
SP	Gadwell Canyon	Headwaters to confluence with Whitewater Draw at 31°26'50"/109°43'41" in the Mule Mountains			A&Ww		FBC		FC	AgL
SP	Garden Canyon Creek	Headwaters to confluence with unnamed tributary at 31°29'00"/110°19'42" 31°29'01"/110°19'44"		A&Wc			FBC	DWS	FC	AgL
SP	Garden Canyon Creek	Below confluence with unnamed tributary to confluence with the San Pedro River at 31°41'46"/110°12'40"			A&Ww		FBC	DWS	FC	AgL
SP	Glance Creek	Headwaters to confluence with Whitewater Draw at 31°27'04"/109°42'29" in the Mule Mountains			A&Ww		FBC		FC	AgL
SP	Gold Gulch	Headwaters to U.S./Mexico border at 31°20'40"/109°50'06" in the Mule Mountains			A&Ww		FBC		FC	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SP	Golf Course Pond	Fort Huachuca Military Reservation at 31°32'14"/110°18'52" 44°18'49" 31°32'14"/110°18'52"	Sedimentary		A&Ww			PBC		FC	
SP	Goudy Canyon Creek	Headwaters to confluence with Grant Creek at 32°35'13"/109°58'37" in the Pinaleno Mountains			A&Wc			FBC		FC	AgL
SP	Grant Creek	Headwaters to confluence with unnamed tributary at 32°38'09.5"/109°56'35" 32°38'10"/109°56'37"			A&Wc			FBC		DWS	FC
SP	Grant Creek	Below confluence with unnamed tributary to terminus near Willcox Playa at 32°33'43"/109°58'55"			A&Ww			FBC		FC	AgL
SP	Gravel Pit Pond	Fort Huachuca Military Reservation at 31°30'51"/110°19'49" 44°19'47.6" 31°30'52"/110°19'49"	Sedimentary		A&Ww			FBC		FC	
SP	Greenbrush Draw	From Mexican U.S./Mexico border to confluence with San Pedro River				A&We		PBC			
SP	Hidden Pond	Fort Huachuca Military Reservation at 32°30'30"/109°22'17"			A&Ww			FBC		FC	
SP	High Creek	Headwaters to confluence with unnamed tributary at 32°33'07"/110°14'40" 32°33'08"/110°14'42"			A&Wc			FBC		FC	AgL
SP	High Creek	Below confluence with unnamed tributary to terminus near Willcox Playa at 32°31'41"/109°02'38"			A&Ww			FBC		FC	AgL
SP	Horse Camp Canyon Creek	Tributary Headwaters to confluence with Aravaipa Creek at 32°55'07"/110°30'56"			A&Ww			FBC		FC	AgL
SP	Hot Springs Canyon Creek	Tributary Headwaters to confluence with the San Pedro River at 32°17'24"/110°22'55"			A&Ww			FBC		FC	AgL
SP	Johnson Canyon	Headwaters to Whitewater Draw at 31°32'56"/109°46'19" in the Chiricahua Mountains 31°32'46"/109°43'32"			A&Ww			FBC		FC	AgL
SP	Lake Cochise (EDW)	South of Twin Lakes Municipal Golf Course at 32°13'58"/109°49'25" 32°13'50"/109°49'27"	EDW			A&Wedw		PBC			
SP	Leslie Canyon Creek	Headwaters to confluence with Whitewater Draw at 31°32'10"/109°40'12" in the Chiricahua Mountains			A&Ww			FBC		FC	AgL
SP	Lower Garden Canyon Pond	Fort Huachuca Military Reservation at 31°29'39"/110°18'34"			A&Ww			FBC		FC	
SP	Mexican Canyon	Headwaters to Whitewater Draw at 31°29'13"/109°46'30" in the Mule Mountains-confluence with Dixie Canyon			A&Ww			FBC		FC	AgL
SP	Miller Canyon Creek	Headwaters to Broken Arrow Ranch Road at 31°25'33"/110°15'08" 31°25'35"/110°15'04"			A&Wc			FBC		DWS	FC
SP	Miller Canyon Creek	Below Broken Arrow Ranch Road to confluence with the San Pedro River at 31°29'56"/110°07'37"			A&Ww			FBC		DWS	FC
SP	Moonshine Creek	Tributary Headwaters to confluence with Post Creek at 32°40'52"/109°54'25"			A&Wc			FBC		FC	AgL
SP	Mule Gulch	Headwaters to just above the Lavender Pit at 31°26'23.7"/109°45'36.7" 31°26'11"/109°54'02"			A&Ww			PBC		FC	
SP	Mule Gulch	Just above the The Lavender Pit to the Bisbee WWTTP outfall at 31°25'30"/109°52'40" Highway 80 bridge at 31°26'30"/109°49'28"				A&We		PBC			
SP	Mule Gulch (EDW)	Below the Bisbee WWTTP outfall to the Highway 80 bridge at 31°26'30"/109°49'28"				A&Wedw		PBC			
SP	Mule Gulch	Below the Highway 80 bridge to confluence with Whitewater Draw at 31°28'03"/109°42'21"				A&We		PBC			AgL
SP	Oak Grove Creek-Canyon	Tributary Headwaters to confluence with Turkey Creek at 32°45'32"/110°14'06"			A&Ww			FBC		FC	AgL
SP	Officers Club Pond	Fort Huachuca Military Reservation at 31°32'51"/110°21'37" 44°21'35" 31°32'51"/110°21'37"	Sedimentary		A&Ww			PBC		FC	
SP	Paige Canyon Creek	Tributary Headwaters to confluence with the San Pedro River at 32°17'10"/110°22'48"			A&Ww			FBC		FC	AgL
SP	Parsons Canyon Creek	Tributary Headwaters to confluence with Aravaipa Creek at 32°54'11"/110°27'40"			A&Ww			FBC		FC	AgL
SP	Pinery Creek	Headwaters to State Highway 181 at 32°00'24"/109°25'16"			A&Wc			FBC		DWS	FC
SP	Pinery Creek	Below State Highway 181 to terminus near Willcox Playa at 32°01'05"/109°34'23"			A&Ww			FBC		DWS	FC
SP	Post Creek	Tributary Headwaters to confluence with Grant Creek at 32°40'05"/109°54'58"			A&Wc			FBC		FC	AgL
SP	Ramsey Canyon Creek	Headwaters to Forest Service Road #110 at 31°27'44"/110°17'27" 31°27'44"/110°17'30"			A&Wc			FBC		FC	AgL
SP	Ramsey Canyon Creek	Below Forest Service Road #110 to confluence with Carr Wash at 31°30'04"/110°09'11"			A&Ww			FBC		FC	AgL
SP	Rattlesnake Canyon	Headwaters to confluence with Brush Canyon at 32°38'27"/110°21'24"			A&Wc			FBC		FC	AgL
SP	Rattlesnake Canyon	Below confluence with Brush Canyon to confluence with Aravaipa Creek at 32°48'00"/110°17'32"			A&Ww			FBC		FC	AgL
SP	Redfield Canyon Creek	Headwaters to confluence with unnamed tributary at 32°33'09"/110°18'44" 32°33'40"/110°18'42"			A&Wc			FBC		FC	AgL
SP	Redfield Canyon Creek	Below confluence with unnamed tributary to confluence with the San Pedro River at 32°09'32"/110°17'56"			A&Ww			FBC		FC	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SP	Riggs Flat Lake	32°42'27"/109°57'51" 32°42'28"/109°57'53"	Igneous	A&Wc			FBC		FC	AgI	AgL
SP	Rock Creek	Tributary Headwaters to confluence with Turkey Creek at 31°53'20"/109°30'00" Alc					FBC		FC		AgL
SP	Rucker Canyon Creek	Headwaters to confluence with Whitewater Draw at 31°44'46"/109°26'06"	Igneous	A&Wc			FBC		FC		AgL
SP	Rucker Canyon Lake	31°46'46"/109°18'30"	Shallow	A&Wc			FBC		FC		AgL
SP	San Pedro River	U.S./ Mexico Border to Redington at 32°25'39"/110°29'32"			A&Ww		FBC		FC	AgI	AgL
SP	San Pedro River	From Redington to confluence with the Gila River at 32°59'02"/110°46'55"			A&Ww		FBC		FC		AgL
SP	Snow Flat Lake	32°29'09"/109°51'52" 32°39'10"/109°51'54"	Igneous	A&Wc			FBC		FC	AgI	AgL
SP	Soldier Creek	Tributary Headwaters to confluence with Post Creek at 32°40'52"/109°54'40" 32°40'50"/109°54'41"		A&Wc			FBC		FC		AgL
SP	Soldier Creek (EDW)	Fort Huachuca WWTP outfall to unnamed wash at 31°24'48"/110°18'35" to confluence with Soldier Creek to confluence with Babocomari River at 31°29'46"/110°17'24"				A&Wedw		PBC			
SP	Soto Canyon	Headwaters to confluence with Dixie Canyon at 31°29'46"/109°55'27" in the Mule Mountains			A&Ww		FBC		FC		AgL
SP	Swamp Springs Canyon Creek	Tributary Headwaters to confluence with Redfield Canyon at 32°26'10"/110°19'30"			A&Ww		FBC		FC		AgL
SP	Sycamore Pond I	Fort Huachuca Military Reservation at 31°35'12"/110°26'11" 110°26'09" 31°35'12"/110°26'11"	Sedimentary		A&Ww		FBC		FC		
SP	Sycamore Pond II	Fort Huachuca Military Reservation at 31°34'38.6"/110°26'07" 31°34'39"/110°26'10"	Sedimentary		A&Ww		FBC		FC		
SP	Turkey Creek	Tributary Headwaters to confluence with Aravaipa Creek at 32°52'49"/110°26'35"			A&Ww		FBC		FC		AgL
SP	Turkey Creek	Headwaters to confluence with Rock Creek at 31°53'20"/109°30'00"		A&Wc			FBC		FC	AgI	AgL
SP	Turkey Creek	Below confluence with Rock Creek to terminus near Willcox Playa at 31°59'56"/109°49'01"			A&Ww		FBC		FC	AgI	AgL
SP	Unnamed Wash (EDW)	Mt. Lemmon WWTP outfall at 32°26'51"/110°45'08" to 0.25 km downstream				A&Wedw		PBC			
SP	Virgus Canyon Creek	Tributary Headwaters to confluence with Aravaipa Creek at 32°54'58"/110°31'46"			A&Ww		FBC		FC		AgL
SP	Walnut Gulch	Headwaters to Tombstone WWTP outfall at 31°43'47"/110°04'06"			A&We			PBC			
SP	Walnut Gulch (EDW)	Tombstone WWTP outfall to the confluence of with Tombstone Wash at 31°44'02"/110°05'58"				A&Wedw		PBC			
SP	Walnut Gulch	Tombstone Wash to confluence with San Pedro River at 31°43'19"/110°11'35"			A&We			PBC			
SP	Ward Canyon Creek	Tributary Headwaters to confluence with Turkey Creek at 31°51'47"/109°20'13"		A&Wc			FBC		FC		AgL
SP	Whitewater Draw	Headwaters to confluence with unnamed tributary at 31°20'36"/109°34'46" 31°20'36"/109°43'48"			A&We			PBC			AgL
SP	Whitewater Draw	Below confluence with unnamed tributary to U.S./ Mexico border at 31°20'02"/109°24'44"			A&Ww		FBC		FC		AgL
SP	Willcox Playa	From 32°08'19"/109°50'59" in the Sulphur Springs Valley	Sedimentary		A&Ww		FBC		FC		AgL
SP	Woodcutters Pond	Fort Huachuca Military Reservation at 31°31'11.5"/110°20'15" 31°30'09"/110°20'12"	Igneous		A&Ww		FBC		FC		
SR	Ackre (Judge) Lake	33°37'00"/109°20'37" 33°37'01"/109°20'40"		A&Wc			FBC		FC	AgI	AgL
SR	Apache Lake	33°25'30"/111°20'30" 33°27'23"/111°12'26"	Deep		A&Ww		FBC		DWS	FC	AgI
SR	Barnhardt Creek	Headwaters to confluence with unnamed tributary at 34°05'36"/111°26'38" 34°05'37"/111°26'40"		A&Wc			FBC		FC		AgL
SR	Barnhardt Creek	Below confluence with unnamed tributary to confluence with Rye Creek at 34°06'58"/111°21'32"			A&Ww		FBC		FC		AgL
SR	Basin Lake	33°55'00"/109°26'05" 33°55'00"/109°26'09"	Igneous		A&Ww		FBC		FC		AgL
SR	Bear Creek	Tributary Headwaters to confluence with the Black River at 33°43'26"/109°22'30"		A&Wc			FBC		FC	AgI	AgL
SR	Bear Wallow Creek (OAW)	Tributary Headwaters to confluence with the Black River at 33°27'44"/109°21'22"		A&Wc			FBC		FC		AgL
SR	Bear Wallow Creek, North Fork (OAW)	Tributary Headwaters to confluence with Bear Wallow Creek at 33°35'53"/109°26'49"		A&Wc			FBC		FC		AgL
SR	Bear Wallow Creek, South Fork (OAW)	Tributary Headwaters to confluence with Bear Wallow Creek at 33°35'53"/109°26'49"		A&Wc			FBC		FC		AgL
SR	Beaver Creek	Tributary Headwaters to the confluence with Black River at 33°43'44"/109°21'07"		A&Wc			FBC		FC	AgI	AgL
SR	Big Lake	33°52'45"/109°25'00" 33°52'36"/109°25'33"	Igneous	A&Wc			FBC		DWS	FC	AgI
SR	Black River	Tributary Headwaters to the confluence with Salt River at 33°44'20"/110°13'30"		A&Wc			FBC		DWS	FC	AgI
SR	Black River, East Fork	Tributary From 33°51'19"/109°18'54" to confluence with the Black River at 33°45'07"/109°21'43"		A&Wc			FBC		DWS	FC	AgI



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
SR	Black River, North Fork of East Fork	Tributary Headwaters to confluence with Black River, East Fork at 33°56'47"/109°24'11"		A&We			FBC		DWS	FC	AgI	AgL
SR	Black River, West Fork	Tributary Headwaters to confluence with the Black River at 33°45'07"/109°21'43"		A&We			FBC		DWS	FC	AgI	AgL
SR	Bloody Tanks Wash	Headwaters to Schultze Ranch at 33°22'29"/110°54'39" Road			A&We			PBC				AgL
SR	Bloody Tanks Wash	Schultze Ranch Road to confluence with Miami Wash at 33°22'05"/110°50'02"			A&We			PBC				
SR	Boggy Creek	Tributary to the Black River Headwaters to confluence with Centerfire Creek at 33°44'31"/109°26'20"		A&We			FBC			FC	AgI	AgL
SR	Boneyard Creek	Tributary Headwaters to confluence with Black River, East Fork at 33°51'22"/109°18'50"		A&We			FBC			FC	AgI	AgL
SR	Boulder Creek	Tributary Headwaters to confluence with LaBarge Creek at 33°30'54"/111°24'46"			A&Ww		FBC			FC		
SR	Campaign Creek	Tributary Headwaters to Roosevelt Lake at 33°27'30"/111°00'04"			A&Ww		FBC			FC		AgL
SR	Canyon Creek	Headwaters to the White Mountain Apache Reservation at 33°57'53"/110°47'00" boundary		A&We			FBC		DWS	FC	AgI	AgL
SR	Canyon Lake	33°33'15"/111°26'30" 33°32'44"/111°26'19"	Deep		A&Ww		FBC		DWS	FC	AgI	AgL
SR	Centerfire Creek	Tributary Headwaters to confluence with the Black River at 33°42'47"/109°26'17"		A&We			FBC			FC	AgI	AgL
SR	Chambers Draw Creek	Tributary Headwaters to confluence with the North Fork of the East Fork of Black River at 33°53'03"/109°20'13"		A&We			FBC			FC		AgL
SR	Cherry Creek	Headwaters to confluence with unnamed tributary at 34°05'09"/110°56'04" 34°05'09"/110°56'07"		A&We			FBC			FC	AgI	AgL
SR	Cherry Creek	Below unnamed tributary to confluence with the Salt River at 33°40'16"/110°48'03.6"			A&Ww		FBC			FC	AgI	AgL
SR	Christopher Creek	Tributary Headwaters to confluence with Tonto Creek at 34°18'36"/111°04'23"		A&We			FBC			FC	AgI	AgL
SR	Cold Spring Canyon Creek	Headwaters to confluence with unnamed tributary at 33°49'50"/110°52'55" 33°49'50"/110°52'58"		A&We			FBC			FC		AgL
SR	Cold Spring Canyon Creek	Below confluence with unnamed tributary to confluence with Cherry Creek at 33°50'06"/110°51'28.8"			A&Ww		FBC			FC		AgL
SR	Conklin Creek	Tributary Headwaters to confluence with the Black River at 33°41'49"/109°27'36"		A&We			FBC			FC	AgI	AgL
SR	Coon Creek	Headwaters to confluence with unnamed tributary at 33°46'42"/110°54'25" 33°46'41"/110°54'26"		A&We			FBC			FC		AgL
SR	Coon Creek	Below confluence with unnamed tributary to confluence with Salt River at 33°39'47"/110°50'24"			A&Ww		FBC			FC		AgL
SR	Corduroy Creek	Tributary Headwaters to confluence with Fish Creek at 33°59'46"/110°17'31"		A&We			FBC			FC	AgI	AgL
SR	Coyote Creek	Tributary Headwaters to confluence with the Black River, East Fork at 33°50'53"/109°18'18"		A&We			FBC			FC	AgI	AgL
SR	Crescent Lake	33°54'36"/109°25'08" 33°54'38"/109°25'18"	Shallow	A&We			FBC			FC	AgI	AgL
SR	Deer Creek	Tributary Headwaters to confluence with the Black River, East Fork at 33°48'07"/109°19'26"		A&We			FBC			FC		AgL
SR	Del Shay Creek	Tributary Headwaters to confluence with Gun Creek at 34°00'22"/111°15'43"			A&Ww		FBC			FC		AgL
SR	Devils Chasm Creek	Headwaters to confluence with unnamed tributary at 33°48'46"/110°52'33" 33°48'46"/110°52'35"		A&We			FBC			FC		AgL
SR	Devils Chasm Creek	Below confluence with unnamed tributary to confluence with Cherry Creek at 33°49'34"/110°54'18"			A&Ww		FBC			FC		AgL
SR	Dipping Vat Reservoir	33°55'54"/109°25'15" 33°55'47"/109°25'31"	Igneous		A&Ww		FBC			FC		AgL
SR	Double Cienega Creek	Tributary Headwaters to confluence with Fish Creek at 33°38'35"/109°22'08"		A&We			FBC			FC		AgL
SR	Fish Creek	Tributary Headwaters to confluence with the Black River at 33°42'40"/109°26'31"		A&We			FBC			FC	AgI	AgL
SR	Fish Creek	Tributary Headwaters to confluence with the Salt River at 33°34'37"/111°21'11"			A&Ww		FBC			FC		
SR	Gold Creek	Headwaters to confluence with unnamed tributary at 33°59'47"/111°25'07" 33°59'47"/111°25'10"		A&We			FBC			FC		AgL
SR	Gold Creek	Below confluence with unnamed tributary to confluence with Tonto Creek at 33°58'55"/111°18'03.6"			A&Ww		FBC			FC		AgL
SR	Gordon Canyon Creek	Headwaters to confluence with Hog Canyon at 34°13'49"/111°00'27"		A&We			FBC			FC		AgL
SR	Gordon Canyon Creek	Below confluence with Hog Canyon to confluence with Haigler Creek at 34°11'56"/111°02'21"			A&Ww		FBC			FC		AgL
SR	Greenback Creek	Tributary Headwaters to confluence with Tonto Creek at 33°47'38"/111°15'22"			A&Ww		FBC			FC		AgL
SR	Haigler Creek	Headwaters to confluence with unnamed tributary at 34°12'23.5"/111°00'11" 34°12'23"/111°00'15"		A&We			FBC			FC	AgI	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
SR	Haigler Creek	Below confluence with unnamed tributary to confluence with Tonto Creek at 34°12'54"/111°05'45.6"			A&Ww		FBC			FC	AgI	AgL	
SR	Hannagan Creek	Tributary Headwaters to confluence with Beaver Creek at 33°42'07"/109°14'46"			A&Wc		FBC			FC		AgL	
SR	Hay Creek (OAW)	Tributary Headwaters to confluence with the Black River, West Fork at 33°48'32"/109°25'16"			A&Wc		FBC			FC		AgL	
SR	Home Creek	Tributary Headwaters to confluence with the Black River, West Fork at 33°45'43"/109°22'48"			A&Wc		FBC			FC		AgL	
SR	Horse Creek	Tributary Headwaters to confluence with the Black River, West Fork at 33°45'11"/109°21'50"			A&Wc		FBC			FC		AgL	
SR	Horse Camp Creek	Headwaters to confluence with unnamed tributary at 33°53'53"/110°50'10" 33°54'00"/110°50'07"			A&Wc		FBC			FC		AgL	
SR	Horse Camp Creek	Below confluence with unnamed tributary to confluence with Cherry Creek at 33°52'08"/110°52'33.6"			A&Ww		FBC			FC		AgL	
SR	Horton Creek	Tributary Headwaters to confluence with Tonto Creek at 34°20'24"/111°05'42"			A&Wc		FBC			FC	AgI	AgL	
SR	Houston Creek	Tributary Headwaters to confluence with Tonto Creek at 34°07'30"/111°15'25"			A&Ww		FBC			FC		AgL	
SR	Hunter Creek	Tributary Headwaters to confluence with Christopher Creek at 34°18'20"/111°01'55"			A&Wc		FBC			FC		AgL	
SR	LaBarge Creek	Headwaters to Canyon Lake at 33°31'34"/111°25'15.6"			A&Ww		FBC			FC			
SR	Lake Sierra Blanca	33°52'25"/109°16'05"			A&Wc		FBC			FC	AgI	AgL	
SR	Miami Wash	Tributary Headwaters to confluence with Pinal Creek at 33°27'04"/110°50'17"				A&We		PBC					
SR	Mule Creek	Tributary Headwaters to confluence with Canyon Creek at 34°16'34"/110°48'00"			A&Wc		FBC		DWS	FC	AgI	AgL	
SR	Open Draw Creek	Tributary Headwaters to confluence with the East Fork of Black River at 33°49'52"/109°18'18"			A&Wc		FBC			FC		AgL	
SR	P B Creek	Headwaters to Forest Service Road #203 at 33°57'08"/110°56'09" 33°57'08"/110°56'12"			A&Wc		FBC			FC		AgL	
SR	P B Creek	Below Forest Service Road #203 to Cherry Creek at 33°55'34"/110°54'18"			A&Ww		FBC			FC		AgL	
SR	Pinal Creek	Headwaters to confluence with unnamed EDW wash (Globe WWTP) at 33°25'29"/110°48'18" 33°25'29"/110°48'20"				A&We		PBC				AgL	
SR	Pinal Creek (EDW)	Globe WWTP outfall on unnamed wash at 33°25'46"/110°47'28" to confluence with Pinal Creek to Radium at 33°26'54"/110°49'02" Confluence with unnamed EDW wash (Globe WWTP) to 33°26'55"/110°49' 25"				A&Wedw		PBC					
SR	Pinal Creek	Radium From 33°26'55"/110°49'25" to lower Lower Pinal Creek water treatment plant discharge at 33°22'05"/110°52'17" outfall #001 at 33°31'04"/110°51'55"				A&We		PBC				AgL	
SR	Pinal Creek	From Lower Pinal Creek WTP outfall #1 at 33°31'56"/110°52'14" to See Ranch Crossing at 33°32'25"/110°52'28"						PBC					
SR	Pinal Creek	From See Ranch Crossing to 33°35'33"/110°54'33" confluence with unnamed tributary at 33°35'28"/110°54'31"				A&Ww		FBC					
SR	Pinal Creek	From 33°35'33"/110°54'33" unnamed tributary to confluence with Salt River				A&Ww		FBC			FC		
SR	Pine Creek	Tributary Headwaters to confluence with the Salt River at 33°36'04"/111°12'36"				A&Ww		FBC			FC		
SR	Pinto Creek	Headwaters to confluence with unnamed tributary at 33°19'27"/110°54'56" 33°19'27"/110°54'58"				A&Wc		FBC			FC	AgI	AgL
SR	Pinto Creek	Below confluence with unnamed tributary to Roosevelt Lake at 33°39'11"/111°00'43"				A&Ww		FBC			FC	AgI	AgL
SR	Pool Corral Lake	33°30'38"/110°00'15"	Igneous			A&Ww		FBC			FC	AgI	AgL
SR	Pueblo Canyon Creek	Headwaters to confluence with unnamed tributary at 33°50'30"/110°53'13" 33°50'23"/110°51'37"				A&Wc		FBC			FC	AgL	
SR	Pueblo Canyon Creek	Below confluence with unnamed tributary to confluence with Cherry Creek at 33°52'30"/110°52'55"				A&Ww		FBC			FC	AgL	
SR	Reevis Creek	Tributary Headwaters to confluence with Pine Creek at 33°32'07"/111°09'40"				A&Ww		FBC			FC		
SR	Reservation Creek	Tributary Headwaters to confluence with the Black River at 33°41'42"/109°28'26"				A&Wc		FBC			FC	AgL	
SR	Reynolds Creek	Tributary Headwaters to confluence with Workman Creek at 33°52'16"/111°00'14"				A&Wc		FBC			FC	AgL	
SR	Roosevelt Lake	33°40'45"/111°09'15" 33°52'17"/111°00'17"	Deep			A&Ww		FBC		DWS	FC	AgI	AgL
SR	Russell Gulch	From headwaters to confluence with Miami Wash							PBC				
SR	Rye Creek	Tributary Headwaters to confluence with Tonto Creek at 34°01'41"/111°17'06"				A&Ww		FBC			FC	AgL	



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
SR	Saguaro Lake	33°34'00"/111°32'06" 33°33'44"/111°30'55"	Deep		A&Ww			FBC		DWS	FC	AgI	AgL
SR	Salome Creek	Tributary Headwaters to confluence with the Salt River at 33°41'56"/111°05'46"			A&Ww			FBC			FC	AgI	AgL
SR	Salt House Lake	33°57'04"/109°20'11"	Igneous		A&Ww			FBC			FC		AgL
SR	Salt River	Theodore Roosevelt Dam to 2 km below Granite Reef Dam			A&Ww			FBC		DWS	FC	AgI	AgL
SR	Slate Creek	Tributary Headwaters to confluence with Tonto Creek at 33°56'24"/111°18'25"			A&Ww			FBC			FC		AgL
SR	Snake Creek (OAW)	Tributary Headwaters to confluence with the Black River at 33°40'30"/109°28'55"		A&Wc				FBC			FC		AgL
SR	Spring Creek	Tributary Headwaters to confluence with Tonto Creek at 34°09'54"/111°10'08"			A&Ww			FBC			FC		AgL
SR	Stinky Creek (OAW)	Tributary Headwaters to confluence with the Black River, West Fork at 33°51'22"/109°27'07"		A&Wc				FBC			FC		AgL
SR	Thomas Creek	Tributary Headwaters to confluence with Beaver Creek at 33°42'29"/109°15'11"		A&Wc				FBC			FC		AgL
SR	Thompson Creek	Tributary Headwaters to confluence with the West Fork of the Black River at 33°53'24"/109°28'48"		A&Wc				FBC			FC		AgL
SR	Tonto Creek	Headwaters to confluence with unnamed tributary at 34°18'10"/111°04'14" 34°18'11"/111°04'18"		A&Wc				FBC			FC	AgI	AgL
SR	Tonto Creek	Below confluence with unnamed tributary to Roosevelt Lake at 33°45'14"/111°14'17"			A&Ww			FBC			FC	AgI	AgL
SR	Turkey Creek	Tributary Headwaters to confluence with Rock Creek at 33°58'30"/111°06'47"		A&Wc				FBC			FC		
SR	Unnamed Wash (EDW)	Cobre Valley Plaza WWTW at 33°24'56"/110°49'43" to confluence with Russell Guleh					A&Wedw		PBC				
SR	Wildcat Creek	Tributary Headwaters to confluence with Centerfire Creek at 33°43'41"/109°26'28"		A&Wc				FBC			FC		AgL
SR	Willow Creek	Tributary Headwaters to confluence with Beaver Creek at 33°43'52"/109°18'04"		A&Wc				FBC			FC		AgL
SR	Workman Creek	Headwaters to confluence with Reynolds Creek at 33°52'17"/111°00'14.5"		A&Wc				FBC			FC	AgI	AgL
SR	Workman Creek	Below confluence with Reynolds Creek to confluence with Salome Creek at 33°52'37"/111°02'20"			A&Ww			FBC			FC	AgI	AgL
UG	Apache Creek	Tributary Headwaters to confluence with the Gila River at 32°52'08"/109°11'53"			A&Ww			FBC			FC		AgL
UG	Ash Creek	Headwaters to confluence with unnamed tributary at 32°45'37"/109°52'22" 32°46'15"/109°51'45"		A&Wc				FBC			FC		AgL
UG	Ash Creek	Below confluence with unnamed tributary to confluence with the Gila River at 32°53'35"/109°47'34.8"			A&Ww			FBC			FC		AgL
UG	Bennett Wash (EDW)	ADOC Safford WWTW outfall at 32°50'20"/109°34'44" Headwaters to the Gila River			A&Wc	A&Wedw			PBC				
UG	Bitter Creek	Tributary Headwaters to confluence with the Gila River at 32°50'17"/109°10'59"			A&Ww			FBC			FC		
UG	Blue River	Headwaters to confluence with Strayhorse Creek at 33°29'02"/110°12'12" 33°29'02"/109°12'14"		A&Wc				FBC			FC	AgI	AgL
UG	Blue River	Below confluence with Strayhorse Creek to confluence with San Francisco River at 33°12'36"/109°11'27.6"			A&Ww			FBC			FC	AgI	AgL
UG	Bonita Creek (OAW)	San Carlos Indian Reservation boundary to confluence with the Gila River at 32°53'35"/109°28'41"			A&Ww			FBC		DWS	FC		AgL
UG	Buckalou Creek	Tributary Headwaters to confluence with Castle Creek at 33°43'34"/109°09'07"		A&Wc				FBC			FC		AgL
UG	Campbell Blue Creek	Tributary Headwaters to confluence with the Blue River at 33°42'30"/109°02'46"		A&Wc				FBC			FC		AgL
UG	Castle Creek	Tributary Headwaters to confluence with Campbell Blue Creek at 33°44'06"/109°08'10"		A&Wc				FBC			FC		AgL
UG	Cave Creek (OAW)	Headwaters to confluence with South Fork Cave Creek at 31°53'04"/109°10'27"		A&Wc				FBC			FC	AgI	AgL
UG	Cave Creek (OAW)	Below confluence with South Fork Cave Creek to Coronado National Forest boundary			A&Ww			FBC			FC	AgI	AgL
UG	Cave Creek	Below Coronado National Forest boundary to New Mexico border at 31°58'19"/109°03'00"			A&Ww			FBC			FC	AgI	AgL
UG	Cave Creek, South Fork	Tributary Headwaters to confluence with Cave Creek at 31°53'04"/109°10'27"		A&Wc				FBC			FC	AgI	AgL
UG	Chase Creek	Headwaters to the Phelps-Dodge Morenci Mine			A&Ww			FBC			FC		AgL
UG	Chase Creek	Below the Phelps-Dodge Morenci Mine to confluence with San Francisco River				A&Wc			PBC				
UG	Chitty Canyon Creek	Tributary Headwaters to confluence with Salt House Creek at 33°30'32"/109°24'04"		A&Wc				FBC			FC		AgL
UG	Cima Creek	Tributary Headwaters to confluence with Cave Creek at 31°52'19"/109°14'02"		A&Wc				FBC			FC		AgL
UG	Cluff Ranch Pond #1	32°48'55"/109°49'15" 32°48'55"/109°50'46"	Sedimentary		A&Ww			FBC			FC	AgI	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
UG	Cluff Ranch Pond #2	32°49'15"/109°50'33"	Sedimentary	A&Ww			FBC		FC	AgL	AgL
UG	Cluff Ranch Pond #3	32°48'20"/109°51'43" 32°48'21"/109°51'46"	Sedimentary	A&Ww			FBC		FC	AgL	AgL
UG	Coleman Creek	Tributary Headwaters to confluence with Campbell Blue Creek at 32°44'20"/109°09'32"		A&Wc			FBC		FC		AgL
UG	Dankworth Ponds Lake	32°43'45"/109°42'45" 32°43'13"/109°42'17"	Sedimentary	A&Wc			FBC		FC		
UG	Deadman Canyon Creek	Headwaters to confluence with unnamed tributary at 32°43'50"/109°49'01" 32°43'50"/109°49'03"		A&Wc			FBC		DWS	FC	AgL
UG	Deadman Canyon Creek	Below confluence with unnamed tributary to confluence with Graveyard Wash at 32°46'48"/109°44'13"		A&Ww			FBC		DWS	FC	AgL
UG	Eagle Creek	Headwaters to confluence with unnamed tributary at 32°23'24"/109°29'35" 33°22'32"/109°29'43"		A&Wc			FBC		DWS	FC	AgL
UG	Eagle Creek	Below confluence with unnamed tributary to Eagle-Creek at 32°57'36"/109°24'21.6" confluence with the Gila River		A&Ww			FBC		DWS	FC	AgL
UG	East Eagle Creek	Tributary Headwaters to confluence with Eagle Creek at 32°29'38"/109°28'05"		A&Wc			FBC		FC		AgL
UG	East Turkey Creek	Headwaters to confluence with unnamed tributary at 31°58'22"/109°12'17" 31°58'22"/109°12'20"		A&Wc			FBC		FC		AgL
UG	East Turkey Creek	Below confluence with unnamed tributary to terminus near San Simon River at 31°59'53"/109°07'37"		A&Ww			FBC		FC		AgL
UG	East Whitetail	Headwaters to terminus near San Simon River at 32°08'52"/109°09'25" in the Chiricahua Mountains		A&Ww			FBC		FC		AgL
UG	Emigrant Canyon	Headwaters to terminus near San Simon River at 32°17'02"/109°20'27.6" in the Chiricahua Mountains		A&Ww			FBC		FC		AgL
UG	Evans Pond #1	32°49'15"/109°51'15" 32°49'19"/109°51'12"	Sedimentary	A&Ww			FBC		FC	AgL	AgL
UG	Evans Pond #2	32°49'14"/109°51'09"	Sedimentary	A&Ww			FBC		FC	AgL	AgL
UG	Fishhook Creek	Tributary Headwaters to confluence with the Blue River at 33°33'13"/109°10'01"		A&Wc			FBC		FC		AgL
UG	Foote Creek	Tributary Headwaters to confluence with the Blue River at 33°35'24"/109°08'49"		A&Wc			FBC		FC		AgL
UG	Frye Canyon Creek	Headwaters to Frye Mesa Reservoir at 32°45'09.5"/109°50'02"		A&Wc			FBC		DWS	FC	AgL
UG	Frye Canyon Creek	Below Frye Mesa Reservoir to Highline Canal Headwaters headwaters to terminus near San Simon River at 32°56'10"/109°45'43"		A&Ww			FBC		FC		AgL
UG	Frye Mesa Reservoir	32°45'13"/109°50'00" 32°45'14"/109°50'02"	Igneous	A&Wc			FBC		DWS	FC	
UG	Gibson Creek	Tributary Headwaters to confluence with Marijilda Creek at 32°41'24"/109°48'11"		A&Wc			FBC		FC		AgL
UG	Gila River	New Mexico border to the San Carlos Indian Reservation at 33°05'37"/110°03'21" boundary		A&Ww			FBC		FC	AgL	AgL
UG	Grant Creek	Tributary Headwaters to confluence with the Blue River at 33°34'16"/109°10'37"		A&Wc			FBC		FC		AgL
UG	Judd Lake	33°51'15"/109°09'15" 33°51'15"/109°09'35"	Sedimentary	A&Wc			FBC		FC		
UG	K P Creek (OAW)	Tributary Headwaters to confluence with the Blue River at 33°31'44"/109°12'04"		A&Wc			FBC		FC		AgL
UG	Lanphier Canyon Creek	Tributary Headwaters to confluence with the Blue River at 33°35'42"/109°07'52"		A&Wc			FBC		FC		AgL
UG	Little Blue Creek	Headwaters to confluence with Dutch Blue Creek at 32°24'26.5"/109°09'18"		A&Wc			FBC		FC		AgL
UG	Little Blue Creek	Below confluence with Dutch Blue Creek to confluence with Blue Creek at 32°22'30"/109°10'30"		A&Ww			FBC		FC		AgL
UG	Little Creek	Tributary Headwaters to confluence with the San Francisco River at 33°49'41"/109°04'26"		A&Wc			FBC		FC		
UG	Lower George's Reservoir	33°51'23.5"/109°08'28" 33°51'24"/109°08'30"	Sedimentary	A&Wc			FBC		FC		AgL
UG	Luna Lake	33°49'45"/109°05'15" 33°49'50"/109°05'06"	Sedimentary	A&Wc			FBC		FC		AgL
UG	Marijilda Creek	Headwaters to confluence with Gibson Creek at 32°41'23"/109°48'13"		A&Wc			FBC		FC		AgL
UG	Marijilda Creek	Below confluence with Gibson Creek to confluence with Stockton Wash at 32°46'30"/109°40'51.6"		A&Ww			FBC		FC	AgL	AgL
UG	Markham Creek	Tributary Headwaters to confluence with the Gila River at 32°56'17"/109°53'13"		A&Ww			FBC		FC		AgL
UG	Pigeon Creek	Tributary Headwaters to confluence with the Blue River at 33°16'08"/109°11'42"		A&Ww			FBC		FC		AgL
UG	Raspberry Creek	Tributary Headwaters to confluence with the Blue River at 33°30'07"/109°12'32"		A&Wc			FBC		FC		
UG	Roper Lake	32°45'20"/109°42'14" 32°45'23"/109°42'14"	Sedimentary	A&Ww			FBC		FC		
UG	San Francisco River	Headwaters to the New Mexico border at 33°49'24.5"/109°02'46"		A&Wc			FBC		FC	AgL	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
UG	San Francisco River	New Mexico border to confluence with the Gila River at 33°14'25"/109°02'49"			A&Ww		FBC		FC	AgL	AgL
UG	San Simon River	Tributary Headwaters to confluence with the Gila River at 32°49'52"/109°28'53"			A&We		PBC				AgL
UG	Sheep Tank	32°46'15"/109°48'08" 32°46'14"/109°48'09"	Sedimentary		A&Ww		FBC		FC		AgL
UG	Smith Pond	32°49'09"/109°50'26" 32°49'15"/109°50'36"	Sedimentary		A&Ww		FBC		FC		
UG	Squaw Creek	Tributary Headwaters to confluence with Thomas Creek at 32°23'38"/109°12'22"			A&Wc		FBC		FC		AgL
UG	Stone Creek	Tributary Headwaters to confluence with the San Francisco River at 33°50'38"/109°02'46"			A&Wc		FBC		FC	AgL	AgL
UG	Strayhorse Creek	Tributary Headwaters to confluence with the Blue River at 33°29'02"/109°12'11"			A&Wc		FBC		FC		
UG	Thomas Creek	Headwaters to confluence with Rousenssock Creek at 33°23'45"/109°13'13"			A&Wc		FBC		FC		AgL
UG	Thomas Creek	Below confluence with Rousenssock Creek to confluence with Blue River at 33°23'20"/109°11'20"			A&Ww		FBC		FC		AgL
UG	Tinny Pond	33°47'49"/109°04'23" 33°47'49"/109°04'27"	Sedimentary		A&Ww		FBC		FC		AgL
UG	Turkey Creek	Tributary Headwaters to confluence with Campbell Blue Creek at 33°44'10"/109°04'05"			A&Wc		FBC		FC		AgL
UG	Unnamed Wash (EDW)	ADOC-Globe WWTP outfall at 33°24'55"/110°42'35" to the San Carlos Indian Reservation				A&Wedw		PBC			
VR	American Gulch	Headwaters to the Northern Gila County Sanitary District WWTP outfall (Payson) at 34°14'05"/111°22'18" 34°14'02"/111°22'14"			A&Ww		FBC		FC	AgL	AgL
VR	American Gulch (EDW)	Below Northern Gila County Sanitary District WWTP outfall (Payson) to confluence with the East Verde River at 34°14'42"/111°25'08"				A&Wedw		PBC			
VR	Apache Creek	Tributary Headwaters to confluence with Walnut Creek at 34°55'12"/112°50'42"			A&Ww		FBC		FC		AgL
VR	Ashbrook Wash	Headwaters to the Fort McDowell Indian Reservation boundary at 33°36'54"/111°42'06"				A&We		PBC			
VR	Aspen Creek	Tributary Headwaters to confluence with Granite Creek at 34°31'55"/112°28'19"			A&Ww		FBC		FC		
VR	Bar Cross Tank	35°00'40"/112°05'34" 35°00'41"/112°05'39"			A&Ww		FBC		FC		AgL
VR	Barrata Tank	35°02'43"/112°24'17" 35°02'43"/112°24'21"			A&Ww		FBC		FC		AgL
VR	Bartlett Lake	33°49'00"/111°37'45" 33°49'52"/111°37'44"	Deep		A&Ww		FBC		DWS	FC	AgL
VR	Beaver Creek	Tributary Headwaters to confluence with the Verde River at 34°34'26"/111°51'14"			A&Ww		FBC		FC		AgL
VR	Big Chino Wash	Tributary Headwaters to confluence with Sullivan Lake at 34°52'37"/112°28'37"				A&We		PBC			AgL
VR	Bitter Creek	Headwaters to the Jerome WWTP outfall at 34°45'08"/112°06'25" 34°45'12"/112°06'24"				A&We		PBC			AgL
VR	Bitter Creek (EDW)	Jerome WWTP outfall to the Yavapai Apache Indian Reservation at 34°45'45.5"/112°04'44" boundary				A&Wedw		PBC			AgL
VR	Bitter Creek	Below the Yavapai Apache Indian Reservation boundary to confluence with the Verde River at 34°46'37"/112°02'53"			A&Ww		FBC		FC	AgL	AgL
VR	Black Canyon Creek	Headwaters to confluence with unnamed tributary at 34°29'20"/112°05'05" 34°39'20"/112°05'06"			A&Wc		FBC		FC		AgL
VR	Black Canyon Creek	Below confluence with unnamed tributary to confluence with the Verde River at 34°40'59"/111°57'28.8"			A&Ww		FBC		FC		AgL
VR	Bonita Creek	Tributary Headwaters to confluence with Ellison Creek at 34°20'56"/111°14'20"			A&Wc		FBC		FC		
VR	Bray Creek	Tributary Headwaters to confluence with Webber Creek at 34°22'37"/111°20'53"			A&Wc		FBC		FC		AgL
VR	Camp Creek	Tributary Headwaters to confluence with the Verde River at 33°45'32"/111°30'14"			A&Ww		FBC		FC		AgL
VR	Carter Tank	34°52'27"/112°57'28"			A&Ww		FBC		FC		AgL
VR	Cereus Wash	Headwaters to the Fort McDowell Indian Reservation at 33°34'13"/111°42'28" boundary				A&We		PBC			
VR	Chase Creek	Tributary Headwaters to confluence with the East Verde River at 34°22'48"/111°16'59"			A&Wc		FBC		DWS	FC	
VR	Clover Creek	Tributary Headwaters to confluence with headwaters of West Clear Creek at 34°33'04"/111°24'11"			A&Wc		FBC		FC		AgL
VR	Coffee Creek	Tributary Headwaters to confluence with Spring Creek at 34°48'18"/111°55'41"			A&Ww		FBC		FC		AgL
VR	Colony Wash	Headwaters to the Fort McDowell Indian Reservation at 33°35'42"/111°42'15" boundary				A&We		PBC			
VR	Dead Horse Lake	34°45'00"/112°00'30" 34°45'08"/112°00'42"	Shallow		A&Ww		FBC		FC		
VR	Deadman Creek	Tributary Headwaters to Horseshoe Reservoir at 34°00'00"/111°42'36"			A&Ww		FBC		FC		AgL
VR	Del Monte Wash	Headwaters to confluence with City of Cottonwood WWTP outfall 002 at 34°43'57"/112°02'46"				A&We		PBC			

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife		Human Health			Agricultural	
VR	Del Monte Wash (EDW)	City of Cottonwood WWTP outfall 002 at 34°43'57"/112°02'46" to confluence with Verde River			A&Wedw		PBC			
VR	Del Rio Dam Lake	34°48'55"/112°28'00" 34°48'55"/112°28'03"	Sedimentary		A&Ww		FBC		FC	AgL
VR	Dry Beaver Creek	Tributary Headwaters to confluence with Beaver Creek at 34°37'59"/111°49'34"			A&Ww		FBC		FC	AgL
VR	Dry Creek (EDW)	Sedona Ventures WWTP outfall at 34°50'45"/111°52'15" 34°50'02"/111°52'17" to confluence with Dry Creek at 34°50'31"/111°52'39" 34°48'12"/111°52'48"			A&Wedw		PBC			
VR	Dude Creek	Tributary Headwaters to confluence with the East Verde River at 34°22'06"/111°16'26"		A&Wc			FBC		FC	AgL
VR	East Verde River	Headwaters to confluence with Ellison Creek at 34°21'10"/111°16'47.5"		A&Wc			FBC	DWS	FC	AgL
VR	East Verde River	Below confluence with Ellison Creek to confluence with the Verde River at 34°17'02"/111°16'49"			A&Ww		FBC	DWS	FC	AgL
VR	Ellison Creek	Tributary Headwaters to confluence with the East Verde River at 34°21'11"/111°16'48"		A&Wc			FBC		FC	AgL
VR	Fossil Creek (OAW)	Tributary Headwaters to confluence with the Verde River at 34°18'22"/111°40'30"			A&Ww		FBC		FC	AgL
VR	Fossil Springs (OAW)	34°25'24"/111°34'25" 34°25'24"/111°34'27"			A&Ww		FBC	DWS	FC	
VR	Foxboro Lake	34°53'48"/111°40'00" 34°53'42"/111°39'55"			A&Ww		FBC		FC	AgL
VR	Fry Lake	35°03'45"/111°48'02" 35°03'45"/111°48'04"			A&Ww		FBC		FC	AgL
VR	Gap Creek	Headwaters to confluence with Government Spring at 34°23'23"/111°50'53.5"		A&Wc			FBC		FC	AgL
VR	Gap Creek	Below Government Spring to confluence with the Verde River at 34°24'50"/111°46'51.6"			A&Ww		FBC		FC	AgL
VR	Garrett Tank	35°18'57"/112°42'46" 35°18'57"/112°42'20"			A&Ww		FBC		FC	AgL
VR	Goldwater Lake, Lower	34°29'55"/112°27'18" 34°29'56"/112°27'17"	Sedimentary	A&Wc			FBC	DWS	FC	
VR	Goldwater Lake, Upper	34°29'51"/112°26'55" 34°29'52"/112°26'59"	Igneous	A&Wc			FBC	DWS	FC	
VR	Granite Basin Lake	34°37'01"/112°42'16" 34°37'01"/112°32'58"	Igneous	A&Wc			FBC		FC	AgL
VR	Granite Creek	Headwaters to Watson Lake at 34°35'15"/112°25'05"		A&Wc			FBC		FC	AgL
VR	Granite Creek	Below Watson Lake to confluence with the Verde River at 34°52'54"/112°25'05"			A&Ww		FBC		FC	AgL
VR	Green Valley Lake (EDW)	34°13'54"/111°20'45"	Urban			A&Wedw		PBC	FC	
VR	Heifer Tank	35°20'28"/112°32'56" 35°20'27"/112°32'59"			A&Ww		FBC		FC	AgL
VR	Hell Canyon Tank	35°05'00"/112°24'06" 35°04'59"/112°24'07"	Igneous		A&Ww		FBC		FC	AgL
VR	Homestead Tank	35°21'23"/112°41'32" 35°21'24"/112°41'36"	Igneous		A&Ww		FBC		FC	AgL
VR	Horse Park Tank	34°58'15"/111°36'29" 34°58'15"/111°36'32"			A&Ww		FBC		FC	AgL
VR	Horseshoe Reservoir	33°59'00"/111°42'30" 34°00'25"/111°43'36"	Sedimentary		A&Ww		FBC		FC	AgL
VR	Houston Creek	Tributary Headwaters to confluence with the Verde River at 34°16'55"/111°41'06"			A&Ww		FBC		FC	AgL
VR	Huffer Tank	34°27'46"/111°23'11"			A&Ww		FBC		FC	AgL
VR	J.D. Dam Lake	35°04'01"/112°01'40" 35°04'02"/112°01'48"	Shallow	A&Wc			FBC		FC	AgL
VR	Jacks Canyon Wash	Headwaters to Big Park WWTP outfall at 34°45'32"/111°45'10" 34°45'46"/111°45'51"			A&We			PBC		
VR	Jacks Canyon Wash (EDW)	Below Big Park WWTP outfall to confluence with Dry Beaver Creek at 34°44'28"/111°46'04"				A&Wedw		PBC		
VR	Lime Creek	Tributary Headwaters to Horseshoe Reservoir at 33°59'20"/111°44'13"			A&Ww		FBC		FC	AgL
VR	McLellan Reservoir	35°13'15"/112°17'05" 35°13'09"/112°17'06"	Igneous		A&Ww		FBC		FC	AgL
VR	Meath Dam Tank	35°07'46"/112°27'35" 35°07'52"/112°27'35"			A&Ww		FBC		FC	AgL
VR	Mullican Place Tank	34°44'16"/111°36'08" 34°44'16"/111°36'10"	Igneous		A&Ww		FBC		FC	AgL
VR	Oak Creek (OAW)	Headwaters to confluence with unnamed tributary at 34°57'08.5"/111°45'13" 34°59'15"/111°44'47"			A&Wc		FBC	DWS	FC	AgL
VR	Oak Creek (OAW)	Below confluence with unnamed tributary at 34°57'08.5"/111°45'13" to confluence with Verde River			A&Ww		FBC	DWS	FC	AgL
VR	Oak Creek, West Fork (OAW)	Tributary Headwaters to confluence with Oak Creek at 34°59'13"/111°44'46"			A&Wc		FBC		FC	AgL
VR	Odell Lake	34°56'02"/111°37'52" 34°56'5"/111°37'53"	Igneous	A&Wc			FBC		FC	
VR	Peck's Lake	34°47'07"/112°02'30" 34°46'51"/112°02'01"	Shallow		A&Ww		FBC		FC	AgL
VR	Perkins Tank	35°06'42"/112°04'08" 35°06'42"/112°04'12"	Shallow	A&Wc			FBC		FC	AgL



Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
VR	Pine Creek	Headwaters to confluence with unnamed tributary at 34°21'51"/111°26'46" 34°21'51"/111°26'49"		A&Wc			FBC		DWS	FC	AgI	AgL
VR	Pine Creek	Below confluence with unnamed tributary to confluence with East Verde River at 34°13'19"/111°29'27.6"			A&Ww		FBC		DWS	FC	AgI	AgL
VR	Red Creek	Tributary Headwaters to confluence with the Verde River at 34°09'47"/111°43'12"			A&Ww		FBC			FC		AgL
VR	Red Lake	35°12'19"/113°03'55"	Sedimentary		A&Ww		FBC			FC		AgL
VR	Reservoir #1	35°13'05"/111°50'07" 35°13'5"/111°50'09"	Igneous		A&Ww		FBC			FC		
VR	Reservoir #2	35°13'46"/111°50'36" 35°13'17"/111°50'39"	Igneous		A&Ww		FBC			FC		
VR	Roundtree Canyon Creek	Tributary Headwaters to confluence with Tangle Creek at 34°09'04"/111°48'18"			A&Ww		FBC			FC		AgL
VR	Scholze Lake	35°11'53"/112°00'31" 35°11'53"/112°00'37"	Igneous	A&Wc			FBC			FC		AgL
VR	Spring Creek	Headwaters to confluence with unnamed tributary at 34°57'23.5"/111°57'19" 34°57'23"/111°57'21"			A&Wc		FBC			FC	AgI	AgL
VR	Spring Creek	Below confluence with unnamed tributary at 34°44'38"/111°54'19" to confluence with Oak Creek			A&Ww		FBC			FC	AgI	AgL
VR	Steel Dam Lake	35°13'36"/112°24'51" 35°13'36"/112°24'54"	Igneous	A&Wc			FBC			FC		AgL
VR	Stehr Lake	34°21'59"/111°40'00" 34°22'01"/111°40'02"	Sedimentary		A&Ww		FBC			FC		AgL
VR	Stone Dam Lake	35°13'36"/112°24'16" 35°13'32"/112°24'10"			A&Wc		FBC			FC	AgI	AgL
VR	Stoneman Lake	34°46'44"/111°31'05" 34°46'47"/111°31'14"	Shallow	A&Wc			FBC			FC	AgI	AgL
VR	Sullivan Lake	34°51'46"/112°27'41" 34°51'42"/112°27'51"			A&Ww		FBC			FC	AgI	AgL
VR	Sycamore Creek	Headwaters to confluence with unnamed tributary at 35°03'40"/111°57'28" 35°03'41"/111°57'31"			A&Wc		FBC			FC	AgI	AgL
VR	Sycamore Creek	Below confluence with unnamed tributary to confluence with Verde River at 34°51'47"/112°04'41"			A&Ww		FBC			FC	AgI	AgL
VR	Sycamore Creek	Tributary Headwaters to confluence with Verde River at 33°37'55"/111°39'58"			A&Ww		FBC			FC	AgI	AgL
VR	Sycamore Creek	Tributary Headwaters to confluence with Verde River at 34°04'42"/111°42'44"			A&Ww		FBC			FC		AgL
VR	Tangle Creek	Tributary Headwaters to confluence with Verde River at 34°05'06"/111°42'36"			A&Ww		FBC			FC	AgI	AgL
VR	Trinity Tank	35°27'44"/112°47'56" 35°27'44"/112°48'01"			A&Ww		FBC			FC		AgL
VR	Unnamed Wash	Flagstaff Meadows WWTP outfall at 36°14'17"/111°49'28" 35°13'59"/111°48'35" to Volunteer Wash at 35°11'55"/111°49'42"				A&Wedw		PBC				
VR	Verde River	Above Bartlett Dam from From confluence of Chino Wash and Granite Creek to Bartlett Lake Dam			A&Ww		FBC			FC	AgI	AgL
VR	Verde River	Below Bartlett Lake Dam to Salt River			A&Ww		FBC		DWS	FC	AgI	AgL
VR	Walnut Creek	Tributary Headwaters to confluence with Big Chino Wash at 34°58'12"/112°34'55"			A&Ww		FBC			FC		AgL
VR	Watson Lake	34°25'45"/112°25'05" 34°34'58"/112°25'26"	Igneous		A&Ww		FBC			FC	AgI	AgL
VR	Webber Creek	Tributary Headwaters to confluence with the East Verde River at 34°18'50"/111°19'55"			A&Wc		FBC			FC		AgL
VR	West Clear Creek	Headwaters to confluence with Meadow Canyon at 34°23'40"/111°31'30"			A&Wc		FBC			FC		AgL
VR	West Clear Creek	Below confluence with Meadow Canyon to confluence with the Verde River at 34°30'14"/111°49'41"			A&Ww		FBC			FC	AgI	AgL
VR	Wet Beaver Creek	Headwaters to unnamed springs at 34°41'17"/111°34'34"			A&Wc		FBC			FC	AgI	AgL
VR	Wet Beaver Creek	Below unnamed springs to confluence with Dry Beaver Creek at 34°27'59"/111°49'33.6"			A&Ww		FBC			FC	AgI	AgL
VR	Whitehorse Lake	35°07'00"/112°00'47" 35°06'59"/112°00'48"	Igneous	A&Wc			FBC		DWS	FC	AgI	AgL
VR	Williamson Valley Wash	Headwaters to confluence with Mint Wash at 34°49'05"/112°37'55"				A&We		PBC				AgL
VR	Williamson Valley Wash	Confluence From confluence of Mint Wash to 10.5 km downstream at 34°49'05"/111°37'55"			A&Ww		FBC			FC		AgL
VR	Williamson Valley Wash	Below From 10.5 km downstream of Mint Wash confluence to confluence with Big Chino Wash at 32°52'52"/112°28'48"				A&We		PBC				AgL
VR	Williscraft Tank	35°11'22"/112°35'38" 35°11'22"/112°35'40"			A&Ww		FBC			FC		AgL
VR	Willow Creek	Above Willow Creek Reservoir	Shallow	A&Wc			FBC			FC		AgL
VR	Willow Creek	Below Willow Creek Reservoir to confluence with Granite Creek			A&Ww		FBC			FC		AgL
VR	Willow Creek Reservoir	34°36'17"/112°26'19"	Shallow		A&Ww		FBC			FC	AgI	AgL
VR	Willow Valley Lake	34°41'08"/111°19'57" 34°41'08"/111°20'02"	Sedimentary		A&Ww		FBC			FC		AgL

Watersheds

BW = Bill Williams



CG = Colorado – Grand Canyon
 CL = Colorado – Lower Gila
 LC = Little Colorado
 MG = Middle Gila
 SC = Santa Cruz – Rio Magdalena – Rio Sonoyta
 SP = San Pedro – Willcox Playa – Rio Yaqui
 SR = Salt River
 UG = Upper Gila
 VR = Verde River
Other Abbreviations
 WWTP = Wastewater Treatment Plant
 Km = kilometers

APPENDIX C. SITE-SPECIFIC STANDARDS

Watershed	Surface Water	Surface Water Description & Location	Parameter	Site-Specific Criterion
LC	Rio de Flag (EDW)	Flagstaff WWTP outfall to the confluence with San Francisco Wash at 35°14'04"/111°28'02.5"	Copper (D)	36 µg/L (A&Wedw)
CL	Yuma East Wetlands	From inlet culvert from Colorado River into restored channel to Ocean bridge Bridge	Selenium (T) Total residual chlorine	2.2 mg/L (A&Ww chronic) 33 µg/L (A&Ww acute) 20 µg/L (A&Ww chronic)
SR	Pinto Creek	From confluence of Ellis Ranch tributary at 33°19'26.7"/110°54'57.5" to the confluence of West Fork of Pinto Creek at 33°27'32.3"/111°00'19.7"	Copper (D)	34 µg/L (A&Ww acute for hardness values below 268 mg/L) 34 µg/L (A&Ww chronic)
CG	Bright Angel Wash	South Rim Grand Canyon National Park WWTP at 36°02'59"/112°09'02" to Coconino Wash	Copper (D)	42.5 µg/L (A&W edw)
CG	Transept Canyon	North Rim Grand Canyon WWTP at 36°12'20"/112°03'35" to 1km downstream	Copper (D)	42.5 µg/L (A&W edw)



NOTICES OF FINAL EXEMPT RULEMAKING

This section of the Arizona Administrative Register contains Notices of Final Exempt Rulemaking.

The Office of the Secretary of State is the filing office and publisher of these rules. Questions about the

interpretation of the final exempt rule should be addressed to the agency promulgating the rules. Refer to item #5 to contact the person charged with the rulemaking.

NOTICE OF FINAL EXEMPT RULEMAKING

TITLE 3. AGRICULTURE

CHAPTER 2. DEPARTMENT OF AGRICULTURE
ANIMAL SERVICES DIVISION

[R16-161]

PREAMBLE

- 1. Article, Part or Section Affected (as applicable) Rulemaking Action
2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific), and the statute or session law authorizing the exemption:
3. The effective date of the rule and the agency's reason it selected the effective date:
4. A list of all notices published in the Register as specified in R1-1-409(A) that pertain to the record of the exempt rulemaking:
5. The agency's contact person who can answer questions about the rulemaking:
6. An agency's justification and reason why a rule should be made, amended, repealed, or renumbered to include an explanation about the rulemaking:

This rulemaking makes changes to the three rules listed above that are necessary to implement the statutory changes made by SB1344. In summation, the rulemaking modifies the exhibition swine rules and adds swine to the self-inspection program, removes information from the self-inspection certificate prohibited by SB1344, and establishes



a fee for the self-inspection books.

7. **A reference to any study relevant to the rules that the agency reviewed and either relied on or did not rely on in its evaluation of or justification for the rules, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**
None
8. **A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:**
Not applicable
9. **The summary of the economic, small business, and consumer impact, if applicable:**
Laws 2016, 2nd Reg. Sess., Ch. 160 authorizes an exemption from the rulemaking requirements of A.R.S. Title 41, Chapter 6 for one year after the effective date of the act. As a result, this rulemaking is exempt from the requirements of the Administrative Procedures Act and no economic, small business, and consumer impact statement is required.
10. **A description of any changes between the proposed rulemaking, including any supplemental proposed rulemaking, and the final rulemaking package (if applicable):**
Not applicable
11. **An agency’s summary of the public or stakeholder comments made about the rulemaking and the agency response to the comments, if applicable:**
None received
12. **Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules. When applicable, matters shall include, but not be limited to:**
The Department of Agriculture Advisory Council approved this rulemaking on June 14, 2015.
 - a. **Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:**
The rules do not require a permit.
 - b. **Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than the federal law and if so, citation to the statutory authority to exceed the requirements of federal law:**
Not applicable
 - c. **Whether a person submitted an analysis to the agency that compares the rule’s impact of the competitiveness of business in this state to the impact on business in other states:**
No
13. **A list of any incorporated by reference material and its location in the rule:**
None
14. **Whether the rule was previously made, amended, repealed or renumbered as an emergency rule. If so, the agency shall state where the text changed between the emergency and the exempt rulemaking packages:**
No
15. **The full text of the rules follows:**

TITLE 3. AGRICULTURE

CHAPTER 2. DEPARTMENT OF AGRICULTURE
ANIMAL SERVICES DIVISION

ARTICLE 4. ANIMAL DISEASE PREVENTION AND CONTROL

Section
R3-2-411. Exhibition Swine

ARTICLE 7. LIVESTOCK INSPECTION

Section
R3-2-702. Livestock Self-inspection
R3-2-703. Seasonal Self inspection Certificate



ARTICLE 4. ANIMAL DISEASE PREVENTION AND CONTROL

R3-2-411. Exhibition Swine

An exhibit official shall deny entry to any swine not individually identified by the following:

- 1. Imported swine:
 - a. The health certificate prescribed in R3-2-606 and individual permanent identification by a method prescribed in R3-2-606(A)(5)(c)(i), and
 - b. The import permit prescribed in R3-2-607.
- 2. Native Arizona swine. Individual permanent identification by a method prescribed in R3-2-606(A)(5)(c)(i).
- A. In addition to meeting the requirements in Article 6, all imported swine not moved directly to an exhibition in Arizona shall be inspected by a Department livestock officer or inspector within 30 days after entry.
- B. Exhibit officials shall deny entry to any swine not accompanied by the following documents:
 - 1. Imported swine moved directly to an exhibition. An official health certificate specified in R3-2-606 and an import permit specified in R3-2-607;
 - 2. Imported swine not moved directly to the exhibition. A Department issued certificate of inspection of exhibition swine containing the following:
 - a. The name, address, telephone number, and signature of the owner;
 - b. The name of the inspector and the date, time, and location of the inspection;
 - c. The individual identification of the swine, using an eartech, that conforms to the universal swine eartech system, and the premises identification number using a tattoo or producer furnished tamperproof eartag that conforms to the USDA National Premises Identification System.
 - 3. Native Arizona swine. A Department issued certificate of inspection of exhibition swine containing the following:
 - a. The name, address, telephone number, and signature of the owner;
 - b. The name of the inspector and the date, time, and location of the inspection;
 - c. The individual identification of the swine, using an eartech that conforms to the universal swine eartech system, and the premises identification number using a tattoo or producer furnished tamperproof eartag that conforms to the USDA National Premises Identification System.
- C. Department issued certificate of inspection of exhibition swine. The owner shall provide the Department with:
 - 1. Imported swine:
 - a. The certificate of veterinary inspection listing import permit and individual identification of the swine, using an eartech that conforms to the universal swine eartech system, and the premises identification using a tattoo or a producer furnished tamper proof eartag that conforms to the USDA National Premises Identification System; and
 - b. If from a Stage IV state, documentation of a negative pseudorabies test conducted 15 to 30 days after entry.
 - 2. Native swine:
 - a. A bill of sale listing:
 - i. The name of the seller and buyer;
 - ii. The individual identification of the swine, using an eartech that conforms to the universal swine eartech system, and the premises identification using a tattoo or a producer furnished tamper proof eartag that conforms to the USDA National Premises Identification System; and
 - iii. The date of the sale; or
 - b. Verification that the swine has been raised in Arizona and the individual identification of the swine, using an eartech that conforms to the universal swine eartech system, and the premises identification using a tattoo or a producer furnished tamperproof eartag that conforms to the USDA National Premises Identification System.

ARTICLE 7. LIVESTOCK INSPECTION

R3-2-702. Livestock Self-inspection

A. Definitions.

“Description” means sex, breed, color, and markings, as applicable to the type of livestock.

“Exhibition” means an event including a fair, show, or field day that has as its primary purpose the opportunity for a member of a youth livestock organization, including 4-H and FFA, to display an animal raised by the youth in a judged competition.

“Identification” means brand, back tag number, ear mark, tattoo, metal eartag, plastic eartag, and premises identification number, as applicable to the type of livestock.

“Livestock” means cattle, sheep, and goats, and exhibition swine.

“Range” means every character of lands, enclosed or unenclosed, outside of cities and towns, upon which livestock is permitted by custom, license or permit to roam and feed. A.R.S. § 3-1201(7)



“Range cattle” means cattle customarily permitted to roam upon the ranges of the state, whether public domain or in private control, and not in the immediate actual possession or control of the owner although occasionally placed in enclosures for temporary purposes. A.R.S. § 3-1201(8)

B. Application.

1. ~~An owner of five or fewer head of livestock shall call the Department at (602) 542-6407 to request a self-inspection certificate. The owner shall provide answers to the questions in subsections (B)(2)(a) through (B)(2)(f) to a Department employee before a certificate will be provided.~~
2. ~~An owner of six or more head Movers of livestock and an owner or operator of a dairy or feedlot shall request a book of self-inspection certificates from the Department. The applicant shall submit a written application form obtained from the Department and provide the following information:~~
 - a. Name, mailing address, physical address, telephone number, and fax;
 - b. Name of ranch, dairy, or business and type of operation;
 - e. ~~Social security or business tax identification number;~~
 - ~~d.c.~~ Whether the applicant has been convicted of a felony under A.R.S. Title 3 within the past three years, and if so, the case number, court, charge, and sentence;
 - e.d. Recorded brand and brand location;
 - ~~f.e.~~ Individual designated to sign self-inspection certificates, if applicable; and
 - ~~g.f.~~ Signature and date.
- 3-2. The holder of a self-inspection book shall advise the Department by phone within 30 days of any change to the information provided on an application form.
- 4-3. The holder of a self-inspection book shall renew registration with the Department every two years from the date the initial or renewal application form is signed.
4. ~~Prior to a department employee issuing a book of self-inspection certificates, the owner shall submit the following payment amount and the department shall receive the payment in full prior to issuing the book:~~
 - a. ~~\$25.00 for a twenty five page feedlot book;~~
 - b. ~~\$20.00 for a twenty page dairy book; or~~
 - c. ~~\$10.00 for a ten page non-range, range, sheep, goat, or swine book.~~

C. Self-inspection certificate.

1. An owner, agent, or operator shall provide the following information, as applicable, on a self-inspection certificate whenever livestock subject to self-inspection are moved or ownership is transferred:
 - a. Name, address, ~~telephone number~~, and signature of the owner or agent;
 - b. Date of the shipment or transfer of ownership;
 - c. If moved, location from which and to which the livestock are moved, including the name of the auction, feedlot, arena, slaughter establishment, pasture, or other premises, and physical location;
 - d. Name of transporter;
 - e. Number, ~~and~~ description, ~~and identification~~ of livestock ~~each sheep or goat as prescribed in R3-2-413;~~
 - f. ~~Number, description, and~~ Official identification of each dairy cattle and sexually intact cattle over 18 months of age shipped out of state calf, cow, heifer, steer, or bull and back tag numbers of culled dairy cattle;
 - g. Brand number, ~~and~~ expiration date, ~~if available~~, and brand location;
 - h. Name, ~~and~~ address, ~~and telephone number~~ of buyer or agent, ~~and signature if present at sale;~~
 - i. Number of head of cattle sold for which Beef Council fees are payable under A.R.S. §§ 3-1236 and 3-1238; ~~and.~~
 - ~~j. Number of head of livestock for which an inspection fee is payable under A.R.S. § 3-1337(D).~~
2. The owner or owner's agent of livestock or the owner or operator of a dairy or feedlot shall complete a self-inspection certificate, except when livestock are subject to inspection by a Division employee under R3-2-701, and distribute copies of the certificate as follows:
 - a. One copy and any fees that are owed under subsections ~~(C)(1)(i) and (C)(1)(j)~~ shall be sent to the Department within 10 days after the end of the month in which ~~the livestock are moved or~~ ownership is transferred;
 - b. If the livestock are shipped, the original certificate shall accompany the livestock whenever they are in transit and one copy shall be retained by the person transporting the livestock; or
 - c. If ownership of the livestock is transferred without shipment, two copies shall be provided to the new owner or agent; and one copy shall be retained by the seller.
3. A certificate may be used once to either transfer livestock ownership or to move livestock to a specific destination. If the livestock are diverted to a destination other than that stated on the self-inspection certificate, the certificate is void. The owner, agent, or operator shall complete a new certificate and send both the voided and new certificates to the Department within 10 days after the end of the month in which the certificates are issued or voided.
4. An owner, agent, or operator shall use a self-inspection certificate only with a shipment of livestock matching the description for which the certificate is issued and only for the self-inspection issued date. If any of the information on the self-inspection certificate changes, the certificate is void and the owner, agent, or operator shall complete a new certificate.



- 5. An altered, erased, completed but unused, or defaced self-inspection certificate is void. A voided certificate shall be returned to the Department within 10 days after the end of the month in which it is voided.
- 6. Upon request, unused certificates shall be returned to the Department by the owner, agent, or operator. If a commercial operation licensed for self-inspection is sold, leased, transferred, or otherwise disposed of, the owner, agent, or operator shall notify the Department and return all self-inspection certificates to the Department within 30 days of the transaction.
- D.** Sale of livestock. A seller shall document a sale by completing a self-inspection certificate as prescribed in subsection (C) and providing a bill of sale to the purchaser as required under A.R.S. § 3-1291.
- E.** Feedlot receiving form.
 - 1. The operator of a feedlot shall document receipt of in-coming cattle on a form obtained from the Department. The operator shall include the following information on the form:
 - a. Name of feedlot and location;
 - b. Month and year for which report is made;
 - c. Number of cattle received, date received, and name and address of owner;
 - d. Description of the cattle;
 - e. If not Arizona native cattle, the import permit and health certificate numbers;
 - f. If native Arizona cattle, self-inspection form number or Department inspection certificate number; and
 - g. Pen number to which cattle are initially assigned.
 - 2. The operator shall return the completed form within 10 days after the end of the month of the reporting period.
- F.** Quarantine. Livestock under quarantine by the Department shall not be shipped or sold by use of a self-inspection certificate.
- G.** Violations. The Department shall process violations of this Section as prescribed under A.R.S. § 3-1203(D).

R3-2-703. Seasonal Self-inspection Certificate

- A.** Exhibition cattle, sheep, ~~and~~ goats, ~~and~~ swine.
 - 1. An applicant for a seasonal self-inspection certificate prescribed under A.R.S. § 3-1346 shall call the Department at (602) 542-6407 to request a seasonal self-inspection certificate. The applicant shall provide the answers to the following questions, as applicable:
 - a. Name, mailing address, physical address if different from mailing address, telephone number, and fax;
 - b. Name of 4-H or FFA group, and group leader;
 - e. ~~social security number;~~
 - ~~d~~-c. Description and identification of the animal;
 - ~~e~~-d. Permit number and health certificate number for an animal imported from another state; and
 - ~~f~~-e. Name of seller and self-inspection certificate number for an animal purchased from an Arizona seller.
 - 2. The Department employee who records the information required in subsection (A)(1) shall advise the applicant of the required fee prescribed under A.R.S. § 3-1346(A). The Department shall issue a seasonal self-inspection certificate upon receipt of the fee.
 - 3. An exhibitor shall provide the following information, as applicable, on a seasonal self-inspection certificate whenever an animal subject to seasonal self-inspection is moved or ownership is transferred:
 - a. Name, address, telephone number, and signature;
 - b. Date of movement;
 - c. Name of exhibition and location;
 - d. Final disposition of the animal (sale, death, or retention) and date of occurrence; and
 - e. If the animal is sold, name of purchaser (person or slaughter plant).
 - 4. The holder of a seasonal self-inspection certificate shall return the certificate to the Department within two weeks of the sale or slaughter of the animal or at the end of the show season if the animal is retained.
- B.** ~~Exhibition swine. The requirements prescribed at R3-2-411 apply to exhibition swine.~~

NOTICES OF RULEMAKING DOCKET OPENING

This section of the *Arizona Administrative Register* contains Notices of Rulemaking Docket Opening.

A docket opening is the first part of the administrative rulemaking process. It is an “announcement” that the agency intends to work on its rules.

When an agency opens a rulemaking docket to consider rulemaking, the Administrative Procedure Act (APA) requires the publication of the Notice of Rulemaking Docket Opening.

Under the APA effective January 1, 1995, agencies must submit a Notice of Rulemaking Docket Opening before beginning the formal rulemaking process. Many times an agency may file the Notice of Rulemaking Docket Opening with the Notice of Proposed Rulemaking.

The Office of the Secretary of State is the filing office and publisher of these notices. Questions about the interpretation of this information should be directed to the agency contact person listed in item #4 of this notice.

NOTICE OF RULEMAKING DOCKET OPENING

BOARD OF BEHAVIORAL HEALTH EXAMINERS

[R16-166]

- 1. Title and its heading:** 4, Professions and Occupations

Chapter and its heading: 6, Board of Behavioral Health Examiners

Article and its heading: 1, Definitions
2, General Provisions
3, Licensure
4, Social Work
5, Counseling
6, Marriage and Family Therapy
7, Substance Abuse Counseling
8, License Renewal and Continuing Education
9, Appeal of Licensure or License Renewal Eligibility
10, Disciplinary Process
11, Standards of Practice

Section numbers: R4-6-101, R4-6-201 through R4-6-216, R4-6-301 through R4-6-307, R4-6-401 through R4-6-404, R4-6-501 through R4-6-505, R4-6-601 through R4-6-605, R4-6-701 through R4-6-707, R4-6-801 through R4-6-803, R4-6-901 through R4-6-902, R4-6-1001 through R4-6-1002, and R4-6-1101 through R4-6-1106
- 2. The subject matter of the proposed rule:**
In 2013, the legislature substantially revised the Board’s statutes. In 2015, new rules became effective implementing the legislative changes. This rulemaking seeks to provide clarification to confusing language and technical corrections to the rules effective on November 1, 2015.
- 3. A citation to all published notices relating to the proceeding:**
None
- 4. Name and address of agency personnel with whom persons may communicate regarding the rule:**

Name: Donna Dalton, Deputy Director
Address: Board of Behavioral Health Examiners
3443 N. Central Ave., Suite 1700
Phoenix, AZ 85012
Telephone: (602) 542-1811
Fax: (602) 364-0890
E-mail: donna.dalton@azbbhe.us
Web site: www.azbbhe.us
- 5. The time during which the agency will accept written comments and the time and place where oral comments may be made:**
The Board will accept comments during business hours at the address listed in item 4. The Board’s web site also has information regarding the rulemaking including additional methods for submitting written comments.
- 6. A timetable for agency decisions or other action on the proceeding, if known:**
To be determined



NOTICE OF RULEMAKING DOCKET OPENING

BOARD OF PHARMACY

[R16-167]

- 1. Title and its heading:** 4, Professions and Occupations
Chapter and its heading: 23, Board of Pharmacy
Article and its heading: 4, Professional Practices
Section numbers: R4-23-411 (*Additional Sections may be made, amended, or repealed as necessary*)

2. The subject matter of the proposed rule:

During the last legislative session, the legislature amended A.R.S. § 32-1974, regarding administration of immunizations, vaccines, and emergency medications by a pharmacist (See Laws 2016, Chapter 267). The amended statute allows a licensed pharmacist or an intern working under the immediate personal supervision of a licensed pharmacist to administer, without a prescription order, an influenza immunization to an individual who is at least three years old, booster doses for the primary adolescent series recommended by the Centers for Disease Control (CDC), all immunizations recommended by the CDC for an individual who is at least 13 years old, and emergency medication to manage an acute allergic reaction to a medication or during a public health emergency response. The amended statute allows a licensed pharmacist or a intern working under the immediate personal supervision of a licensed pharmacist to administer, with a prescription order, the first dose for the primary adolescent series to an individual who is between the ages of six and 13 years.

A licensed pharmacist or a licensed intern working under the immediate personal supervision of a licensed pharmacist who wants to administer immunizations, vaccines, or emergency medication is required to obtain certification from the Board. The amended statute also requires a licensed pharmacist who administers an immunization, vaccine, or emergency medication to an individual to report the administration to the individual's primary-care physician or provider within 48 hours.

This rulemaking makes conforming changes to an existing rule. It also reduces the information required to be provided to an individual's primary-care physician or provider so the information can be provided through an automated physician notification process rather than manually.

An exemption from EO2016-03 was provided in e-mails from Christina Corieri, Policy Advisor for Health and Human Services in the Governor's office, dated April 15 and June 3, 2016.

3. A citation to all published notices relating to the proceeding:

None

4. Name and address of agency personnel with whom persons may communicate regarding the rule:

Name: Kamlesh Gandhi
 Address: Board of Pharmacy
 1616 W. Adams, Suite 120
 Phoenix, AZ 85007
 Telephone: (602) 771-2740
 Fax: (602) 771-2749
 E-mail: kgandhi@azpharmacy.gov
 Web site: www.azpharmacy.gov

5. The time during which the agency will accept written comments and the time and place where oral comments may be made:

The Board will accept comments during business hours at the address listed in item 4. Information regarding an oral proceeding will be included in the Notice of Proposed Rulemaking.

6. A timetable for agency decisions or other action on the proceeding, if known:

To be determined



NOTICE OF RULEMAKING DOCKET OPENING

DEPARTMENT OF HEALTH SERVICES
MEDICAL MARIJUANA PROGRAM

[R16-162]

- 1. Title and its heading: 9, Health Services
Chapter and its heading: 17, Department of Health Services - Medical Marijuana Program
Articles and their headings: 2, Qualifying Patients and Designated Caregivers
3, Dispensaries and Dispensary Agents
Section numbers: R9-17-202, R9-17-204, and R9-17-310 (The Department may add, delete, or modify other Sections, as necessary.)

2. The subject matter of the proposed rules:
On April 5, 2016, Governor Doug Ducey signed HB 2061 into law, requiring the Arizona Department of Health Services (Department) to adopt rules warning of potential risks related to medical marijuana and pregnancy. Under the legislation, the rules must require each certifying physician to address the potential dangers to fetuses caused by smoking or ingesting marijuana while pregnant or to infants while breastfeeding as well as the risk of being reported to the Arizona Department of Child Safety during pregnancy or at the birth of the child by persons who are required to report. The rules must also require each nonprofit medical marijuana dispensary to conspicuously post signs addressing these same potential risks. After receiving an exception from the rulemaking moratorium, established by Executive Order 2016-03, the Department is amending the rules in Arizona Administrative Code Title 9, Chapter 17 to comply with HB 2061. The proposed amendments will conform to rulemaking format and style requirements of the Governor’s Regulatory Review Council and the Office of the Secretary of State. The Department may add, delete, or modify other Sections, as necessary.

3. A citation to all published notices relating to the proceeding:
None

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

Name: Thomas Salow, Deputy Assistant Director
Address: Arizona Department of Health Services
Division of Licensing Services
150 N. 18th Ave., Suite 400
Phoenix, AZ 85007
Telephone: (602) 364-1935
Fax: (602) 364-4808
E-mail: Thomas.Salow@azdhs.gov
or

Name: Robert Lane, Manager
Address: Arizona Department of Health Services
Office of Administrative Counsel and Rules
150 N. 18th Ave., Suite 200
Phoenix, AZ 85007
Telephone: (602) 542-1020
Fax: (602) 364-1150
E-mail: Robert.Lane@azdhs.gov

5. The time during which the agency will accept written comments and the time and place where oral comments may be made:

Written comments will be accepted at the addresses listed in item #4 until the close of record, which has not yet been determined. The Department has not scheduled any oral proceedings at this time.

6. A timetable for agency decisions or other action on the proceeding, if known:

To be announced in the Notice of Proposed Rulemaking



NOTICES OF PUBLIC INFORMATION

Notices of Public Information contain corrections that agencies wish to make to their notices of rulemaking; miscellaneous rulemaking information that does not fit into any other category of notice; and other types of information required by statute to be published in the Register.

Because of the variety of Notices of Public Information, the Office of the Secretary of State has not established a specific publishing format for these notices. We do however require agencies to use a numbered list of questions and answers and follow our filing requirements by presenting receipts with electronic and paper copies.

NOTICE OF PUBLIC INFORMATION

DEPARTMENT OF REAL ESTATE

[M16-204]

1. Title of the substantive policy statement and the substantive policy statement number by which the document is referenced:

No. 2007.17 Short Title: Electronic license certificate complies with statutory requirement

No. 2007.18 Short Title: Real Estate Licensee Advertising

No. 2008.03 Short Title: Acceptable Forms of Payment

2. The public information relating to the substantive policy statement:

The Arizona Department of Real Estate (Department) is repealing the substantive policy statements specified in paragraph 1, effective August 8, 2016. The information provided in No. 2008.03 was replaced with No. 2016.01 with the same short title; No. 2007.18 was repealed because it no longer adds additional clarity to current statute; and No. 2007.17 is no longer necessary because statute was amended in the 2016 Legislative Session to reflect the policy.

3. The name and address of agency personnel with whom persons may communicate regarding this notice of public information:

Name: Louis Dettorre, Deputy Commissioner

Address: Department of Real Estate
2910 N. 44th Street, Suite 100
Phoenix, AZ 85018

Telephone: (602) 771-7760

Fax: (602) 468-2562

E-mail: ldettorre@azre.gov



NOTICES OF SUBSTANTIVE POLICY STATEMENT

The Administrative Procedure Act (APA) requires the publication of Notices of Substantive Policy Statement issued by agencies (A.R.S. § 41-1013(B)(14)).

Substantive policy statements are written expressions which inform the general public of an agency's current approach to rule or regulation practice.

Substantive policy statements are advisory only. A substantive policy statement does not include internal procedural documents that only affect the internal

procedures of the agency and does not impose additional requirements or penalties on regulated parties or include confidential information or rules made in accordance with the APA.

If you believe that a substantive policy statement does impose additional requirements or penalties on regulated parties you may petition the agency under A.R.S. § 41-1033 for a review of the statement.

NOTICE OF SUBSTANTIVE POLICY STATEMENT

DEPARTMENT OF REAL ESTATE

[M16-205]

1. Subject of the substantive policy statement and the substantive policy statement number by which the policy statement is referenced:

Electronic Signatures: No. 2005.10

2. Date the substantive policy statement was issued and the effective date of the policy statement if different from the issuance date:

Effective: November 5, 2004; Renumbered April 1, 2005; Revised August 8, 2016

3. Summary if the contents of the substantive policy statement:

This policy statement clarifies the Department's policy on brokers use of electronic signatures according to statute. Authority is found in A.R.S. §§ 32-2151.01 and A.A.C. R4-28-1103.

4. A statement as to whether the substantive policy statement is a new statement or a revision:

This is a revision to an existing policy statement.

5. The name and address of the person to whom questions and comments about the substantive policy statement may be directed:

Name: Louis Dettorre
Address: Department of Real Estate
2910 N. 44th St., Suite 100
Phoenix, AZ 85018
Telephone: (602) 771-7760
Fax: (602) 468-0562
E-mail: ldettorre@azre.gov

6. Information about where a person may obtain a copy of the substantive policy statement and the costs for obtaining the policy statement:

Copies of this policy statement may be obtained at no cost via e-mail to the person listed above or on the Department web site: www.azre.gov. Hard copies may be obtained by contacting the person listed above for \$0.25 per page.

NOTICE OF SUBSTANTIVE POLICY STATEMENT

DEPARTMENT OF REAL ESTATE

[M16-206]

1. Subject of the substantive policy statement and the substantive policy statement number by which the policy statement is referenced:

Fair Housing Course Substitute: No. 2005.14

2. Date the substantive policy statement was issued and the effective date of the policy statement if different from the issuance date:

Effective: August 9, 2005; Revised November 5, 2008, Revised August 8, 2016.

3. Summary if the contents of the substantive policy statement:

This policy statement clarifies the Department's policy on Fair Housing Issues as mandatory credit hours for license



renewal. Authority is found in A.R.S. §§ 32-2130(A), 32-2130; A.A.C. R4-28-402(A)(5), A.A.C. R4-28-402(B).

4. A statement as to whether the substantive policy statement is a new statement or a revision:

This is a revision to an existing policy statement. The email address previously listed was no longer accurate. The substance of the SPS is unchanged.

5. The name and address of the person to whom questions and comments about the substantive policy statement may be directed:

Name: Louis Dettorre
Address: Department of Real Estate
2910 N. 44th St., Suite 100
Phoenix, AZ 85018
Telephone: (602) 771-7760
Fax: (602) 468-0562
E-mail: ldettorre@azre.gov

6. Information about where a person may obtain a copy of the substantive policy statement and the costs for obtaining the policy statement:

Copies of this policy statement may be obtained at no cost via e-mail to the person listed above or on the Department web site: www.azre.gov. Hard copies may be obtained by contacting the person listed above for \$0.25 per page.



GOVERNOR EXECUTIVE ORDERS

The Administrative Procedure Act (APA) requires the full-text publication of Governor Executive Orders.

With the exception of egregious errors, content (including spelling, grammar, and punctuation) of these orders has been reproduced as submitted.

In addition, the Register shall include each statement filed by the Governor in granting a commutation, pardon or reprieve, or stay or suspension of execution where a sentence of death is imposed.

EXECUTIVE ORDER 2016-03

Internal Review of Administrative Rules; Moratorium to Promote Job Creation and Customer-Service-Oriented Agencies

Editor's Note: This Executive Order is being reproduced in each issue of the Administrative Register until its expiration on December 31, 2016, as a notice to the public regarding state agencies' rulemaking activities.

[M16-29]

WHEREAS, Arizona is poised to lead the nation in job growth;

WHEREAS, burdensome regulations inhibit job growth and economic development;

WHEREAS, small businesses and startups are especially hurt by regulations;

WHEREAS, each agency of the State of Arizona should promote customer-service-oriented principles for the people that it serves;

WHEREAS, each State agency should undertake a critical and comprehensive review of its administrative rules and take action to reduce the regulatory burden, administrative delay, and legal uncertainty associated with government regulation;

WHEREAS, overly burdensome, antiquated, contradictory, redundant, and nonessential regulations should be repealed;

WHEREAS, Article 5, Section 4 of the Arizona Constitution and Title 41, Chapter 1, Article 1 of the Arizona Revised Statutes vests the executive power of the State of Arizona in the Governor;

NOW, THEREFORE, I, Douglas A. Ducey, by virtue of the authority vested in me by the Constitution and laws of the State of Arizona hereby declare the following:

- 1. A State agency subject to this Order, shall not conduct any rulemaking except as permitted by this Order.
2. A State agency subject to this Order, shall not conduct any rulemaking, whether informal or formal, without the prior written approval of the Office of the Governor. In seeking approval, a State agency shall address one or more of the following as justification for the rulemaking:
a. To fulfill an objective related to job creation, economic development, or economic expansion in this State.
b. To reduce or ameliorate a regulatory burden while achieving the same regulatory objective.
c. To prevent a significant threat to the public health, peace, or safety.
d. To avoid violating a court order or federal law that would result in sanctions by a court or the federal government against an agency for failure to conduct the rulemaking action.
e. To comply with a federal statutory or regulatory requirement if such compliance is related to a condition for the receipt of federal funds or participation in any federal program.
f. To comply with a state statutory requirement.
g. To fulfill an obligation related to fees or any other action necessary to implement the State budget that is certified by the Governor's Office of Strategic Planning and Budgeting.
h. To promulgate a rule or other item that is exempt from Title 41, Chapter 6, Arizona Revised Statutes, pursuant to section 41-1005, Arizona Revised Statutes.
i. To address matters pertaining to the control, mitigation, or eradication of waste, fraud, or abuse within an agency or wasteful, fraudulent, or abusive activities perpetrated against an agency.
j. To eliminates rules that are antiquated, redundant or otherwise no longer necessary for the operation of state government.
3. For the purposes of this Order, the term "State agencies," includes without limitation, all executive departments, agencies, offices, and all state boards and commissions, except for: (a) any State agency that is headed by a single elected State official, (b) the Corporation Commission and (c) any board or commission established by ballot measure during or after the November 1998 general election. Those State agencies, boards and commissions excluded



from this Order are strongly encouraged to voluntarily comply with this Order in the context of their own rulemaking processes.

4. This Order does not confer any legal rights upon any persons and shall not be used as a basis for legal challenges to rules, approvals, permits, licenses or other actions or to any inaction of a State agency. For the purposes of this Order, “person,” “rule,” and “rulemaking” have the same meanings prescribed in Arizona Revised Statutes Section 41-1001.
5. This Executive Order expires on December 31, 2016.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Arizona.

Douglas A. Ducey
GOVERNOR

DONE at the Capitol in Phoenix on this Eighth day of February in the Year Two Thousand and Fifteen and of the Independence of the United States of America the Two Hundred and Thirty-Fourth.

ATTEST:

Michele Reagan
Secretary of State

REGISTER INDEXES

The *Register* is published by volume in a calendar year (See “Information” in the front of each issue for a more detailed explanation).

Abbreviations for rulemaking activity in this Index include:

PROPOSED RULEMAKING

PN = Proposed new Section
PM = Proposed amended Section
PR = Proposed repealed Section
P# = Proposed renumbered Section

SUPPLEMENTAL PROPOSED RULEMAKING

SPN = Supplemental proposed new Section
SPM = Supplemental proposed amended Section
SPR = Supplemental proposed repealed Section
SP# = Supplemental proposed renumbered Section

FINAL RULEMAKING

FN = Final new Section
FM = Final amended Section
FR = Final repealed Section
F# = Final renumbered Section

SUMMARY RULEMAKING**PROPOSED SUMMARY**

PSMN = Proposed Summary new Section
PSMM = Proposed Summary amended Section
PSMR = Proposed Summary repealed Section
PSM# = Proposed Summary renumbered Section

FINAL SUMMARY

FSMN = Final Summary new Section
FSMM = Final Summary amended Section
FSMR = Final Summary repealed Section
FSM# = Final Summary renumbered Section

EXPEDITED RULEMAKING**PROPOSED EXPEDITED**

PEN = Proposed Expedited new Section
PEM = Proposed Expedited amended Section
PER = Proposed Expedited repealed Section
PE# = Proposed Expedited renumbered Section

SUPPLEMENTAL EXPEDITED

SPEN = Supplemental Proposed Expedited new Section
SPEM = Supplemental Proposed Expedited amended Section
SPER = Supplemental Proposed Expedited repealed Section
SPE# = Supplemental Proposed Expedited renumbered Section

FINAL EXPEDITED

FEN = Final Expedited new Section
FEM = Final Expedited amended Section
FER = Final Expedited repealed Section
FE# = Final Expedited renumbered Section

EXEMPT RULEMAKING**EXEMPT PROPOSED**

PXN = Proposed Exempt new Section
PXM = Proposed Exempt amended Section
PXR = Proposed Exempt repealed Section
PX# = Proposed Exempt renumbered Section

EXEMPT SUPPLEMENTAL PROPOSED

SPXN = Supplemental Proposed Exempt new Section
SPXR = Supplemental Proposed Exempt repealed Section
SPXM = Supplemental Proposed Exempt amended Section
SPX# = Supplemental Proposed Exempt renumbered Section

FINAL EXEMPT RULMAKING

FXN = Final Exempt new Section
FXM = Final Exempt amended Section
FXR = Final Exempt repealed Section
FX# = Final Exempt renumbered Section

EMERGENCY RULEMAKING

EN = Emergency new Section
EM = Emergency amended Section
ER = Emergency repealed Section
E# = Emergency renumbered Section
EEXP = Emergency expired

RECODIFICATION OF RULES

RC = Recodified

REJECTION OF RULES

RJ = Rejected by the Attorney General

TERMINATION OF RULES

TN = Terminated proposed new Sections
TM = Terminated proposed amended Section
TR = Terminated proposed repealed Section
T# = Terminated proposed renumbered Section

RULE EXPIRATIONS

EXP = Rules have expired

See also “emergency expired” under emergency rulemaking

CORRECTIONS

C = Corrections to Published Rules

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RULEMAKING ACTIVITY INDEX

Rulemakings are listed in the Index by Chapter, Section number, rulemaking activity abbreviation and by volume page number. Use the page guide above to determine the *Register* issue number to review the rule. Headings for the Subchapters, Articles, Parts, and Sections are not indexed.

THIS INDEX INCLUDES RULEMAKING ACTIVITY THROUGH ISSUE 35 OF VOLUME 22.

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R4-8-403.	PM-697; FM-2175		
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R4-8-411.	EXP-14		
R4-8-412.	EXP-14		
R4-8-502.	PM-697; FM-2175		
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R3-2-602.	EM-1750		
R3-2-603.	EM-1750		
R3-2-605.	EM-1750		
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R3-2-608.	EM-1750		
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R3-2-610.	EM-1750		
R3-2-611.	EM-1750		
R3-2-617.	ER-1750		
R3-2-618.	ER-1750		
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R9-22-404.	PN-1289	R9-21-104.	PM-731; FM-2019
R9-22-405.	PN-1289	R9-21-105.	PM-731; FM-2019
R9-22-406.	PN-1289	R9-21-106.	PM-731; FM-2019
R9-22-407.	PN-1289	R9-21-201.	PM-731; FM-2019
R9-22-408.	PN-1289	R9-21-203.	PM-731; FM-2019
R9-22-701.	PM-761; FM-2187	R9-21-204.	PM-731; FM-2019
R9-22-712.15.	PM-770	R9-21-205.	PM-731; FM-2019
R9-22-712.35.	PM-761; FM-2187	R9-21-206.	PM-731; FM-2019
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R9-22-712.61.	PM-761; FM-2187	R9-21-208.	PM-731; FM-2019
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R9-22-712.75.	PM-761; FM-2187	R9-21-303.	PM-731; FM-2019
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R9-21-310.	PM-731; FM-2019	sion for	R9-26-101.	P#-177; F#-1675	R4-11-203.	FM-371
R9-21-311.	PM-731; FM-2019		R9-26-201.	P#-177; PM-177; F#-1675; FM-1675	R4-11-204.	FM-371
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R9-21-403.	PM-731; FM-2019		R9-26-203.	P#-177; PM-177; F#-1675; FM-1675	R4-11-303.	FM-371
R9-21-404.	PM-731; FM-2019		R9-26-204.	P#-177; PM-177; F#-1675; FM-1675	R4-11-304.	FM-371
R9-21-405.	PM-731; FM-2019				R4-11-305.	FM-371
R9-21-406.	PM-731; FM-2019		R9-26-205.	P#-177; PM-177; F#-1675; FM-1675	Economic Security, Department of - Developmental Disabilities	
R9-21-407.	PM-731; FM-2019		R9-26-206.	P#-177; PM-177; F#-1675; FM-1675	R6-6-1401.	EXP-14
R9-21-408.	PM-731; FM-2019		R9-26-207.	P#-177; PN-177 F#-1675; FN-1675	Economic Security, Department of - Social Services	
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R9-30-208.	PR-805		R9-26-304.	PR-177; P#-177; FR-1675; F#-1675	R6-10-126.	EXP-1393
R9-30-209.	PM-805				R6-10-304.	EXP-1393
R9-30-210.	PR-805				Education, State Board of	
R9-30-211.	PR-805				R7-2-201.	FXM-2239
R9-30-212.	PM-805		R9-26-501.	PM-177; FM-1675	R7-2-300.	FXN-143
R9-30-213.	PM-805				R7-2-301.	FXM-143
R9-30-214.	PM-805		R9-26-502.	PM-177; FM-1675	R7-2-302.	FXM-143; FNM-197
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		R9-15-201.	FXR-851; FXN-851	R9-19-117.	FXR-1782
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		R9-15-203.	FXR-851; FXN-851	R9-19-120.	FXR-1782
		R9-15-204.	FXR-851; FXN-851	R9-19-201.	FXR-1782; FXN-1782
		R9-15-205.	FXR-851; FXN-851	R9-19-202.	FXR-1782; FXN-1782
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		R9-15-206.	FXR-851; FXN-851	R9-19-204.	FXN-1782
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		R9-15-210.	FXR-851; FXN-851	R9-19-209.	FXN-1782
		R9-15-211.	FXR-851; FXN-851	R9-19-210.	FXN-1782
		R9-15-212.	FXR-851; FXN-851	R9-19-211.	FXN-1782
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		R9-15-214.	FXN-851; FXR-851;	R9-19-301.	FXM-1782
		R9-15-215.	FXN-851; FXR-851;	R9-19-302.	FX#-1782; FXN-1782
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		R9-15-303.	FXR-851	R9-19-308.	FX#-1782; FXM-1782
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R9-19-316.	FXN-1782	R19-3-549.	PM-1091	R13-4-204.	FM-555	
R9-19-317.	FXN-1782	R19-3-553.	PM-1091	R13-4-205.	FM-555	
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R9-19-412.	FXR-1782	R19-3-568.	P#-1091	R4-39-104.	FM-921	
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R20-5-1309.	FM-1730	R4-19-811.	FXM-1900	R4-39-308.	FM-921	
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R12-1-303.	FM-603	R12-1-19107.	FN-603		FXM-1852
R12-1-306.	FM-603	R12-1-19109.	FN-603	R15-10-506.	FXN-1852
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R12-1-313.	FM-603	R4-45-101.	PM-549;	R15-3-301.	FXM-1843
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2016 RULES EFFECTIVE DATES CALENDAR

A.R.S. § 41-1032(A), as amended by Laws 2002, Ch. 334, § 8 (effective August 22, 2002), states that a rule generally becomes effective 60 days after the day it is filed with the Secretary of State's Office. The following table lists filing dates and effective dates for rules that follow this provision. Please also check the rulemaking Preamble for effective dates.

January		February		March		April		May		June	
Date Filed	Effective Date										
1/1	3/1	2/1	4/1	3/1	4/30	4/1	5/31	5/1	6/30	6/1	7/31
1/2	3/2	2/2	4/2	3/2	5/1	4/2	6/1	5/2	7/1	6/2	8/1
1/3	3/3	2/3	4/3	3/3	5/2	4/3	6/2	5/3	7/2	6/3	8/2
1/4	3/4	2/4	4/4	3/4	5/3	4/4	6/3	5/4	7/3	6/4	8/3
1/5	3/5	2/5	4/5	3/5	5/4	4/5	6/4	5/5	7/4	6/5	8/4
1/6	3/6	2/6	4/6	3/6	5/5	4/6	6/5	5/6	7/5	6/6	8/5
1/7	3/7	2/7	4/7	3/7	5/6	4/7	6/6	5/7	7/6	6/7	8/6
1/8	3/8	2/8	4/8	3/8	5/7	4/8	6/7	5/8	7/7	6/8	8/7
1/9	3/9	2/9	4/9	3/9	5/8	4/9	6/8	5/9	7/8	6/9	8/8
1/10	3/10	2/10	4/10	3/10	5/9	4/10	6/9	5/10	7/9	6/10	8/9
1/11	3/11	2/11	4/11	3/11	5/10	4/11	6/10	5/11	7/10	6/11	8/10
1/12	3/12	2/12	4/12	3/12	5/11	4/12	6/11	5/12	7/11	6/12	8/11
1/13	3/13	2/13	4/13	3/13	5/12	4/13	6/12	5/13	7/12	6/13	8/12
1/14	3/14	2/14	4/14	3/14	5/13	4/14	6/13	5/14	7/13	6/14	8/13
1/15	3/15	2/15	4/15	3/15	5/14	4/15	6/14	5/15	7/14	6/15	8/14
1/16	3/16	2/16	4/16	3/16	5/15	4/16	6/15	5/16	7/15	6/16	8/15
1/17	3/17	2/17	4/17	3/17	5/16	4/17	6/16	5/17	7/16	6/17	8/16
1/18	3/18	2/18	4/18	3/18	5/17	4/18	6/17	5/18	7/17	6/18	8/17
1/19	3/19	2/19	4/19	3/19	5/18	4/19	6/18	5/19	7/18	6/19	8/18
1/20	3/20	2/20	4/20	3/20	5/19	4/20	6/19	5/20	7/19	6/20	8/19
1/21	3/21	2/21	4/21	3/21	5/20	4/21	6/20	5/21	7/20	6/21	8/20
1/22	3/22	2/22	4/22	3/22	5/21	4/22	6/21	5/22	7/21	6/22	8/21
1/23	3/23	2/23	4/23	3/23	5/22	4/23	6/22	5/23	7/22	6/23	8/22
1/24	3/24	2/24	4/24	3/24	5/23	4/24	6/23	5/24	7/23	6/24	8/23
1/25	3/25	2/25	4/25	3/25	5/24	4/25	6/24	5/25	7/24	6/25	8/24
1/26	3/26	2/26	4/26	3/26	5/25	4/26	6/25	5/26	7/25	6/26	8/25
1/27	3/27	2/27	4/27	3/27	5/26	4/27	6/26	5/27	7/26	6/27	8/26
1/28	3/28	2/28	4/28	3/28	5/27	4/28	6/27	5/28	7/27	6/28	8/27
1/29	3/29	2/29	4/29	3/29	5/28	4/29	6/28	5/29	7/28	6/29	8/28
1/30	3/30			3/30	5/29	4/30	6/29	5/30	7/29	6/30	8/29
1/31	3/31			3/31	5/30			5/31	7/30		



July		August		September		October		November		December	
Date Filed	Effective Date										
7/1	8/30	8/1	9/30	9/1	10/31	10/1	11/30	11/1	12/31	12/1	1/30/13
7/2	8/31	8/2	10/1	9/2	11/1	10/2	12/1	11/2	1/1/13	12/2	1/31/13
7/3	9/1	8/3	10/2	9/3	11/2	10/3	12/2	11/3	1/2/13	12/3	2/1/13
7/4	9/2	8/4	10/3	9/4	11/3	10/4	12/3	11/4	1/3/13	12/4	2/2/13
7/5	9/3	8/5	10/4	9/5	11/4	10/5	12/4	11/5	1/4/13	12/5	2/3/13
7/6	9/4	8/6	10/5	9/6	11/5	10/6	12/5	11/6	1/5/13	12/6	2/4/13
7/7	9/5	8/7	10/6	9/7	11/6	10/7	12/6	11/7	1/6/13	12/7	2/5/13
7/8	9/6	8/8	10/7	9/8	11/7	10/8	12/7	11/8	1/7/13	12/8	2/6/13
7/9	9/7	8/9	10/8	9/9	11/8	10/9	12/8	11/9	1/8/13	12/9	2/7/13
7/10	9/8	8/10	10/9	9/10	11/9	10/10	12/9	11/10	1/9/13	12/10	2/8/13
7/11	9/9	8/11	10/10	9/11	11/10	10/11	12/10	11/11	1/10/13	12/11	2/9/13
7/12	9/10	8/12	10/11	9/12	11/11	10/12	12/11	11/12	1/11/13	12/12	2/10/13
7/13	9/11	8/13	10/12	9/13	11/12	10/13	12/12	11/13	1/12/13	12/13	2/11/13
7/14	9/12	8/14	10/13	9/14	11/13	10/14	12/13	11/14	1/13/13	12/14	2/12/13
7/15	9/13	8/15	10/14	9/15	11/14	10/15	12/14	11/15	1/14/13	12/15	2/13/13
7/16	9/14	8/16	10/15	9/16	11/15	10/16	12/15	11/16	1/15/13	12/16	2/14/13
7/17	9/15	8/17	10/16	9/17	11/16	10/17	12/16	11/17	1/16/13	12/17	2/15/13
7/18	9/16	8/18	10/17	9/18	11/17	10/18	12/17	11/18	1/17/13	12/18	2/16/13
7/19	9/17	8/19	10/18	9/19	11/18	10/19	12/18	11/19	1/18/13	12/19	2/17/13
7/20	9/18	8/20	10/19	9/20	11/19	10/20	12/19	11/20	1/19/13	12/20	2/18/13
7/21	9/19	8/21	10/20	9/21	11/20	10/21	12/20	11/21	1/20/13	12/21	2/19/13
7/22	9/20	8/22	10/21	9/22	11/21	10/22	12/21	11/22	1/21/13	12/22	2/20/13
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7/24	9/22	8/24	10/23	9/24	11/23	10/24	12/23	11/24	1/23/13	12/24	2/22/13
7/25	9/23	8/25	10/24	9/25	11/24	10/25	12/24	11/25	1/24/13	12/25	2/23/13
7/26	9/24	8/26	10/25	9/26	11/25	10/26	12/25	11/26	1/25/13	12/26	2/24/13
7/27	9/25	8/27	10/26	9/27	11/26	10/27	12/26	11/27	1/26/13	12/27	2/25/13
7/28	9/26	8/28	10/27	9/28	11/27	10/28	12/27	11/28	1/27/13	12/28	2/26/13
7/29	9/27	8/29	10/28	9/29	11/28	10/29	12/28	11/29	1/28/13	12/29	2/27/13
7/30	9/28	8/30	10/29	9/30	11/29	10/30	12/29	11/30	1/29/13	12/30	2/28/13
7/31	9/29	8/31	10/30			10/31	12/30			12/31	3/1/13



REGISTER PUBLISHING DEADLINES

The Secretary of State's Office publishes the Register weekly. There is a three-week turnaround period between a deadline date and the publication date of the Register. The weekly deadline dates and issue dates are shown below. Council meetings and Register deadlines do not correlate. Also listed are the earliest dates on which an oral proceeding can be held on proposed rulemakings or proposed delegation agreements following publication of the notice in the Register.

Table with 3 columns: Deadline Date (paper only) Friday, 5:00 p.m., Register Publication Date, and Oral Proceeding may be scheduled on or after. Rows list dates from June 10, 2016 to December 30, 2016.



GOVERNOR’S REGULATORY REVIEW COUNCIL DEADLINES

The following deadlines apply to all Five-Year-Review Reports and any adopted rule submitted to the Governor’s Regulatory Review Council. Council meetings and Register deadlines do not correlate. We publish these deadlines as a courtesy.

All rules and Five-Year Review Reports are due in the Council office by noon of the deadline date. The Council’s office is located at 100 N. 15th Ave., Suite 402, Phoenix, AZ 85007. For more information, call (602) 542-2058 or visit www.grrc.state.az.us.

GOVERNOR’S REGULATORY REVIEW COUNCIL DEADLINES FOR 2016

DEADLINE TO BE PLACED ON COUNCIL AGENDA	FINAL MATERIALS DUE FROM AGENCIES	DATE OF COUNCIL STUDY SESSION	DATE OF COUNCIL MEETING
November 17, 2015	December 18, 2015	December 29, 2015	January 5, 2016
December 21, 2015	January 15, 2016	January 26, 2016	February 2, 2016
January 19, 2016 (Tuesday)	February 12, 2016	February 23, 2016	March 1, 2016
February 16, 2016 (Tuesday)	March 18, 2016	March 29, 2016	April 5, 2016
March 21, 2016	April 15, 2016	April 26, 2016	May 5, 2016
April 18, 2016	May 20, 2016	June 1, 2016 (Wednesday)	June 7, 2016
May 23, 2016	June 17, 2016	June 28, 2016	July 6, 2016 (Wednesday)
June 20, 2016	July 15, 2016	July 26, 2016	August 2, 2016
July 18, 2016	August 19, 2016	August 30, 2016	September 7, 2016 (Wednesday)
August 22, 2016	September 16, 2016	September 27, 2016	October 4, 2016
September 19, 2016	October 14, 2016	October 25, 2016	November 1, 2016
October 17, 2016	November 18, 2016	November 29, 2016	December 6, 2016
November 21, 2016	December 16, 2016	December 28, 2016 (Wednesday)	January 4, 2017 (Wednesday)

*Materials must be submitted by **noon** on dates listed as a deadline for placement on a particular agenda. Placement on a particular agenda is not guaranteed.