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July 2, 2014

Via U.S. Mail

Small Business Regulatory Advisory Commission
c/o Ms. Dora Dominguez
New Mexico Economic Development Department
1100 St. Francis Drive
Santa Fe, New Mexico 87505

Re: Notice of Proposed Amendments to the Standards for Interstate and Intrastate Surface Waters Regulations 20.6.4 NMAC

Dear Chairman and Members of the Small Business Regulatory Advisory Commission:

The New Mexico Environment Department ("Department") hereby provides notice to the Small Business Regulatory Advisory Commission, pursuant to NMSA 1978, Section 14-4A-1 to -6, that the Resource Protection Division, Surface Water Quality Bureau ("SWQB") of the Department will petition the Water Quality Control Commission ("Commission") for regulatory amendments to portions of 20.6.4 NMAC. The review of 20.6.4 NMAC for necessary regulatory changes is required pursuant to the federal Water Pollution Control Act, and subsequent amendments, also known as the "Clean Water Act," 33 U.S.C. §§ 1251 to 1376. The amendments are also consistent with state statutes and regulations. *See generally* NMSA 1978, §74-6-1 to -17; 20.6.2 NMAC; and 20.6.4 NMAC. Attached hereto are the proposed regulatory amendments to portions of 20.6.4 NMAC.

The SWQB has conducted extensive pre-petition public input that included direct and general notice publication of the amendments. The SWQB, on June 25, 2014, submitted to the Commission a petition for hearing and request for designation of a hearing officer. The Commission's Administrator has placed this matter on the Commission's July 8, 2014 docket for consideration as docket item WQCC 14-05 (R). The SWQB has requested that the Commission set the matter for formal hearing at the regularly scheduled Commission meeting in March, 2015. If granted, the Commission will require opening of a formal public comment period for no less than thirty days.

It is important to note that as part of the pre-petition process, the SWQB evaluated the amendments for impacts, if any, on small business within and outside of New Mexico. The SWQB will continue to evaluate any potential impacts during the upcoming public comment and hearing. The Department and

SWQB welcome any comments, concerns, and/or recommendations from the Small Business Regulatory Advisory Commission.

If you have further questions, comments, or would like to have principal staff members meet and discuss the proposed rule amendments, please feel free to contact me at (505) 827-2855 or via email at kevin.powers@state.nm.us.

Sincerely,

Kevin J. Powers, *Esq.*
Assistant General Counsel

KP:kp

Enclosure

cc: Jeff Kendall, General Counsel
Erika Schwender, NMED/RPD Director
James Hogan, NMED/SWQB Chief
Kristine Pintado, NMED/SWQB

2013 TRIENNIAL REVIEW

PETITION

Proposed Amendments to Standards for Interstate and Intrastate Surface Waters 20.6.4 NMAC and Bases for Changes

New Mexico Environment Department
Surface Water Quality Bureau
Harold Runnels Building
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July 2014

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Attachments

1. Memo regarding most probable number (MPN) and colony forming units (cfu)
2. Justification for amending §20.6.4.16 Planned Use of a Piscicide by New Mexico Department of Game and Fish
3. Memo regarding Gila River description and specific conductivity changes segments 502 and 503
4. Draft Use Attainability Analysis (UAA) for Mimbres River segments 803, 804 and new segment 807

Hyperlinks to Use Attainability Analyses (UAAs)

1. HP UAAs for 18 non-perennial streams (statewide locations): http://www.nmenv.state.nm.us/swqb/documents/swqbdocs/Standards/UAA/UAA-UnclassifiedNon-PerennialReachesForNPDESPermits.pdf
2. HP UAAs for four non-perennial streams in southern New Mexico: http://www.nmenv.state.nm.us/swqb/documents/swqbdocs/Standards/UAA/HP/HydrologyProtocol-2013.pdf
3. HP UAAs for five drainages in the Chino Mine Investigation Area: http://www.nmenv.state.nm.us/swqb/UAA/Chino/index.html

Triennial Review Petition
July 2014

Introduction

This document contains the preliminary text of sections with the Bureau's proposal for changes followed by a brief rationale, or basis, for the change(s). Deleted materials are indicated by strikethrough, and changes to the rule text are indicated by underline. In some cases preceding a revision, sections are retained for context and clarity of scope.

Public Participation

The Surface Water Quality Bureau (Bureau) has, prior to this petition, published the announcement of a scoping phase and the intent to prepare for the Triennial Review. On April 3, 2013, the Bureau invited public input to identify issues of concern and to propose revisions for consideration in the standards, which ended on May 15, 2013. Bureau staff was also available to meet with stakeholder groups, as requested, for informal discussions regarding their issues of concern.

The Bureau published a Public Discussion Draft with proposals for changes to the water quality standards. The comment period for the Public Discussion Draft was conducted April 1 – May 30, 2014, and included a 30-day extension which was granted on April 28, 2014. The Bureau received formal comments from a variety of contributors including the U.S. Environmental Protection Agency (EPA), watershed/river conservation groups, municipalities, water districts, industrial/trade groups, private entities and citizens. Additions or changes to the water quality standards have been made in consideration of public comments received during the review period of the Bureau's Public Discussion Draft. There will be additional opportunities for public participation after the Bureau files the petition for a hearing on the revisions to the water quality standards with the Water Quality Control Commission.

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 4 STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

20.6.4.1 ISSUING AGENCY: Water Quality Control commission.
[20.6.4.1 NMAC - Rp 20 NMAC 6.1.1001, 10-12-00]

20.6.4.2 SCOPE: Except as otherwise provided by statute or regulation of the water quality control commission, this part governs all surface waters of the state of New Mexico, which are subject to the New Mexico Water Quality Act, Sections 74-6-1 through 74-6-17 NMSA 1978.
[20.6.4.2 NMAC - Rp 20 NMAC 6.1.1002, 10-12-00; A, 05-23-05]

20.6.4.3 STATUTORY AUTHORITY: This part is adopted by the water quality control commission pursuant to Subsection C of Section 74-6-4 NMSA 1978.
[20.6.4.3 NMAC - Rp 20 NMAC 6.1.1003, 10-12-00]

20.6.4.4 **DURATION:** Permanent.
[20.6.4.4 NMAC - Rp 20 NMAC 6.1.1004, 10-12-00]

20.6.4.5 **EFFECTIVE DATE:** October 12, 2000, unless a later date is indicated in the history note at the end of a section.
[20.6.4.5 NMAC - Rp 20 NMAC 6.1.1005, 10-12-00]

20.6.4.6 **OBJECTIVE:**

A. The purpose of this part is to establish water quality standards that consist of the designated use or uses of surface waters of the state, the water quality criteria necessary to protect the use or uses and an antidegradation policy.

B. The state of New Mexico is required under the New Mexico Water Quality Act (Subsection C of Section 74-6-4 NMSA 1978) and the federal Clean Water Act, as amended (33 U.S.C. Section 1251 *et seq.*) to adopt water quality standards that protect the public health or welfare, enhance the quality of water and are consistent with and serve the purposes of the New Mexico Water Quality Act and the federal Clean Water Act. It is the objective of the federal Clean Water Act to restore and maintain the chemical, physical and biological integrity of the nation's waters, including those in New Mexico. This part is consistent with Section 101(a)(2) of the federal Clean Water Act, which declares that it is the national goal that wherever attainable, an interim goal of water quality that provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved by July 1, 1983. Agricultural, municipal, domestic and industrial water supply are other essential uses of New Mexico's surface water; however, water contaminants resulting from these activities will not be permitted to lower the quality of surface waters of the state below that required for protection and propagation of fish, shellfish and wildlife and recreation in and on the water, where practicable.

C. Pursuant to Subsection A of Section 74-6-12 NMSA 1978, this part does not grant to the water quality control commission or to any other entity the power to take away or modify property rights in water.
[20.6.4.6 NMAC - Rp 20 NMAC 6.1.1006, 10-12-00; A, 05-23-05]

20.6.4.7 **DEFINITIONS:** Terms defined in the New Mexico Water Quality Act, but not defined in this part will have the meaning given in the Water Quality Act.

A. Terms beginning with numerals or the letter "A," and abbreviations for units.

(1) "4T3 temperature" means the temperature not to be exceeded for four or more consecutive hours in a 24-hour period on more than three consecutive days.

(2) "6T3 temperature" means the temperature not to be exceeded for six or more consecutive hours in a 24-hour period on more than three consecutive days.

(3) Abbreviations used to indicate units are defined as follows:

(a) "cfu/100 mL" means colony-forming units per 100 milliliters.

20.6.4.7.A(3)(b) through 20.6.4.7.A(3)(f) – No changes proposed

(g) **"MPN"** means most probable number per 100 milliliters.

(~~g~~h) **"NTU"** means nephelometric turbidity unit;

(~~h~~i) **"pCi/L"** means picocuries per liter.

(j) **"pH"** means the measure of the acidity or alkalinity and is expressed in standard units (su).

BASIS FOR CHANGE: The Bureau is proposing the addition of language to Subsections D and E of 20.6.4.900 NMAC that acknowledges the use of alternate enumeration methods for most probable number (MPN) approved by EPA (68 FR 43272, July 21, 2003 and 72 FR 14220, March 26, 2007) and used for the detection of enterococci and *E. coli* in ambient waters and in wastewater and sludge. Therefore, the abbreviation and units for most probable number (as MPN) is added (see also the memo in Attachment 1).

A definition for pH and the unit of measure for pH, standard units, is also suggested to be included in the abbreviations as pH is mentioned throughout the water quality standards, but neither pH nor its unit of measure (su) is defined.

20.6.4.7.A(4) through 20.6.4.7.B(4) – No changes proposed

C. Terms beginning with the letter "C".

(1) "CAS number" means an assigned number by chemical abstract service (CAS) to identify a substance. CAS numbers index information published in chemical abstracts by the American chemical society.

(2) "Chronic toxicity" means toxicity involving a stimulus that lingers or continues for a relatively long period relative to the life span of an organism. Chronic effects include, but are not limited to, lethality, growth impairment, behavioral modifications, disease and reduced reproduction.

(3) "Classified water of the state" means a surface water of the state, or reach of a surface water of the state, for which the commission has adopted a segment description and has designated a use or uses and applicable water quality criteria in 20.6.4.101 through 20.6.4.899 NMAC.

(4) "Closed basin" is a basin where topography prevents the surface outflow of water and water escapes by evapotranspiration or percolation.

(~~4~~5) "Coldwater" in reference to an aquatic life use means a surface water of the state where the water temperature and other characteristics are suitable for the support or propagation or both of coldwater aquatic life.

(~~5~~6) "Coolwater" in reference to an aquatic life use means the water temperature and other characteristics are suitable for the support or propagation of aquatic life whose physiological tolerances are intermediate between and may overlap those of warm and coldwater aquatic life.

(~~6~~7) "Commission" means the New Mexico water quality control commission.

(~~7~~8) "Criteria" are elements of state water quality standards, expressed as constituent concentrations, levels or narrative statements, representing a quality of water that supports a use. When criteria are met, water quality will protect the designated use.

BASIS FOR CHANGE: A definition for 'closed basin' is added.

20.6.4.7.D through 20.6.4.7.H(2) – No changes proposed

I. Terms beginning with the letter "I".

(1) "Industrial water supply" means the use or storage of water by a facility for process operations unless the water is supplied by a public water system. Industrial water supply does not include irrigation or other agricultural uses.

(2) "Intermittent" when used to describe a surface water of the state means the water body contains water for extended periods only at certain times of the year, such as when it receives seasonal flow from springs or melting snow.

(3) "Interstate waters" means all surface waters of the state that cross or form a part of the border between states.

(4) "Intrastate waters" means all surface waters of the state that are not interstate waters.

(5) "Irrigation" ~~or "irrigation storage"~~ means application of water to land areas to supply the water needs of beneficial plants.

(6) "Irrigation storage" means storage of water to supply the needs of beneficial plants.

J. Terms beginning with the letter "J". [RESERVED]

K. Terms beginning with the letter "K". [RESERVED]

BASIS FOR CHANGE: Most reservoirs classified in the water quality standards include the designated use 'irrigation storage' as described in Subsection C of 20.6.4.900 NMAC. The irrigation and irrigation storage designated uses have identical criteria assigned in Subsections C and J, of 20.6.4.900 NMAC, but irrigation storage is not defined in Subsection I, subparagraph I(5) of 20.6.4.7 NMAC. Therefore, a definition for irrigation storage is added.

20.6.4.7.L – through 20.6.4.W(5) - No changes proposed

X. Terms beginning with the letters "X" through "Z". [RESERVED]

[20.6.4.7 NMAC - Rp 20 NMAC 6.1.1007, 10-12-00; A, 7-19-01; A, 05-23-05; A, 07-17-05; A, 08-01-07; A, 12-01-10; A, 01-14-11, A, XX-XX-XX]

20.6.4.10 REVIEW OF STANDARDS; NEED FOR ADDITIONAL STUDIES:

A. Section 303(c)(1) of the federal Clean Water Act requires that the state hold public hearings at least once every three years for the purpose of reviewing water quality standards and proposing, as appropriate, necessary revisions to water quality standards.

B. It is recognized that, in some cases, numeric criteria have been adopted that reflect use designations rather than existing conditions of surface waters of the state. Narrative criteria are required for many constituents because accurate data on background levels are lacking. More intensive water quality monitoring may identify surface waters of the state where existing quality is considerably better than the established criteria. When justified by sufficient data and information, the water quality criteria will be modified to protect the attainable uses.

C. It is also recognized that contributions of water contaminants by diffuse nonpoint sources of water pollution may make attainment of certain criteria difficult. Revision of these criteria may be necessary as new information is obtained on nonpoint sources and other problems unique to semi-arid regions.

D. Site-specific criteria.

(1) The commission may adopt site-specific numeric criteria applicable to all or part of a surface water of the state based on relevant site-specific conditions such as:

(a) actual species at a site are more or less sensitive than those used in the national criteria data set;

(b) physical or chemical characteristics at a site such as pH or hardness alter the biological availability and/or toxicity of the chemical;

(c) physical, biological or chemical factors alter the bioaccumulation potential of a chemical;

(d) the concentration resulting from natural background exceeds numeric criteria for aquatic life, wildlife habitat or other uses if consistent with Subsection E of 20.6.4.10 NMAC; or

(e) other factors or combination of factors that upon review of the commission may warrant modification of the default criteria, subject to EPA review and approval.

(2) Site-specific criteria must fully protect the designated use to which they apply. In the case of human health-organism only criteria, site-specific criteria must fully protect human health when organisms are consumed from waters containing pollutants.

(3) Any person may petition the commission to adopt site-specific criteria. A petition for the adoption of site-specific criteria shall:

(a) identify the specific waters to which the site-specific criteria would apply;

(b) explain the rationale for proposing the site-specific criteria;

(c) describe the methods used to notify and solicit input from potential stakeholders and from the general public in the affected area, and present and respond to the public input received;

(d) present and justify the derivation of the proposed criteria.

(4) A derivation of site-specific criteria shall rely on a scientifically defensible method, such as one of the following:

(a) the recalculation procedure, the water-effect ratio for metals procedure or the resident species procedure as described in the water quality standards handbook (EPA-823-B-94-005a, 2nd edition, August 1994);

(b) the streamlined water-effect ratio procedure for discharges of copper (EPA-822-R-01-005, March 2001);

(c) the biotic ligand model as described in aquatic life ambient freshwater quality criteria - copper (EPA-822-R-07-001, February 2007);

(d) the methodology for deriving ambient water quality criteria for the protection of human health (EPA-822-B-00-004, October 2000) and associated technical support documents; or

(e) a determination of the natural background of the water body as described in Subsection E of 20.6.4.10 NMAC.

E. Site-specific criteria based on natural background. The commission may adopt site-specific criteria equal to the concentration resulting from natural background where that concentration protects the designated use. The concentration resulting from natural background supports the level of aquatic life and wildlife habitat expected to occur naturally at the site absent any interference by humans. Domestic water supply, primary or secondary

contact, or human health-organism only criteria shall not be modified based on natural background. A determination of natural background shall:

(1) consider natural spatial and seasonal to interannual variability as appropriate;

(2) document the presence of natural sources of the pollutant;

(3) document the absence of human sources of the pollutant or quantify the human contribution; and

(4) rely on analytical, statistical or modeling methodologies to quantify the natural background.

~~[20.6.4.10 NMAC - Rp 20 NMAC 6.1.1102, 10-12-00; Rn, 20.6.4.9 NMAC, 05-23-05; A, 05-23-05; A, 12-01-10]~~

F. Temporary Standards.

(1) Any person may petition the commission to adopt a temporary standard applicable to all or part of a surface water of the state as provided for in this section. The commission may adopt a proposed temporary standard if the petitioner demonstrates that:

(a) attainment of the associated designated use may not be feasible in the short term due to one or more of the factors listed in 40 CFR 131.10(g) as demonstrated by the petition and supporting work plan requirements in paragraphs (4), (5) and (6) below;

(b) the proposed temporary standard represents the highest degree of protection feasible in the short term, limits the further degradation of water quality to the minimum necessary to achieve the original standard by the expiration date of the temporary standard, and adoption will not cause the further impairment or loss of an existing use;

(c) for point sources, existing or proposed discharge control technologies will comply with applicable technology-based limitations and feasible technological controls and other management alternatives, such as a pollution prevention program; and

(d) for restoration activities, nonpoint source or other control technologies shall limit downstream impacts, and if applicable, existing or proposed discharge control technologies shall be in place consistent with subparagraph (c).

(2) A temporary standard shall apply to specific pollutant(s), and to specific water body segment(s). The adoption of a temporary standard does not exempt dischargers from complying with all other applicable water quality standards or control technologies.

(3) Designated uses shall not be modified on a temporary basis. Designated use attainment as reported in the CWA Section 305(b)/303(d) Integrated Report shall be based on the original standard and not on a temporary standard.

(4) A petition for a temporary standard shall:

(a) identify the currently applicable standard(s), the proposed temporary standard and the surface water(s) of the state to which the temporary standard would apply;

(b) demonstrate that the proposed temporary standard meets the requirements in this Subsection;

(c) present a work plan and timetable for achieving compliance with the original standard;

(d) include any other information necessary to support the petition.

(5) As a condition of a petition for a temporary standard, in addition to meeting the requirements in this Subsection, the petitioner shall prepare a supporting work plan in accordance with subparagraph (6) to conduct the analysis required in this Subsection, and submit the work plan to the department for review and comment. Upon revision of the work plan based

on input from the department, the petitioner shall conduct the analyses in accordance with the work plan. The department or the petitioner may petition the commission to adopt a temporary standard if the conclusions of the analysis support such action.

(6) The work plan to support a temporary standard petition shall identify the factor(s) listed in 40 CFR 131.10(g) affecting attainment of the standard that will be analyzed and the timeline for specific actions to be taken to achieve the uses attainable over the term of the temporary standard, including baseline water quality, and any investigations, projects, facility modifications, monitoring, or other measures necessary to achieve compliance with the original standard. The work plan shall include provisions for review of progress in accordance with subparagraph (9), public notice and consultation with appropriate state and federal agencies.

(7) The commission may condition the approval of a temporary standard by requiring additional monitoring, relevant analyses, the completion of specified projects, submittal of information, or any other actions.

(8) Temporary standards may be implemented only after appropriate public participation, commission approval and adoption pursuant to this Subsection for all state purposes, and EPA Clean Water Act Section 303 (c) approval for any federal action.

(9) All temporary standards are subject to a required review during each succeeding review of water quality standards conducted in accordance with Subsection A of 20.6.4.10 NMAC. The purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. If sufficient progress has not been made the commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

(10) The commission may consider a petition to extend a temporary standard. The effective period of a temporary standard shall be extended only if demonstrated to the department that the factors precluding attainment of the underlying standard still apply, that the petitioner is meeting the conditions required for approval of the temporary standard, and that reasonable progress towards meeting the underlying standard is being achieved.

(11) A temporary standard shall expire no later than the date specified in the approval of the temporary standard. Upon expiration of a temporary standard, the original standard becomes applicable.

(12) Temporary standards shall be identified in 20.6.4.97 – 899 NMAC as appropriate for the surface water affected.

[20.6.4.10 NMAC - Rp 20 NMAC 6.1.1102, 10-12-00; Rn, 20.6.4.9 NMAC, 05-23-05; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The federal water quality standards (WQS) regulations at 40 CFR 131 and the federal permitting regulations at 40 CFR 122 provide a number of tools for states and tribes to adopt that allow for regulatory flexibilities when implementing WQS programs. States can adopt procedures or rules for allowing development of site-specific criteria, revision of designated uses, provisions for dilution allowances or mixing zones, permit compliance schedules, enactment of variances, and temporary or interim water quality standards. New Mexico has already adopted several of these federally approved tools to assist point and non-point sources meet designated uses and applicable water quality criteria.

The EPA defines an interim or temporary water quality standard as a "time limited designated use [or] criteria" (EPA Publication No. EPA-820-F-13-012, March 2013). The temporary

standard may be appropriate where "groups of permitees are experiencing the same challenges in meeting their water quality based effluent limits…for the same pollutant, regardless of whether or not the permitees are located on the same waterbody." *Id.* The state may adopt or implement a temporary water quality standard where an applicant, through a public hearing process, reasonably demonstrates that the unmodified applicable standard is not attainable based on those factors in 40 CFR 131.10(g). The central principal of this tool, as compared to site-specific studies or change of designated use(s), is that the underlying designated use and criteria are not changed, modified or replaced. Where implemented, the interim or temporary water quality standard(s) requires regulated facilities to implement adaptive and increasingly restrictive controls or technology which may not be then available or practical, but is necessary to improve the overall water quality.

While EPA's guidance document refers to temporary or interim water quality standard as a type of 'variance,' the New Mexico Water Quality Act, NMSA 1978, 74-6-1, to -17., and ensuing regulations already describe "variance" as an individual discharge permit-specific exclusion from regulation. *See generally* NMSA 1978, § 74-6-4 (h). The Bureau finds that the term 'temporary standard' is more appropriate within the scope of the water quality standards and avoids confusion with other state variance rules and regulations. As proposed here, and as required by 40 CFR Part 131, an applicant proposing the interim or temporary water quality standard must satisfy the WQCC's public notice, hearing, and appellate procedures before adoption. The EPA must also authorize the State's adoption of the temporary standard. In sum, these amendments will provide well documented and authorized flexibility to regulated entities in meeting the state's water quality standards.

The language in Subsection F, 20.6.4.10 NMAC is also proposed in consideration of comments received during the public review of the Bureau's Public Discussion Draft. For example, several commenters noted, and EPA clarified, that while the justification for a temporary standard is must be based on one of the 40 CFR 131.10(g) factors, it is not necessary to conduct a UAA because the underlying uses and criteria will not be changed. EPA also recommended the term 'temporary standard' as opposed to 'temporary criteria' to allow the state broader flexibility in applying the provision (i.e., applicable to uses and/or criteria). Also, as mentioned previously, the term 'temporary standard' keeps the requirements and process of the provision within the context of the water quality standards.

20.6.4.12 COMPLIANCE WITH WATER QUALITY STANDARDS: The following provisions apply to determining compliance for enforcement purposes; they do not apply for purposes of determining attainment of uses. The department has developed assessment protocols for the purpose of determining attainment of uses that are available for review from the department's surface water quality bureau.

A. Compliance with acute water quality criteria shall be determined from the analytical results of a single grab sample. Acute criteria shall not be exceeded.

20.6.4.12.B through 20.6.4.12.F NMAC no changes

G. Compliance Schedules: It shall be the policy of the commission to allow on a case-by-case basis the inclusion of a schedule of compliance in a NPDES permit issued to an

existing facility. Such schedule of compliance will be for the purpose of providing a permittee with adequate time to make treatment facility modifications necessary to comply with water quality based permit limitations determined to be necessary to implement new or revised water quality standards or wasteload allocation. Compliance schedules may be included in NPDES permits at the time of permit renewal or modification and shall be written to require compliance at the earliest practicable time. Compliance schedules shall also specify milestone dates so as to measure progress towards final project completion (e.g., design completion, construction start, construction completion, date of compliance).

H. It shall be a policy of the commission to allow a temporary standard approved and adopted pursuant to Subsection F of 20.6.4.10 NMAC to be included in the applicable NPDES permit as enforceable limits and conditions. The temporary standard and schedule of actions may be included at the earliest practicable time, and shall specify milestone dates so as to measure progress towards meeting the original standard.
[20.6.4.12 NMAC - Rp 20 NMAC 6.1.1104, 10-12-00; A, 10-11-02; Rn, 20.6.4.11 NMAC, 05-23-05; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: Subsection H is added to 20.6.4.12 NMAC to allow use of an approved temporary standard by EPA in drafting or modifying NPDES permits; and in that case, to include the temporary standard and associated requirements as enforceable limits and conditions in the permit.

20.6.4.11 – 20.6.4.15 – No changes proposed.

20.6.4.16 PLANNED USE OF A PISCICIDE: The use of a piscicide registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. Section 136 *et seq.*, and under the New Mexico Pesticide Control Act (NMPCA), Section 76-4-1 *et seq.* NMSA 1978 (1973) in a surface water of the state, shall not be a violation of Subsection F of 20.6.4.13 NMAC when such use is covered by a federal National Pollutant Discharge Elimination System (NPDES) permit has been approved by the commission under procedures provided in this section. The use of a piscicide which is covered by a NPDES permit shall require no further review by the commission and the person whose application is covered by the NPDES shall meet the additional notification and monitoring requirements outlined in Subsection F of 20.6.4.16 NMAC. The commission may approve the reasonable use of a piscicide under this section if the proposed use is not covered by a NPDES permit to further a Clean Water Act objective to restore and maintain the physical or biological integrity of surface waters of the state, including restoration of native species.

A. Any person seeking commission approval of the use of a piscicide not covered by a NPDES permit shall file a written petition concurrently with the commission and the surface water bureau of the department. The petition shall contain, at a minimum, the following information:

(1) petitioner's name and address;

(2) identity of the piscicide and the period of time (not to exceed five years) or number of applications for which approval is requested;

(3) documentation of registration under FIFRA and NMPCA and certification that the petitioner intends to use the piscicide according to the label directions, for its intended function;

(4) target and potential non-target species in the treated waters and adjacent riparian area, including threatened or endangered species;

(5) potential environmental consequences to the treated waters and the adjacent riparian area, and protocols for limiting such impacts;

(6) surface water of the state proposed for treatment;

(7) results of pre-treatment survey;

(8) evaluation of available alternatives and justification for selecting piscicide use;

(9) post-treatment assessment monitoring protocol; and

(10) any other information required by the commission.

B. Within thirty days of receipt of the petition, the department shall review the petition and file a recommendation with the commission to grant, grant with conditions or deny the petition. The recommendation shall include reasons, and a copy shall be sent to the petitioner by certified mail.

C. The commission shall review the petition and the department's recommendation and ~~shall~~ within 90 days of receipt of the department's recommendation may hold a public hearing in the locality affected by the proposed use in accordance with Adjudicatory Procedures, 20.1.3 NMAC. In addition to the public notice requirements in Adjudicatory Procedures, 20.1.3 NMAC, the petitioner shall provide written notice to:

(1) local political subdivisions;

(2) local water planning entities;

(3) local conservancy and irrigation districts; and

(4) local media outlets, except that the petitioner shall only be required to publish notice in a newspaper of circulation in the locality affected by the proposed use.

D. In a hearing provided for in this Section or, if no hearing is held, in a commission meeting, the registration of a piscicide under FIFRA and NMPCA shall provide a rebuttable presumption that the determinations of the EPA Administrator in registering the piscicide, as outlined in 7 U.S.C. Section 136a(c)(5), are valid. For purposes of this Section the rebuttable presumptions regarding the piscicide include:

(1) Its composition is such as to warrant the proposed claims for it;

(2) Its labeling and other material submitted for registration comply with the requirements of FIFRA and NMPCA;

(3) It will perform its intended function without unreasonable adverse effects on the environment; and

(4) When used in accordance with all FIFRA label requirements it will not generally cause unreasonable adverse effects on the environment.

(5) "Unreasonable adverse effects on the environment" has the meaning provided in FIFRA, 7 U.S.C. Section 136(bb): "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide."

E. After a public hearing or commission meeting, if no hearing is held, the commission may grant the petition in whole or in part, may grant the petition subject to conditions, or may deny the petition. In granting any petition in whole or part or subject to conditions, the commission shall require the petitioner to implement post-treatment assessment monitoring and provide notice to the public in the immediate and near downstream vicinity of the application prior to and during the application.

F. Any person whose application is covered by a NPDES permit shall provide written notice to local entities as described in 20.6.4.16 subsections C (1) to (4) and subsection (E) and implement post-treatment assessment monitoring within the application area.
[20.6.4.16 NMAC - Rn, Paragraph (6) of Subsection F of 20.6.4.12 NMAC, 05-23-05; A, 05-23-05; A, XX-XX-XX]

BASIS FOR CHANGE: Language in the water quality standards for piscicide application was first developed during the 1998-99 Triennial Revisions to address species management and restoration by the New Mexico Department of Game and Fish (NMDGF), and was approved by the Water Quality Control Commission (WQCC) on December 30, 1999. During the 2003-05 Triennial Revisions, the language was revised to streamline processes, and moved to a new section (20.6.4.16 NMAC). These changes were adopted by the WQCC and submitted with the other Triennial Revisions for EPA's approval under CWA 303 (c). At the time, EPA was not compelled to determine whether the application of piscicides was subject to EPA's National Pollutant Discharge Elimination System (NPDES) permit regulations. While EPA was supportive of 20.6.4.16 NMAC for restoration purposes, it was considered a State rule that was not subject to EPA's CWA 303(c) approval.

In January 2009, a federal court ruling determined certain pesticide applications, including those for piscicides, were subject to the EPA NPDES permit regulations; the federal rule was finalized on October 31, 2011. Consequently, in addition to requirements under the State's rules certain applicators (i.e., NMDGF) are required to also have a NPDES permit and may apply for coverage under the EPA's NPDES permit program Pesticide General Permit (PGP). In order to avoid duplication in fulfilling both state and federal requirements, the Bureau is proposing to update the piscicide provision by including an exemption for those covered under the EPA's NPDES permit program.

The NPDES permit program includes both individual permits and general permits, such as the PGP. If an applicator has coverage under an EPA NPDES permit or PGP, no further review by the Bureau or the Commission is required. The applicator however must still meet the additional notification and monitoring requirements outlined in Subsection F. If an applicator is not covered under an EPA NPDES permit, the requirements in Subsection A. (1) – (10) and Subsection B (Bureau review and recommendation within 30 days) must still be met. Also, if an applicator is not covered under an EPA permit, Subsection C is revised to allow the Commission discretion on whether to conduct/hold a public hearing for piscicide application in the affected locality. However, the petitioner is still held to the written notice requirements in Subsection C. (1) – (4). Subsections D and E are revised to be consistent with the Commission's discretion to hold either a meeting or public hearing as specified in Subsection C, but otherwise the requirements in Subsections D and E are not proposed for revision. Subsection F is proposed to ensure that the notification and post monitoring processes required under the state provisions but not required in the federal NPDES PGP permit are adhered to. See also the memo in Attachment 2.

20.6.4.17 - 20.6.4.49: [RESERVED]

20.6.4.50 BASINWIDE PROVISIONS - Special provisions arising from interstate compacts, international treaties or court decrees or that otherwise apply to a basin are contained in 20.6.4.51 through 20.6.4.59 NMAC.
[20.6.4.50 NMAC - N, 05-23-05]

20.6.4.51: [RESERVED]

20.6.4.52 PECOS RIVER BASIN - In order to protect existing and designated uses, it is a goal of the state of New Mexico to prevent increases in TDS in the Pecos river above the following benchmark values, which are expressed as flow-weighted, annual average concentrations, at three USGS gaging stations: at Santa Rosa 500 mg/L; near Artesia 2,700 mg/L; and near Malaga 3,600 mg/L. The benchmark values serve to guide state action. They are adopted pursuant to the New Mexico Water Quality Act, not the Clean Water Act.
[20.6.4.52 NMAC - N, 12-01-10]

20.6.4.53: [RESERVED]

20.6.4.54 COLORADO RIVER BASIN - For the tributaries of the Colorado river system, the state of New Mexico will cooperate with the Colorado river basin states and the federal government to support and implement the salinity policy and program outlined in the most current "review, water quality standards for salinity, Colorado river system" or equivalent report by the Colorado river salinity control forum.

A. Numeric criteria expressed as the flow-weighted annual average concentration for salinity are established at three points in the Colorado river basin as follows: below Hoover dam, 723 mg/L; below Parker dam, 747 mg/L; and at Imperial dam, 879 mg/L.

B. As a part of the program, objectives for New Mexico shall include the elimination of discharges of water containing solids in solution as a result of the use of water to control or convey fly ash from coal-fired electric generators, wherever practicable.
[20.6.4.54 NMAC - Rn, Paragraphs (1) through (3) of Subsection K of 20.6.4.12 NMAC, 05-23-05; A, 05-23-05]

20.6.4.55 - 20.6.4.96: [RESERVED]

20.6.4.97 EPHEMERAL WATERS - Ephemeral ~~unclassified~~ surface waters of the state as identified below and additional ephemeral waters as identified on the department's water quality standards website pursuant to Subsection C of 20.6.4.15 NMAC.

A. Designated Uses: livestock watering, wildlife habitat, limited aquatic life and secondary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses.

C. Waters:

(1) the following waters are designated in the **Rio Grande basin**:

(a) Cunningham gulch from Santa Fe county road 55 upstream 1.4 miles to a point upstream of the LAC Minerals mine, identified as Ortiz Mine on USGS topographic maps;

(b) an unnamed tributary from Arroyo Hondo upstream 0.4 miles to the Village of Oshara water reclamation facility outfall;

(c) an unnamed tributary from San Pedro creek upstream 0.8 miles to the PAA-KO community sewer outfall;

(d) Inditos draw from the crossing of an unnamed road along a power line one-quarter mile west of McKinley county road 19 upstream to New Mexico highway 509;

(e) an unnamed tributary from the diversion channel connecting Blue canyon and Socorro canyon upstream 0.6 miles to the New Mexico Firefighters Academy treatment facility outfall;

(f) an unnamed tributary from the AMAFCA Rio Grande south channel upstream of the crossing of New Mexico highway 47 upstream to I-25;

(g) the south fork of Cañon del Piojo from Canon del Piojo upstream 1.2 miles to an unnamed tributary;

(h) an unnamed tributary from the south fork of Cañon del Piojo upstream 1 mile to the Resurrection mine outfall;

(i) Arroyo del Puerto from San Mateo creek upstream 6.8 miles to the Ambrosia Lake mine entrance road;

(j) an unnamed tributary from San Mateo creek upstream 1.5 miles to the Roca Honda mine facility outfall in NPDES permit number;

(k) San Isidro arroyo from the Lee Ranch mine facility outfall upstream to Tinaja arroyo;

(l) Tinaja arroyo from San Isidro arroyo upstream to Mulatto canyon; and

(m) Mulatto canyon from Tinaja arroyo upstream to 1 mile northeast of the Cibola national forest boundary.

(2) the following waters are designated in the **Pecos river basin**:

(a) an unnamed tributary from Hart canyon upstream 1 mile to South Union road;

(b) Aqua Chiquita from Rio Peñasco to upstream of McEwan canyon; and

(c) Grindstone canyon upstream of Grindstone Reservoir.

(3) the following waters are designated in the **Canadian river basin**:

(a) Bracket canyon upstream of the Vermejo river;

(b) an unnamed tributary from Bracket canyon upstream 2 miles to the Ancho mine; and

(c) Gachupin canyon from the Vermejo river upstream 2.9 miles to an unnamed west tributary near the Ancho mine outfall.

(4) in the **San Juan river basin** an unnamed tributary of Kim-me-ni-oli wash upstream of the mine outfall.

(5) the following waters are designated in the **Little Colorado river basin**:

(a) Defiance draw from County Road 1 to upstream of West Defiance Road; and

(b) an unnamed tributary of Defiance draw from McKinley County Road 1 upstream to New Mexico Highway 264.

(6) the following waters are designated in the **closed basins**:

(a) in the Tularosa river closed basin San Andres canyon downstream of South San Andres canyon; and

(b) in the Mimbres river closed basin:

(i) San Vicente arroyo from the Mimbres river upstream to Maude's canyon;

(ii) Chino mines property Subwatershed Drainage A and tributaries thereof;

(iii) Chino Mines property Subwatershed Drainage B and tributaries thereof (excluding the northwest tributary containing Ash Spring);

(iv) Chino Mines property Subwatershed Drainage C and tributaries thereof (excluding reaches containing Bolton spring, the Chiracahua Leopard Frog critical habitat transect, and all reaches in Subwatershed C that are upstream of the Chiracahua Leopard Frog critical habitat);

(v) Subwatershed Drainage D and tributaries thereof (Drainages D-1, D-2 and D-3, excluding the southeast tributary in drainage D1 that contains Brown Spring); and,

(vi) Subwatershed Drainage E and tributaries thereof (Drainages E-1, E-2 and E-3).

[20.6.4.97 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]
~~[NOTE: Effective 12-01-10, no waters are yet approved for listing in Subsection C of this section.]~~

BASIS FOR CHANGE: Amendments to the state's water quality standards during the 2005 and 2009 triennial revisions, and subsequent approvals by the WQCC and EPA allow the use of the Bureau's Hydrology Protocol (HP) to support the revisions of standards for ephemeral waters. In accordance with Subsection C of 20.6.4.15 NMAC, this protocol can be used to provide technical support for a Use Attainability Analysis (UAA) to determine the hydrology of waters or to characterize waters, within an otherwise classified segment. The process for implementing the HP was approved as an appendix to the Department's Water Quality Management Plan/Continuing Planning Process document (WQMP/CPP) by the WQCC on May 10, 2011, and by EPA on December 23, 2011.

The Bureau is petitioning the Commission to list waters previously granted technical approval by EPA as ephemeral under Subsection C of 20.6.4.97 NMAC. The Bureau has also submitted additional HP UAAs to EPA for technical approval, as indicated below. Once approved by the WQCC and adopted as standards, the Bureau will submit the revised water quality standards (as published in the New Mexico Register) to EPA for formal review and final approval action under Section 303(c) of the CWA.

The Bureau is also proposing removal of the term "unclassified" for those waters which have been characterized as ephemeral under the HP, and adds the term "surface" to be consistent with the term "surface water(s) of the state" defined in Subsection S of 20.6.4.7 NMAC.

For ephemeral waters proposed under Subsection C, 20.6.4.97 NMAC: C (1); C (2) (a); (C) (3); (C) (4), and (C) (5). The Bureau has completed the application of the HP to document the hydrologic condition of unclassified, non-perennial stream segments associated with 13 NPDES permitted facilities located throughout New Mexico. The results supported a UAA finding that the streams are ephemeral, that primary contact and warmwater aquatic life uses are not attainable due to natural conditions, and that the appropriate water quality standards designation for these streams is under Section 20.6.4.97 NMAC. In accordance with the regulations in Subsection C, 20.6.4.15 NMAC and the WQMP/CPP procedures, the UAAs were posted on the

Bureau's water quality standards website for a 30-day public comment period ending on August 27, 2012. The UAAs and responses to comments were submitted to EPA on October 11, 2012 for formal technical approval. EPA has provided technical approval of these UAAs on December 30, 2013, concluding that the uses and criteria apply as described in Section 20.6.4.97 NMAC for all regulatory purposes under the CWA. The applicability of Section 20.6.4.97 NMAC to these waters was posted on the Bureau's water quality standards website following EPA's technical approval. The waters are proposed to be listed in Subsection C, 20.6.4.97 NMAC. Once approved and adopted by the WQCC, the revisions will be submitted to EPA for final 303(c) approval.

For ephemeral waters proposed under Subsection C, 20.6.4.97 NMAC: C (2) (b) and (c); and C (6) (a) and (b)(i). The Bureau has completed the application of the HP to document the hydrologic condition of four unclassified, non-perennial stream segments in the Pecos River basin, Tularosa River closed basin and the Mimbres River closed basin and finds that the designated uses applicable to 20.6.4.97 NMAC are appropriate and attainable. As required by Subsection C, 20.6.4.15 NMAC, these UAAs were posted on the Bureaus' website on August 14, 2013. Comment was invited during the 30-day public review which ended on September 13, 2013. There was one comment in support of the UAA; the report and supporting documents were sent to EPA for technical approval on October 17, 2013. EPA's technical approval was provided on December 19, 2013.

For ephemeral waters proposed under Subsection C, 20.6.4.97 NMAC: C (6) (b)(ii)-(vi); Chino Mines property Subwatershed Drainages A, B, C, D and E (as described). The Bureau's HP UAA process was conducted by Freeport MacMoRan (Chino Mines) to determine the appropriate water quality standards for five non-perennial drainages located in the Mimbres watershed. As required by Subsection C, 20.6.4.15 NMAC, these UAAs were posted on the Bureau's website on January 15, 2013. Comment was invited during the 30-day public review which ended on February 14, 2013. In response to public and Bureau comments, further reconnaissance was conducted by the Department and as a result, the UAAs revised from the public noticed draft. The revised UAA report and supporting documents (public comments received, and the Bureau's response to comments) were sent to EPA for technical approval on June 28, 2013; EPA's technical approval is pending.

20.6.4.98 INTERMITTENT WATERS - All non-perennial ~~unclassified~~ surface waters of the state, except those ephemeral waters included under 20.6.4.97 NMAC or classified in 20.6.4.100 thru 899.

A. Designated Uses: livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following site-specific criteria apply: the monthly geometric mean of E. coli bacteria 206 cfu/100 mL or less, single sample 940 cfu/100 mL or less. [20.6.4.98 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

20.6.4.99 PERENNIAL WATERS - All perennial ~~unclassified~~ surface waters of the state except those classified in 20.6.4.100 thru 899.

A. Designated Uses: warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following site-specific criteria apply: the monthly geometric mean of E. coli bacteria 206 cfu/100 mL or less, single sample 940 cfu/100 mL or less.
[20.6.4.99 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

BASIS FOR CHANGE: The Bureau is proposing removal of the term "unclassified" in Sections 20.6.4.98 and 20.6.4.99 NMAC. The term "surface" is added to be consistent with the term "surface water(s) of the state" which is defined in Subsection S of 20.6.4.7 NMAC. In previous Triennial and interim revisions, the Bureau has clarified the presumption of CWA Section 101(a)(2) uses for all surface water of the state, including those not "classified" or described in segments under Sections 20.6.4.101-.899 NMAC.

20.6.4.100: [RESERVED]

20.6.4.101 RIO GRANDE BASIN - The main stem of the Rio Grande from the international boundary with Mexico upstream to one mile ~~below~~ downstream of Percha dam.

A. Designated Uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses except that the following segment-specific criterion applies: temperature 34°C (93.2°F) or less.

(2) At mean monthly flows above 350 cfs, the monthly average concentration for: TDS 2,000 mg/L or less, sulfate 500 mg/L or less and chloride 400 mg/L or less.

C. Remarks: sustained flow in the Rio Grande below Caballo reservoir is dependent on release from Caballo reservoir during the irrigation season; at other times of the year, there may be little or no flow.
[20.6.4.101 NMAC - Rp 20 NMAC 6.1.2101, 10-12-00; A, 12-15-01; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

BASIS FOR CHANGE: The word 'below' is replaced with the hydrologic term 'downstream of' in the segment description.

20.6.4.102 RIO GRANDE BASIN - The main stem of the Rio Grande from one mile ~~below~~ downstream of Percha dam upstream to Caballo dam.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

C. Remarks: sustained flow in the Rio Grande below Caballo reservoir is dependent on release from Caballo reservoir during the irrigation season; at other times of the year, there may be little or no flow.
[20.6.4.102 NMAC - Rp 20 NMAC 6.1.2102, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

BASIS FOR CHANGE: The word 'below' is replaced with the hydrologic term 'downstream of' in the segment description.

20.6.4.103 RIO GRANDE BASIN - The main stem of the Rio Grande from the headwaters of Caballo reservoir upstream to Elephant Butte dam and perennial reaches of tributaries to the Rio Grande in Sierra and Socorro counties, excluding waters on tribal lands.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, ~~secondary~~ primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

C. Remarks: flow in this reach of the Rio Grande main stem is dependent upon release from Elephant Butte dam.
[20.6.4.103 NMAC - Rp 20 NMAC 6.1.2103, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

BASIS FOR CHANGE: The State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. While swimming in this area is "at your own risk", this portion of the Rio Grande is accessible for swimming and bodily contact can occur with a risk of ingesting water. The Bureau has no evidence that this use is not attainable and primary contact use may be existing and is likely attainable. Also, to be consistent with the latest EPA recommendations for recreational contact and CWA Section 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.104 – 20.6.4.109 – No changes proposed.

20.6.4.110 RIO GRANDE BASIN - The main stem of the Rio Grande from Angostura diversion works upstream to Cochiti dam, excluding the reaches on San Felipe, ~~Santo Domingo~~Kewa and Cochiti pueblos.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, primary contact, coldwater aquatic life and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: pH within the range of 6.6 to 9.0 and temperature 25°C (77°F) or less.

[20.6.4.110 NMAC - Rp 20 NMAC 6.1.2108, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

BASIS FOR CHANGE: In 2009, the Pueblo formerly known as Santa Domingo officially changed its name to Kewa Pueblo; therefore, this change is proposed to be incorporated into the segment description.

20.6.4.111 – 20.6.4.115 – No changes proposed.

20.6.4.116 RIO GRANDE BASIN - The Rio Chama from its mouth on the Rio Grande upstream to Abiquiu reservoir, perennial reaches of the Rio Tusas, perennial reaches of the Rio Ojo Caliente, perennial reaches of Abiquiu creek and perennial reaches of El Rito creek ~~below~~ downstream of the town of El Rito.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, coldwater aquatic life, warmwater aquatic life and ~~secondary~~ primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 31°C (87.8°F) or less.

[20.6.4.116 NMAC - Rp 20 NMAC 6.1.2113, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]]

BASIS FOR CHANGE: The word 'below' is replaced with the hydrologic term 'downstream of' in the segment description. Also, the State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. This segment includes Rio Ojo Caliente; the Ohkay Owingeh surface water quality standards downstream are assigned the primary contact recreation use, and the Rio Grande at the confluence is also designated as primary contact recreation. The Bureau has no evidence that this use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA Section 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.117 – 20.6.4.123 – No changes proposed.

20.6.4.124 RIO GRANDE BASIN - Perennial reaches of Sulphur creek from ~~its headwaters to~~ its confluence with Redondo creek upstream to its headwaters.

A. Designated Uses: limited aquatic life, wildlife habitat, livestock watering and ~~secondary~~ primary contact.

B. Criteria: the use-specific criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: pH within the range of 2.0 to 9.0, maximum temperature 30°C (86°F), and the chronic aquatic life criteria of Subsections I and J of 20.6.4.900 NMAC.

[20.6.4.124 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The wording in the segment description is changed to more accurately describe the reach in hydrologic terms from the downstream confluence upstream to its headwaters. Also, the State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. The Bureau has no evidence that this use is not attainable and information from surveys indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA Section 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.125 – 20.6.4.203 – No changes proposed.

20.6.4.204 PECOS RIVER BASIN - The main stem of the Pecos river from the headwaters of Avalon reservoir upstream to Brantley dam.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, ~~secondary~~ primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.204 NMAC - Rp 20 NMAC 6.1.2204, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

[**NOTE:** The segment covered by this section was divided effective 05-23-05. The standards for Avalon Reservoir are under 20.6.4.219 NMAC.]

BASIS FOR CHANGE: The State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. The Bureau has no evidence that this use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA Section 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.205 PECOS RIVER BASIN - Brantley reservoir.

A. Designated Uses: irrigation storage, livestock watering, wildlife habitat, primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.205 NMAC - Rp 20 NMAC 6.1.2205, 10-12-00; A, 05-23-05; A, 12-01-10]

20.6.4.206 PECOS RIVER BASIN - The main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, perennial reaches of the Rio Hondo and its tributaries ~~below~~ downstream of Bonney canyon and perennial reaches of the Rio Felix.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, ~~secondary~~ primary contact and warmwater aquatic life.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

(2) At all flows above 50 cfs: TDS 14,000 mg/L or less, sulfate 3,000 mg/L or less and chloride 6,000 mg/L or less.

[20.6.4.206 NMAC - Rp 20 NMAC 6.1.2206, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The word 'below' is replaced with the hydrologic term 'downstream of' in the segment description. Also, the State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. The Department has no evidence that this use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.207 PECOS RIVER BASIN - The main stem of the Pecos river from Salt creek (near Acme) upstream to Sumner dam.

A. Designated Uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and ~~secondary~~ primary contact.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

(2) At all flows above 50 cfs: TDS 8,000 mg/L or less, sulfate 2,500 mg/L or less and chloride 4,000 mg/L or less.

[20.6.4.207 NMAC - Rp 20 NMAC 6.1.2207, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. Surveys have been conducted by the Department during 2005 and 2013. During the 2013 survey, it was observed this segment likely has an existing use of primary contact. While access is difficult in very remote locations, it can

be accomplished. The Department has no evidence that this use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.208 – 20.6.4.212 – No changes proposed.

20.6.4.213 PECOS RIVER BASIN - McAllister lake.

A. Designated Uses: coldwater aquatic life, ~~secondary~~ primary contact, livestock watering and wildlife habitat.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 25°C (77°F) or less.

[20.6.4.213 NMAC - Rp 20 NMAC 6.1.2211.3, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. The lake is a state park and national wildlife refuge. The area is open for boating, fishing and camping activities in the spring, summer and fall. The Department has no evidence that the primary contact use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.214 – 20.6.4.218 – No changes proposed.

20.6.4.219 PECOS RIVER BASIN - Avalon reservoir.

A. Designated Uses: irrigation storage, livestock watering, wildlife habitat, ~~secondary~~ primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.219 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. In this case, kayaking and scuba for game fishing are activities allowed and described on the reservoir park website. The Department

has no evidence that this use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.220 – 20.6.4.304 – No changes proposed.

20.6.4.305 CANADIAN RIVER BASIN - The main stem of the Canadian river from the headwaters of Conchas reservoir upstream to the New Mexico-Colorado line, perennial reaches of the Conchas river, the Mora river downstream from the USGS gaging station near Shoemaker, the Vermejo river downstream from Rail canyon and perennial reaches of Raton, Chicorica (except Lake Maloya and Lake Alice) and Uña de Gato creeks.

A. Designated Uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

(2) TDS 3,500 mg/L or less at flows above 10 cfs.

[20.6.4.305 NMAC - Rp 20 NMAC 6.1.2305, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

[**NOTE:** This segment was divided effective 12-01-10. The standards for ~~Lake Maloya and~~ Lake Alice and Lake Maloya are under 20.6.4.311 and 20.6.4.312 NMAC, respectively.]

BASIS FOR CHANGE: Grammatical correction/edit.

20.6.4.306 – 20.6.4.307 – No changes proposed.

20.6.4.308 CANADIAN RIVER BASIN - Charette lakes.

A. Designated Uses: coldwater aquatic life, warmwater aquatic life, ~~secondary~~ primary contact, livestock watering and wildlife habitat.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.308 NMAC - Rp 20 NMAC 6.1.2305.5, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The State shall from time to time, but at least once every three years, review applicable water quality standards and, as appropriate, modify and adopt standards. Any water body segment with water quality standards that do not include the uses specified in 40 CFR § 131.20 shall be re-examined to determine if any new information has become available. If such new information indicates that the uses specified in the CWA Section 101(a)(2) are attainable, the State shall revise its standards accordingly. Charette Lake is a state park with access for fishing, swimming or other primary contact activities. The Department has no evidence that this use is not attainable and information indicates that primary contact use may be existing and is likely attainable. To be consistent with the latest EPA recommendations for

recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact is upgraded to the primary contact use with corresponding criteria.

20.6.4.309 – 20.6.4.316 – No changes proposed.

20.6.4.317 CANADIAN RIVER BASIN - Springer lake.

A. Designated Uses: coolwater aquatic life, irrigation, primary contact, livestock watering, ~~and~~ wildlife habitat, and public water supply.

B. Criteria: The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.317 NMAC - N, 07-10-12; A, XX-XX-XX]

BASIS FOR CHANGE: Springer Lake is a public water supply for Colfax County (Water System Number NM3526604); this designated use is an existing use that is proposed be added to the water body segment description.

20.6.4.318 - 20.6.4.400: [RESERVED]

20.6.4.401 SAN JUAN RIVER BASIN - The main stem of the San Juan river from the Navajo Nation boundary at the Hogback upstream to its confluence with the Animas river. Some waters in this segment are under the joint jurisdiction of the state and the Navajo Nation.

A. Designated Uses: public water supply, industrial water supply, irrigation, livestock watering, wildlife habitat, primary contact, marginal coldwater aquatic life and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 32.2°C (90°F) or less.

[20.6.4.401 NMAC - Rp 20 NMAC 6.1.2401, 10-12-00; A, 05-23-05; A, 12-01-10]

[**NOTE:** The segment covered by this section was divided effective 05-23-05. The standards for the additional segment are under 20.6.4.408 NMAC.]

20.6.4.402 SAN JUAN RIVER BASIN - La Plata river from its confluence with the San Juan river upstream to the New Mexico-Colorado line.

A. Designated Uses: irrigation, marginal warmwater aquatic life, marginal coldwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 32.2°C (90°F) or less.

[20.6.4.402 NMAC - Rp 20 NMAC 6.1.2402, 10-12-00; A, 05-23-05; A, 12-01-10]

20.6.4.403 SAN JUAN RIVER BASIN - The Animas river from its confluence with the San Juan river upstream to Estes Arroyo.

A. Designated Uses: public water supply, industrial water supply, irrigation, livestock watering, wildlife habitat, ~~marginal coldwater~~ coolwater aquatic life, and primary contact ~~and warmwater aquatic life~~.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses~~.~~, except that the following segment-specific criterion applies: temperature 27°C (80.6°F) or less.
[20.6.4.403 NMAC - Rp 20 NMAC 6.1.2403, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The word 'river' is added in the segment description. Changes shown to the aquatic life uses and temperature criteria to the lower Animas River are supported by a draft UAA *Aquatic Life Uses for the Animas River in New Mexico* posted on the Bureau's website for public comment on November 20, 2013; a public meeting was held on December 17, 2013. After consideration of public comments, the revised UAA and responses to comments will be submitted to EPA for technical approval. Once technically approved by EPA, the UAA and recommended changes will be submitted to the WQCC for approval and adoption into the water quality standards. The Bureau will submit the UAA, standards revisions and relative supporting documentation to EPA for final approval under Clean Water Act Section 303(c). Depending on the timing, these actions may be concurrent with the Triennial review process.

20.6.4.404 SAN JUAN RIVER BASIN - The Animas river from Estes Arroyo upstream to the ~~New Mexico-Colorado line~~ Southern Ute Indian tribal boundary.

A. Designated Uses: ~~coldwater~~coolwater aquatic life, irrigation, livestock watering, wildlife habitat, public water supply, industrial water supply and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: phosphorus (unfiltered sample) 0.1 mg/L or less.
[20.6.4.404 NMAC - Rp 20 NMAC 6.1.2404, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The segment description is corrected to reflect the jurisdictional boundary with the Southern Ute Indian Tribe. The aquatic life use change to the upper Animas River is supported by a draft UAA *Aquatic Life Uses for the Animas River in New Mexico* which was posted on the Bureau's website for public comment on November 20, 2013; a public meeting was held on December 17, 2013. After consideration of public comments, the revised UAA and responses to comments will be submitted to EPA for technical approval. Once technically approved by EPA, the UAA and recommended changes will be submitted to the Commission (WQCC) for approval and adoption into the water quality standards. The Bureau will submit the UAA, standards revisions and relative supporting documentation to EPA for final approval under Clean Water Act Section 303(c). Depending on the timing, these actions may be concurrent with the Triennial review process.

20.6.4.405 – 20.6.4.502 – No changes proposed.

20.6.4.502 GILA RIVER BASIN - The main stem of the Gila river from Redrock canyon upstream to the confluence of the West Fork Gila river and East Fork Gila river and perennial reaches of tributaries to the Gila river ~~below~~ downstream of Mogollon creek.

A. Designated Uses: industrial water supply, irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: 28°C (82.4°F) or less.
[20.6.4.502 NMAC - Rp 20 NMAC 6.1.2502, 10-12-00; A, 05-23-05; A, 12-01-10]

BASIS FOR CHANGE: The word 'below' is replaced with the hydrologic term 'downstream of' in the segment description.

20.6.4.503 GILA RIVER BASIN - All perennial tributaries to the Gila river ~~above~~ upstream of, and including, Mogollon creek.

A. Designated Uses: domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance of 400 µS/cm or less for all perennial tributaries except West Fork Gila and perennial tributaries thereto, specific conductance of 300 µS/cm or less.; 32.2°C (90°F) or less in the east fork of the Gila river and Sapillo creek ~~below~~ downstream of Lake Roberts; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.
[20.6.4.503 NMAC - Rp 20 NMAC 6.1.2503, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The words 'above' and 'below' are replaced with the hydrological terms 'upstream of' and 'downstream of', respectively. A correction is also necessary to the description for the portion of the Gila River system with segment specific criteria assigned in Subsection B of 20.6.4.503 NMAC. The section of the Gila River referred to as the "main stem of the Gila River above the Gila Hot Springs" is actually the West Branch (or West Fork) Gila River. The main stem of the Gila River begins from the confluence of the West and East Forks of the Gila River, and extends downstream from the confluence. An analysis of specific conductivity in the reaches was also conducted and supports this correction. See also the memo in Attachment 3.

20.6.4.504 – 20.6.4.802 – No changes proposed.

20.6.4.803 CLOSED BASINS - Perennial reaches of the Mimbres river downstream of the confluence with ~~Willow Springs~~ Allie canyon and all perennial reaches of tributaries thereto.

A. Designated Uses: ~~coldwater~~ coolwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less~~.~~ and 30°C (86°F) or less.
[20.6.4.803 NMAC - Rp 20 NMAC 6.1.2803, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

20.6.4.804 CLOSED BASINS - Perennial reaches of the Mimbres river upstream of the confluence with ~~Willow Springs~~ Allie canyon upstream to Cooney canyon, and all perennial reaches of East Fork Mimbres (McKnight canyon) below the fish barrier, and all perennial tributaries thereto.

A. Designated Uses: irrigation, domestic water supply, ~~high quality~~ coldwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 µS/cm or less; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.
[20.6.4.804 NMAC - Rp 20 NMAC 6.1.2804, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

20.6.4.805 – 20.6.4.806 – No changes proposed.

20.6.4.807 CLOSED BASINS - Perennial reaches of the Mimbres river upstream of Cooney Canyon and all perennial reaches thereto, including perennial reaches of East Fork Mimbres river (McKnight Canyon) above the fish barrier.

A. Designated Uses: irrigation, domestic water supply, high quality coldwater aquatic life, livestock watering, wildlife habitat and primary contact.
[20.6.4.807 NMAC – N, XX-XX-XX]

BASIS FOR CHANGE: A draft UAA indicating changes to aquatic life designated uses and criteria for segments 20.6.4.803 NMAC, 20.6.4.804 NMAC and addition of a new segment 20.6.4.807 NMAC is part of this Triennial Review discussion draft (see Mimbres UAA, Attachment 4). The draft UAA study recommends that from the headwaters of the Mimbres River to Cooney Canyon, including all perennial tributaries from the 23d ecoregion (Subalpine forests), should remain designated as high quality coldwater aquatic life use. The segment extending from Allie Canyon to Cooney Canyon (the "Middle Mimbres") should be designated as coldwater aquatic life use and the segment from Allie Canyon to the mouth should be designated as coolwater aquatic life use.

After consideration of public comments, the revised UAA and responses to comments will be submitted to EPA for technical approval. Once technically approved by EPA, the UAA and recommended changes will be submitted to the WQCC for approval and adoption into the water quality standards. The Bureau will submit the UAA, standards revisions and relative supporting documentation to EPA for final approval under CWA Section 303(c). Depending on the timing, these actions may or may not be concurrent with the Triennial review process.

20.6.4.807 - 20.6.4.899: [RESERVED]

20.6.4.900 CRITERIA APPLICABLE TO EXISTING, DESIGNATED OR ATTAINABLE USES UNLESS OTHERWISE SPECIFIED IN 20.6.4.97 THROUGH 20.6.4.899 NMAC.

A. Fish Culture and Water Supply: Fish culture, public water supply and industrial water supply are designated uses in particular classified waters of the state where these

uses are actually being realized. However, no numeric criteria apply uniquely to these uses. Water quality adequate for these uses is ensured by the general criteria and numeric criteria for bacterial quality, pH and temperature.

BASIS FOR CHANGE: Correction of a minor typographical error requires inserting a space between the word 'Culture' and the word 'and.'

Subsection B, 20.6.4.900 –Subsection C, 20.6.4.900 – No changes proposed.

D. Primary Contact: the monthly geometric mean of E. coli bacteria of 126 cfu/100 mL or MPN/100 ml and single sample of 410 cfu/100 mL or MPN/100 mL and pH within the range of 6.6 to 9.0 apply to this use. The results for *E. coli* may be reported as either cfu (colony forming units) or the most probable number (MPN) as appropriate based on the test method used.

E. Secondary Contact: the monthly geometric mean of E. coli bacteria of 548 cfu/100 mL or MPN/100 mL and single sample of 2507 cfu/100 mL or MPN/100 mL apply to this use. The results for *E. coli* may be reported as either cfu (colony forming units) or the most probable number (MPN) as appropriate based on the test method used.

BASIS FOR CHANGE: EPA Region 6 has requested that the state's water quality standards and TMDL guidance refer to use of both colony forming units (cfu) and most probable number (MPN). The use of more cost-effective and time efficient methods in which counts are expressed as MPN/100 ml was approved by EPA for testing ambient waters in 2003[1] and for wastewater and sewage sludge in 2007[2]. The Bureau is currently using an approved EPA method for sampling and analyzing bacteria levels in ambient water and which reports results in MPN/100 ml. The currently recommended EPA recreational or bacteria criteria for *E. coli* are expressed as cfu/100 ml measured using *EPA Method 1603* or any other equivalent method that measures culturable *E. coli* [3,4]. Therefore, the water quality standards are proposed to be revised to reflect the use of updated methods for monitoring, assessment and reporting. References for EPA Method 1603 and EPA's final rules establishing alternate test procedures may be included in 20.6.4.901 NMAC as references (see also the memo in Attachment 1).

Subsection F through Subsection H, Subparagraph (1) of 20.6.4.900 – No changes proposed.

(2) Coldwater: dissolved oxygen 6.0 mg/L or more, 6T3 temperature 20°C (68°F), maximum temperature 24°C (75°F) and pH within the range of 6.6 to 8.8. Where a single segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature and no 6T3 temperature applies.

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[1] *U.S. Federal Register* - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.
[2] *U.S. Federal Register* - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.
[3] EPA, 2012: http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf
[4] USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA–821–R–02–023.

(3) Marginal Coldwater: dissolved oxygen 6.0 mg/L or more, 6T3 temperature 25°C (77°F), maximum temperature 29°C (84°F) and pH within the range from 6.6 to 9.0. Where a single segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature and no 6T3 temperature applies.

(4) Coolwater: dissolved oxygen 5.0 mg/L or more, maximum temperature 29°C (84°F) and pH within the range of 6.6 to 9.0.

(5) Warmwater: dissolved oxygen 5.0 mg/L or more, maximum temperature 32.2°C (90°F) and pH within the range of 6.6 to 9.0. Where a segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature.

(6) Marginal Warmwater: dissolved oxygen 5.0 mg/L or more, pH within the range of 6.6 to 9.0 and maximum temperature 32.2°C (90°F). Where a segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature.

BASIS FOR CHANGE: Dissolved oxygen criteria are revised to show decimal places in Subsection H, subparagraphs (3), (5) and (6) of 20.6.4 NMAC, consistent with dissolved oxygen criteria for the other aquatic life designated uses.

(7) Limited Aquatic Life: The acute aquatic life criteria of Subsections I and J of this section apply to this subcategory. Chronic aquatic life criteria do not apply unless adopted on a segment-specific basis. Human health-organism only criteria apply only for persistent pollutants unless adopted on a segment-specific basis.

I. Hardness-dependent acute and chronic aquatic life criteria for metals are calculated using the following equations. The criteria are expressed as a function of dissolved hardness (as mg $CaCO_3$/L). With the exception of aluminum, the equations are valid only for dissolved hardness concentrations of 0-400 mg/L. For dissolved hardness concentrations above 400 mg/L, the criteria for 400 mg/L apply. For aluminum the equations are valid only for dissolved hardness concentrations of 0-220 mg/L. For dissolved hardness concentrations above 220 mg/L, the aluminum criteria for 220 mg/L apply.

(1) Acute aquatic life criteria for metals. The equation to calculate acute criteria in µg/L is $\exp(m_A[\ln(\text{hardness})] + b_A)(CF)$. Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. EPA approved the hardness-based equation for total recoverable aluminum as applicable only where the pH is equal to or greater than 6.5 in the receiving stream after mixing. When pH is less than 6.5 in the receiving stream after mixing, the more stringent of either the 87 ug/L chronic total recoverable aluminum criterion or the criterion resulting from the chronic hardness-based equation is applicable.

BASIS FOR CHANGE: EPA approved the revised hardness-based criteria for chromium III, copper, lead, manganese, nickel and silver, aluminum, cadmium and zinc that were adopted during the 2009 Triennial Revision. However, for aluminum, EPA did not approve the acute or chronic hardness-based criteria for waters with a pH below 6.5 and recommended the state adopt the exception into its water quality standards. The Bureau is proposing to incorporate EPA's decision for aluminum criteria during this Triennial revision. Where the pH is less than 6.5 in the receiving stream after mixing, the more stringent of either the 87 ug/L chronic total recoverable

aluminum criterion or the criterion resulting from the chronic hardness-based equation will apply. Therefore, the proposed language in Subsection I, subparagraphs (1) and (2) of 20.6.4.900 NMAC is revised accordingly.

Metal	m_A	b_A	Conversion factor (CF)
Aluminum (Al)	1.3695	1.8308	
Cadmium (Cd)	0.8968	-3.5699	1.136672-[(ln hardness)(0.041838)]
Chromium (Cr) III	0.8190	3.7256	0.316
Copper (Cu)	0.9422	-1.700	0.960
Lead (Pb)	1.273	-1.460	1.46203-[(ln hardness)(0.145712)]
Manganese (Mn)	0.3331	6.4676	
Nickel (Ni)	0.8460	2.255	0.998
Silver (Ag)	1.72	-6.59	0.85
Zinc (Zn)	0.9094	0.9095	0.978

(2) Chronic aquatic life criteria for metals. The equation to calculate chronic criteria in µg/L is $\exp(m_C[\ln(\text{hardness})] + b_C)(CF)$. Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. EPA approved the hardness-based equation for total recoverable aluminum as applicable only where the pH is equal to or greater than 6.5 in the receiving stream after mixing. When pH is less than 6.5 in the receiving stream after mixing, the more stringent of either the 87 ug/L chronic total recoverable aluminum criterion or the criterion resulting from the chronic hardness-based equation is applicable. The equation parameters are as follows:

BASIS FOR CHANGE: EPA approved the revised hardness-based criteria for chromium III, copper, lead, manganese, nickel and silver, aluminum, cadmium and zinc that were adopted during the 2009 Triennial Revision. However, for aluminum, EPA did not approve the acute or chronic hardness-based criteria for waters with a pH below 6.5 and recommended the state adopt the exception into its water quality standards. The Bureau is proposing to incorporate EPA's decision for chronic aluminum criteria during this Triennial revision. Where the pH is less than 6.5 in the receiving stream after mixing, the more stringent of either the 87 ug/L chronic total recoverable aluminum criterion or the criterion resulting from the chronic hardness-based equation will apply. Therefore, the proposed language in Subsection I, subparagraphs (1) and (2) of 20.6.4.900 NMAC is revised accordingly.

Metal	m_C	b_C	Conversion factor (CF)
Aluminum (Al)	1.3695	0.9161	
Cadmium (Cd)	0.7647	-4.2180	1.101672-[(ln hardness)(0.041838)]
Chromium (Cr) III	0.8190	0.6848	0.860
Copper (Cu)	0.8545	-1.702	0.960
Lead (Pb)	1.273	-4.705	1.46203-[(ln hardness)(0.145712)]
Manganese (Mn)	0.3331	5.8743	
Nickel (Ni)	0.8460	0.0584	0.997
Zinc (Zn)	0.9094	0.6235	0.986

(3) Selected values of calculated acute and chronic criteria (µg/L).

Hardness as $CaCO_3$, dissolved (mg/L)		Al	Cd	Cr III	Cu	Pb	Mn	Ni	Ag	Zn
25	Acute	512	0.51	180	4	14	1,881	140	0.3	45
	Chronic	205	0.17	24	3	1	1,040	16		34
30	Acute	658	0.59	210	4	17	1,999	170	0.4	54
	Chronic	263	0.19	28	3	1	1,105	19		41
40	Acute	975	0.76	270	6	24	2,200	220	0.7	70
	Chronic	391	0.23	35	4	1	1,216	24		53
50	Acute	1,324	0.91	320	7	30	2,370	260	1.0	85
	Chronic	530	0.28	42	5	1	1,309	29		65
60	Acute	1,699	1.07	370	8	37	2,519	300	1.3	101
	Chronic	681	0.31	49	6	1	1,391	34		76
70	Acute	2,099	1.22	430	10	44	2,651	350	1.7	116
	Chronic	841	0.35	55	7	2	1,465	38		88
80	Acute	2,520	1.37	470	11	51	2,772	390	2.2	131
	Chronic	1,010	0.39	62	7	2	1,531	43		99
90	Acute	2,961	1.51	520	12	58	2,883	430	2.7	145
	Chronic	1,186	0.42	68	8	2	1,593	48		110
100	Acute	3,421	1.65	570	13	65	2,986	470	3.2	160
	Chronic	1,370	0.45	74	9	3	1,650	52		121
200	Acute	8,838	2.98	1,010	26	140	3,761	840	11	301
	Chronic	3,541	0.75	130	16	5	2,078	90		228
220	Acute	10,071	3.23	1,087	28	151	3,882	912	13	328
	Chronic	4,035	0.80	141	18	6	2,145	101		248
300	Acute	~~10,071~~	4.21	1,400	38	210	4,305	1190	21	435
	Chronic	~~4,035~~	1.00	180	23	8	2,379	130		329
400 and above	Acute	~~10,071~~	5.38	1,770	50	280	4,738	1510	35	564
	Chronic	~~4,035~~	1.22	230	29	11	2,618	170		428

BASIS FOR CHANGE: The table in Subsection I, Subparagraph (3) of 20.6.4.900 (above) is revised to add the subscript '3' to the chemical nomenclature for hardness, and to include the missing calculated values for metals at hardness of 220 mg/L $CaCO_3$. Also, in accordance with Subsection I of 20.6.4.900, the hardness equations for aluminum are valid up to dissolved hardness (as mg $CaCO_3$/L) of 220 mg/L. Therefore, the calculated values for aluminum criteria at dissolved hardness above 220 mg/L are deleted from the table.

J. Use-Specific Numeric criteria.

~~(1) Notes applicable to the table of numeric criteria in Paragraph (2) of this subsection.~~

~~(a) Where the letter "a" is indicated in a cell, the criterion is hardness-based and can be referenced in Subsection I of 20.6.4.900 NMAC.~~

~~(b) Where the letter "b" is indicated in a cell, the criterion can be referenced in Subsection C of 20.6.4.900 NMAC.~~

~~(c) Criteria are in µg/L unless otherwise indicated.~~

~~(d) Abbreviations are as follows: CAS - chemical abstracts service (see definition for "CAS number" in 20.6.4.7 NMAC); DWS - domestic water supply; Irr - irrigation; LW - livestock watering; WH - wildlife habitat; HH-OO - human health-organism only; C - cancer-causing; P - persistent.~~

~~(e) The criteria are based on analysis of an unfiltered sample unless otherwise indicated. The acute and chronic aquatic life criteria for aluminum are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. For aluminum, where the pH is 6.5 or less in the receiving water after mixing, the acute and chronic dissolved criteria in the table will apply.~~

~~(f) The criteria listed under human health-organism only (HH-OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms.~~

~~(g) The dioxin criteria apply to the sum of the dioxin toxicity equivalents expressed as 2,3,7,8-TCDD dioxin.~~

~~(h) The criteria for polychlorinated biphenyls (PCBs) applies to the sum of all congeners, to the sum of all homologs or to the sum of all aroclors.~~

BASIS FOR CHANGE: The order of Subsection J, subparagraphs J(1) and J(2) are transposed so the table precedes the explanatory notes.

(~~2~~1) Table of Numeric Criteria: The following table sets forth the numeric criteria applicable to existing, designated and attainable uses. For metals, criteria represent the total sample fraction unless otherwise specified in the table. Additional criteria that are not compatible with this table are found in Subsections A through I, K and L of this section.

BASIS FOR CHANGES: As noted in the previous section, the order of Subsection J, subparagraphs J(1) and J(2) are transposed so the table of numeric criteria precedes the explanatory notes. Language is added to the new section Subsection J, Subparagraph (1) of 20.6.4.900 (above) to clarify that criteria for metals are based on the total sample fraction unless otherwise specified (e.g., dissolved). Consistent with the definitions in Subsection I, subparagraph (I)(5) in 20.6.4.7 NMAC, the irrigation storage designated use (e.g., Irr Storage) is added to the table column headings below. Also, a hyphen is added to the Chemical Abstracts Service registry number (CAS number) for Bis(2-ethylhexyl) phthalate to correct a typographical error in the table below.

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Aluminum, dissolved	7429-90-5		5,000						
Aluminum, total recoverable	7429-90-5					a	a		
Antimony, dissolved	7440-36-0	6						640	P
Arsenic, dissolved	7440-38-2	10	100	200		340	150	9.0	C,P
Asbestos	1332-21-4	7,000,000 fibers/L							
Barium, dissolved	7440-39-3	2,000							
Beryllium, dissolved	7440-41-7	4							
Boron, dissolved	7440-42-8		750	5,000					
Cadmium, dissolved	7440-43-9	5	10	50		a	a		
Chlorine residual	7782-50-5				11	19	11		
Chromium III, dissolved	16065-83-1					a	a		
Chromium VI, dissolved	18540-29-9					16	11		
Chromium, dissolved	7440-47-3	100	100	1,000					
Cobalt, dissolved	7440-48-4		50	1,000					
Copper, dissolved	7440-50-8	1300	200	500		a	a		
Cyanide, total recoverable	57-12-5	200			5.2	22.0	5.2	140	
Lead, dissolved	7439-92-1	15	5,000	100		a	a		
Manganese, dissolved	7439-96-5					a	a		
Mercury	7439-97-6	2		10	0.77				
Mercury, dissolved	7439-97-6					1.4	0.77		
Methylmercury	22967-92-6							0.3 mg/kg in fish tissue	P
Molybdenum, dissolved	7439-98-7		1,000						
Molybdenum, total recoverable	7439-98-7					7,920	1,895		
Nickel, dissolved	7440-02-0	700				a	a	4,600	P
Nitrate as N		10 mg/L							
Nitrite + Nitrate				132 mg/L					
Selenium, dissolved	7782-49-2	50	b	50				4,200	P

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Selenium, total recoverable	7782-49-2				5.0	20.0	5.0		
Silver, dissolved	7440-22-4					a			
Thallium, dissolved	7440-28-0	2						0.47	P
Uranium, dissolved	7440-61-1	30							
Vanadium, dissolved	7440-62-2		100	100					
Zinc, dissolved	7440-66-6	10,500	2,000	25,000		a	a	26,000	P
Adjusted gross alpha		15 pCi/L		15 pCi/L					
Radium 226 + Radium 228		5 pCi/L		30.0 pCi/L					
Strontium 90		8 pCi/L							
Tritium		20,000 pCi/L		20,000 pCi/L					
Acenaphthene	83-32-9	2,100						990	
Acrolein	107-02-8	18						9	
Acrylonitrile	107-13-1	0.65						2.5	C
Aldrin	309-00-2	0.021				3.0		0.00050	C,P
Anthracene	120-12-7	10,500						40,000	
Benzene	71-43-2	5						510	C
Benzidine	92-87-5	0.0015						0.0020	C
Benzoaanthracene	56-55-3	0.048						0.18	C
Benzoapyrene	50-32-8	0.2						0.18	C,P
Benzo(b)fluoranthene	205-99-2	0.048						0.18	C
Benzo(k)fluoranthene	207-08-9	0.048						0.18	C
alpha-BHC	319-84-6	0.056						0.049	C
beta-BHC	319-85-7	0.091						0.17	C
Gamma-BHC (Lindane)	58-89-9	0.20				0.95		1.8	
Bis(2-chloroethyl) ether	111-44-4	0.30						5.3	C
Bis(2-chloroisopropyl) ether	108-60-1	1,400						65,000	
Bis(2-ethylhexyl) phthalate	117-81-7	6						22	C
Bromoform	75-25-2	44						1,400	C

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Butylbenzyl phthalate	85-68-7	7,000						1,900	
Carbon tetrachloride	56-23-5	5						16	C
Chlordane	57-74-9	2				2.4	0.0043	0.0081	C,P
Chlorobenzene	108-90-7	100						1,600	
Chlorodibromomethane	124-48-1	4.2						130	C
Chloroform	67-66-3	57						4,700	C
2-Chloronaphthalene	91-58-7	2,800						1,600	
2-Chlorophenol	95-57-8	175						150	
Chrysene	218-01-9	0.048						0.18	C
Diazinon	333-41-5					0.17	0.17		
4,4'-DDT and derivatives		1.0			0.001	1.1	0.001	0.0022	C,P
Dibenzo(a,h)anthracene	53-70-3	0.048						0.18	C
Dibutyl phthalate	84-74-2	3,500						4,500	
1,2-Dichlorobenzene	95-50-1	600						1,300	
1,3-Dichlorobenzene	541-73-1	469						960	
1,4-Dichlorobenzene	106-46-7	75						190	
3,3'-Dichlorobenzidine	91-94-1	0.78						0.28	C
Dichlorobromomethane	75-27-4	5.6						170	C
1,2-Dichloroethane	107-06-2	5						370	C
1,1-Dichloroethylene	75-35-4	7						7,100	C
2,4-Dichlorophenol	120-83-2	105						290	
1,2-Dichloropropane	78-87-5	5.0						150	C
1,3-Dichloropropene	542-75-6	3.5						210	C
Dieldrin	60-57-1	0.022				0.24	0.056	0.00054	C,P
Diethyl phthalate	84-66-2	28,000						44,000	
Dimethyl phthalate	131-11-3	350,000						1,100,000	
2,4-Dimethylphenol	105-67-9	700						850	
2,4-Dinitrophenol	51-28-5	70						5,300	
2,4-Dinitrotoluene	121-14-2	1.1						34	C
Dioxin		3.0E-05						5.1E-08	C,P
1,2-Diphenylhydrazine	122-66-7	0.44						2.0	C
alpha-Endosulfan	959-98-8	62				0.22	0.056	89	

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
beta-Endosulfan	33213-65-9	62				0.22	0.056	89	
Endosulfan sulfate	1031-07-8	62						89	
Endrin	72-20-8	2				0.086	0.036	0.060	
Endrin aldehyde	7421-93-4	10.5						0.30	
Ethylbenzene	100-41-4	700						2,100	
Fluoranthene	206-44-0	1,400						140	
Fluorene	86-73-7	1,400						5,300	
Heptachlor	76-44-8	0.40				0.52	0.0038	0.00079	C
Heptachlor epoxide	1024-57-3	0.20				0.52	0.0038	0.00039	C
Hexachlorobenzene	118-74-1	1						0.0029	C,P
Hexachlorobutadiene	87-68-3	4.5						180	C
Hexachlorocyclopen-tadiene	77-47-4	50						1,100	
Hexachloroethane	67-72-1	25						33	C
Ideno(1,2,3-cd)pyrene	193-39-5	0.048						0.18	C
Isophorone	78-59-1	368						9,600	C
Methyl bromide	74-83-9	49						1,500	
2-Methyl-4,6-dinitrophenol	534-52-1	14						280	
Methylene chloride	75-09-2	5						5,900	C
Nitrobenzene	98-95-3	18						690	
N-Nitrosodimethylamine	62-75-9	0.0069						30	C
N-Nitrosodi-n-propylamine	621-64-7	0.050						5.1	C
N-Nitrosodiphenylamine	86-30-6	71						60	C
Nonylphenol	84852-15-3					28	6.6		
Polychlorinated Byphenyls (PCBs)	1336-36-3	0.50			0.014	2	0.014	0.00064	C,P
Pentachlorophenol	87-86-5	1.0				19	15	30	C
Phenol	108-95-2	10,500						860,000	
Pyrene	129-00-0	1,050						4,000	
1,1,2,2-Tetrachloroethane	79-34-5	1.8						40	C
Tetrachloroethylene	127-18-4	5						33	C,P

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Toluene	108-88-3	1,000						15,000	
Toxaphene	8001-35-2	3				0.73	0.0002	0.0028	C
1,2-Trans-dichloroethylene	156-60-5	100						10,000	
1,2,4-Trichlorobenzene	120-82-1	70						70	
1,1,1-Trichloroethane	71-55-6	200							
1,1,2-Trichloroethane	79-00-5	5						160	C
Trichloroethylene	79-01-6	5						300	C
2,4,6-Trichlorophenol	88-06-2	32						24	C
Vinyl chloride	75-01-4	2						24	C

(~~1~~2) Notes applicable to the table of numeric criteria in Paragraph (~~2~~1) of this subsection.

(a) Where the letter "a" is indicated in a cell, the criterion is hardness-based and can be referenced in Subsection I of 20.6.4.900 NMAC.

(b) Where the letter "b" is indicated in a cell, the criterion can be referenced in Subsection C of 20.6.4.900 NMAC.

(c) Criteria are in µg/L unless otherwise indicated.

(d) Abbreviations are as follows: CAS - chemical abstracts service (see definition for "CAS number" in 20.6.4.7 NMAC); DWS - domestic water supply; Irr/Irr Storage-irrigation or irrigation storage; LW - livestock watering; WH - wildlife habitat; HH-OO - human health-organism only; C - cancer-causing; P - persistent.

(e) The criteria are based on analysis of an unfiltered sample unless otherwise indicated. The acute and chronic aquatic life criteria for aluminum are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department.

(f) The criteria listed under human health-organism only (HH-OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms.

(g) The dioxin criteria apply to the sum of the dioxin toxicity equivalents expressed as 2,3,7,8-TCDD dioxin.

(h) The criteria for polychlorinated biphenyls (PCBs) applies to the sum of all congeners, to the sum of all homologs or to the sum of all aroclors.

BASIS FOR CHANGE: For clarity, the order of Subsection J, subparagraphs J(1) and J(2) are transposed so the explanatory notes in new Subsection J, Subparagraph (2) of 20.6.4.900 (above) follow the table.

K. Acute aquatic life criteria for total ammonia are dependent on pH and the presence or absence of salmonids. The criteria in mg/L as N based on analysis of unfiltered samples are as follows:

pH	Where Salmonids Present	Where Salmonids Absent
6.5 and below	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	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0 and above	0.885	1.32

L. Chronic aquatic life criteria for total ammonia are dependent on pH, temperature and whether fish in early life stages are present or absent. The criteria are based on analysis of unfiltered samples and are calculated according to the equations in Paragraphs (1) and (2) of this subsection. For temperatures from below 0 to 14°C, the criteria for ~~0~~14°C apply; for temperatures above 30°C, the criteria for 30°C apply. For pH values below 6.5, the criteria for 6.5 apply; for pH values above 9.0, the criteria for 9.0 apply.

BASIS FOR CHANGE: The first column in the table below in Subsection L, Subparagraph L (1) (b) NMAC is redundant and proposed to be deleted; therefore, underlined additions in the

text above are proposed to correspond to these changes.

(1) Chronic aquatic life criteria for total ammonia when fish early life stages are present.

(a) The equation to calculate chronic criteria in mg/L as N is:

$$((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688}))) \times MIN\ (2.85,\ 1.45 \times 10^{0.028 \times (25-T)})$$

(b) Selected values of calculated chronic criteria in mg/L as N:

pH	Temperature (°C)										
	~~0 and below~~	14 and below	15	16	18	20	22	24	26	28	30 and above
6.5 and below	~~6.67~~	6.67	6.46	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	~~6.57~~	6.57	6.36	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	~~6.44~~	6.44	6.25	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	~~6.29~~	6.29	6.10	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	~~6.12~~	6.12	5.93	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	~~5.91~~	5.91	5.73	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	~~5.67~~	5.67	5.49	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	~~5.39~~	5.39	5.22	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	~~5.08~~	5.08	4.92	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	~~4.73~~	4.73	4.59	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	~~4.36~~	4.36	4.23	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	~~3.98~~	3.98	3.85	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	~~3.58~~	3.58	3.47	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	~~3.18~~	3.18	3.09	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	~~2.80~~	2.80	2.71	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	~~2.43~~	2.43	2.36	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	~~2.10~~	2.10	2.03	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	~~1.79~~	1.79	1.74	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	~~1.52~~	1.52	1.48	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	~~1.29~~	1.29	1.25	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	~~1.09~~	1.09	1.06	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	~~0.920~~	0.920	0.892	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	~~0.778~~	0.778	0.754	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	~~0.661~~	0.661	0.641	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	~~0.565~~	0.565	0.548	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0 and above	~~0.486~~	0.486	0.471	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

BASIS FOR CHANGE: The first column in the table above in Subsection L, Subparagraph L (1) (b) NMAC is redundant and proposed to be deleted; therefore, underlined additions in the

table above are proposed to correspond to these changes.

(2) Chronic aquatic life criteria for total ammonia when fish early life stages are absent.

(a) The equation to calculate chronic criteria in mg/L as N is:

$$((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688}))) \times 1.45 \times 10^{0.028 \times (25-MAX(T,7))}$$

(b) Selected values of calculated chronic criteria in mg/L as N:

pH	Temperature (°C)									
	~~7 and below~~	7 and below	8	9	10	11	12	13	14	15 and above
6.5 and below	~~10.8~~	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46
6.6	~~10.7~~	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36
6.7	~~10.5~~	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25
6.8	~~10.2~~	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10
6.9	~~9.93~~	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93
7.0	~~9.60~~	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73
7.1	~~9.20~~	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49
7.2	~~8.75~~	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22
7.3	~~8.24~~	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92
7.4	~~7.69~~	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59
7.5	~~7.09~~	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23
7.6	~~6.46~~	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85
7.7	~~5.81~~	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47
7.8	~~5.17~~	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09
7.9	~~4.54~~	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71
8.0	~~3.95~~	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36
8.1	~~3.41~~	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03
8.2	~~2.91~~	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74
8.3	~~2.47~~	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48
8.4	~~2.09~~	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25
8.5	~~1.77~~	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06
8.6	~~1.49~~	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892
8.7	~~1.26~~	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754
8.8	~~1.07~~	1.07	1.01	0.944	0.855	0.829	0.778	0.729	0.684	0.641
8.9	~~0.917~~	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548
9.0 and above	~~0.790~~	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471
At 15° C and above, the criterion for fish early life stages absent is the same as the criterion for fish early life stages present (refer to table in Paragraph (1) of this subsection).										

[20.6.4.900 NMAC - Rp 20 NMAC 6.1.3100, 10-12-00; A, 10-11-02; A, 05-23-05; A, 07-17-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The first column in the table above in Subsection L, Subparagraph L (2) (b) NMAC is redundant and proposed to be deleted; therefore, underlined additions in the table above are proposed to correspond to these changes.

20.6.4.901 PUBLICATION REFERENCES: These documents are intended as guidance and are available for public review during regular business hours at the offices of the surface water quality bureau. Copies of these documents have also been filed with the New Mexico state records center in order to provide greater access to this information.

A. American public health association. 1992. *Standard methods for the examination of water and wastewater, 18th Edition.* Washington, D.C. 1048 p.

B. American public health association. 1995. *Standard methods for the examination of water and wastewater, 19th Edition.* Washington, D.C. 1090 p.

C. American public health association. 1998. *Standard methods for the examination of water and wastewater, 20th Edition.* Washington, D.C. 1112 p.

D. United States geological survey. 1987. *Methods for determination of inorganic substances in water and fluvial sediments, techniques of water-resource investigations of the United States geological survey.* Washington, D.C. 80 p.

E. United States geological survey. 1987. *Methods for the determination of organic substances in water and fluvial sediments, techniques of water-resource investigations of the U.S. geological survey.* Washington, D.C. 80 p.

F. United States environmental protection agency. 1974. *Methods for chemical analysis of water and wastes.* National environmental research center, Cincinnati, Ohio. (EPA-625-/6-74-003). 298 p.

G. New Mexico water quality control commission. 2003. *(208) state of New Mexico water quality management plan.* Santa Fe, New Mexico. 85 p.

H. Colorado river basin salinity control forum. 20~~02~~11. *20~~02~~11 Review, water quality standards for salinity, Colorado river system.* Phoenix, Arizona. 99 p.

I. United States environmental protection agency. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms.* Office of research and development, Washington, D.C. (5th Ed., EPA 821-R-02-012). 293 p. http://www.epa.gov/ostWET/disk2/atx.pdf

J. United States environmental protection agency. 2002. *Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms.* Environmental monitoring systems laboratory, Cincinnati, Ohio. ([4th Ed., EPA 821-R-02-01). 335 p.

K. Ambient-induced mixing, in United States environmental protection agency. 1991. *Technical support document for water quality-based toxics control.* Office of water, Washington, D.C. (EPA/505/2-90-001). 2 p.

L. United States environmental protection agency. 1983. *Technical support manual: waterbody surveys and assessments for conducting use attainability analyses.* Office of water, regulations and standards, Washington, D.C. 251 p. http://www.epa.gov/OST/library/wqstandards/uaavol123.pdf

M. United States environmental protection agency. 1984. *Technical support manual: waterbody surveys and assessments for conducting use attainability analyses, volume III: lake systems.* Office of water, regulations and standards, Washington, D.C. 208 p. http://www.epa.gov/OST/library/wqstandards/uaavol123.pdf

[20.6.4.901 NMAC - Rp 20 NMAC 6.1.4000, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

BASIS FOR CHANGE: The reference in Subsection H of 20.6.4.901 is updated to the most recent version (the basin report is updated on a triennial basis).

HISTORY of 20.6.4 NMAC:

Pre-NMAC History:

Material in the part was derived from that previously filed with the commission of public records - state records center and archives:

WQC 67-1, Water Quality Standards, filed 7-17-67, effective 8-18-67
WQC 67-1, Amendment Nos. 1-6, filed 3-21-68, effective 4-22-68
WQC 67-1, Amendment No. 7, filed 2-27-69, effective 3-30-69
WQC 67-1, Amendment No. 8, filed 7-14-69, effective 8-15-69
WQC 70-1, Water Quality Standards for Intrastate Waters and Tributaries to Interstate Streams, filed July 17, 1970;
WQC 67-1, Amendment Nos. 9 and 10, filed 2-12-71, effective 3-15-71
WQC 67-1, Amendment No. 11, filed 3-4-71, effective 4-5-71
WQC 73-1, New Mexico Water Quality Standards, filed 9-17-73, effective 10-23-73
WQC 73-1, Amendment Nos. 1 and 2, filed 10-3-75, effective 11-4-75
WQC 73-1, Amendment No. 3, filed 1-19-76, effective 2-14-76
WQC 77-2, Amended Water Quality Standards for Interstate and Intrastate Streams in New Mexico, filed 2-24-77, effective 3-11-77
WQC 77-2, Amendment No. 1, filed 3-23-78, effective 4-24-78
WQC 77-2, Amendment No. 2, filed 6-12-79, effective 7-13-79
WQCC 80-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, filed 8-28-80, effective 9-28-80
WQCC 81-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, filed 5-5-81, effective 6-4-81
WQCC 81-1, Amendment No. 1, filed 5-19-82, effective 6-18-82
WQCC 81-1, Amendment No. 2, filed 6-24-82, effective 7-26-82
WQCC 85-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, filed 1-16-85, effective 2-15-85
WQCC 85-1, Amendment No. 1, filed 8-28-87, effective 9-28-87
WQCC 88-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, filed 3-24-88, effective 4-25-88
WQCC 91-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, filed 5-29-91, effective 6-29-91
WQCC 91-1, Amendment No. 1, filed 10-11-91, effective 11-12-91

History of the Repealed Material:

WQC 67-1, Water Quality Standards, - Superseded, 10-23-73
WQC 73-1, New Mexico Water Quality Standards, - Superseded, 3-11-77
WQC 77-2, Amended Water Quality Standards for Interstate and Intrastate Streams in New Mexico, - Superseded, 9-28-80

WQCC 80-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, - Superseded, 6-4-81
WQCC 81-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, - Superseded, 2-15-85
WQCC 85-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, - Superseded, 4-25-88
WQCC 88-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, - Superseded, 6-29-91
WQCC 91-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, - Superseded, 1-23-95
20 NMAC 6.1, Standards for Interstate and Intrastate Streams, - Repealed, 2-23-00
20 NMAC 6.1, Standards for Interstate and Intrastate Surface Waters, - Repealed, 10-12-00

Attachments

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Director
Resource Protection Division

MEMORANDUM

TO: Kris Pintado, Standards, Planning and Reporting Team Leader

FROM: Jodey Kougioulis, Quality Assurance Officer

DATE: February 26, 2014

SUBJECT: Triennial Review – Most probable number (MPN) and colony forming units (cfu) enumeration methods and proposed standards reporting revision

Introduction and Purpose

The purpose of this memo is to address EPA's and Bureau staff comments and suggestions regarding the reporting of bacterial concentrations as MPN and to propose suggested revisions to the state's current reporting language for bacteria criteria which are expressed as colony forming units (cfu) per 100 ml. Currently, the Bureau reports bacteria data as most probable number (MPN) per 100 ml based on the use of IDEXX *Quanti-Tray* (QT) method which is an extended version of the IDEXX Colilert test. MPN and cfu represent different enumeration methods and result in different method specific units, but for purposes of reporting, EPA has used these terms interchangeably. EPA has approved methods for enumeration and allows reporting in either cfu or MPN per 100/ml in federal rule for ambient water (40 CFR, 2003) and for wastewater and sludge (40 CFR, 2007).

Background and General Description of MPN and cfu.

The MPN is a statistical estimate of the number of bacteria that, more probable than any other number, would give the observed result; it is not an actual count of the bacteria present. Membrane filtration (MF) methods which produce results expressed as cfu are culture-based and results are quantified by counting the number of colonies that arise from bacteria captured on the membrane filter per volume of water filtered. Although expressed as an actual count of the bacterial colony forming units, the number is still considered an estimate because colonies can be produced by one or several cells that can clump together in the sample. MPN methods are also culture-based with a defined substrate which produces an estimate number (density) of organisms based on the combination of positive and negative test tube results that can be read from a statistical probability MPN table.

Proposal

The Bureau currently uses an approved EPA method for sampling and analyzing bacteria levels in its ambient water quality monitoring program and reports these results in MPN. The water quality standards for bacteria criteria are proposed to be revised to reflect in the Bureau's current reporting practices and EPA's approved use of either membrane filtration methods, reported as cfu, or MPN methods, reported as MPN for enumeration of bacteria in ambient water and effluent. This change, if adopted, would allow results to be reported in either cfu or MPN, depending on the analytical method. The most appropriate place to do this may be in 20.6.4.900.D and E of NMAC by adding language similar to the following: "Water quality standards for E. coli are expressed in colony forming units per 100 milliliters of water (cfu/100 ml) or as a Most Probable Number (MPN)/100 ml."

Related Research

There have been numerous published papers that address the similarities or differences between enumeration results obtained by cfu methods and those obtained by MPN methods. Much of the earlier research concluded that *"there was no significant difference for the enumeration of E. coli between the QT and MF methods" (Rompré et al., 2002).*

More recently published research by Wohlsen et al. (2006) does show a significant difference between the two enumeration methods when using a standard reference inoculum. The use and calibration of a standard reference inoculum of only viable cells still needs to be related to original criteria development which was based on a combination of frequency, magnitude, and duration of exposure to ambient recreational waters, bacterial densities as enumerated by MF, and selected illness rates in response. As stated earlier, this is primarily a reporting revision to acknowledge the programmatic reality that both MPN and cfu can be reported and used to assess against the water quality standard.

Staff and EPA Comments, Suggestions, and Initial Review of Bacteria Criteria Reporting

Responses to both the EPA, Bureau staff, and the proposal justification will need to be clearly communicated in a consistent and coordinated fashion. The need to remain consistent with existing water quality standard language, definitions, and format may limit the expanse of revised language but ultimately the simple proposed revision will communicate the available reporting options for bacteria criteria. Comments from the Bureau staff largely focused on the fact that MPN and cfu are enumerated and expressed differently with method specific units and that clear definitions are needed to describe this difference. EPA's comments and suggestion are largely in concert with the proposed revision and the suggested language will provide the clarity needed for criteria interpretation.

SWQB Staff Questions and Responses

Question 1): I have come across several scholarly articles that attempt to correlate MPN to cfu. They are not the same; cfu represents an absolute number of units, whereas MPN represents a theoretical value (often considered the maximum value).

Response: *EPA permits staff and SWQB staff raised issues about the enumeration of bacteria - most probable number (MPN) and colony forming units (*cfu*) - relative to implementation and assessment of the WQS. The traditional plate tests, including membrane filtration, estimate or count 'colonies' of bacteria reported as* cfu. *These provide a direct count of an indicator organism (E. coli) in ambient water or wastewater based on the development of colonies in/on media and a calculation is still performed. While microscopic counts may be more accurate, it's costly and time consuming, and there's still the problem of what's viable or not. Very few tests are conducted to determine live and dead colonies; in summary exact counts are generally not feasible to obtain. Newer tests such as Colilert (which is used by SWQWB for assessment and monitoring) report data as MPN which is a statistical representation of what level of E. coli is likely present in a sample. While MPN and* cfu *may not be entirely equivalent, for the purposes of reporting, these terms are currently used interchangeably by the EPA. EPA has approved these methods for enumeration in federal rule for ambient water (40 CFR, 2003) and for wastewater and sludge (40 CFR, 2007). The currently recommended EPA recreational or bacteria criteria for E. coli are expressed as cfu/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable E. coli. Therefore, the water quality standards are under deliberation to be revised to reflect the use of updated methods for monitoring, assessment and reporting. After much consideration, the most appropriate place to do this may be in 20.6.4.900.D and E of NMAC by adding language similar to the following:*

> *"Water quality standards for E. coli are expressed in colony forming units per 100 milliliters of water (cfu / 100 ml) or as a Most Probable Number (MPN)/100 ml"*

References for EPA Method 1603 and EPA's final rules establishing alternate test procedures could also be included in 20.6.4.901 NMAC as references.

Abbreviations for both cfu *and MPN are suggested to be included in the WQS definitions.*

Question 2) Similar to the cfu/100mL definition, do we need to make reference to cfu/100mL in the MPN definition?
Add the term "most probable number" (under terms beginning with the letter 'M').

Response: *Generally, the definitions seem to stand on their own, e.g., there doesn't seem to be any 'cross referencing' in these definitions. Instead of adding a definition for MPN, the abbreviation for MPN is retained in this section. Please also see the previous discussion in response to bacteria enumeration (under 20.6.4.7.A (3)(a) NMAC), and response below.*

"MPN" will be listed under the abbreviations section of the definitions, so it'll be 'defined' in that way. It's also appropriate to add 'MPN' (as an alternate enumeration to cfu) under the criteria section in 20.6.4.900.D and E NMAC (see the new language in that section). As there's not a "full" definition for cfu in the WQS, to be consistent with the rule format, a "full" definition for MPN won't be added. Also, there's really not a concise, easily understood definition for cfu to put into the standards. Both enumeration methods are also fully described in the EPA criteria recommendations and supporting documents, in the methods, and in the scientific literature.

EPA Comment and SWQB Response

The Region's concern with the state's current bacteria criteria are related to how the provision reads and its interpretation. The *E. coli* standard that the state uses is expressed as colony forming units (cfu) per 100 ml. In a plain reading, this provision requires a specific test method but does not allow an alternative test. Generally the Region recommends avoiding this type of approach to test methods.

When bacterial Total Maximum Daily Loads (TMDL) are issued, they may specify extremely large numbers of cfu/100 ml as a loading limit. This requires building an equation for calculating the loading limit as expressed in the TMDL into a footnote into NPDES permits. To simplify the process, the Region has consulted with waste water treatment plant operators to determine if the most probable number (MPN) can be used as an equivalent to cfu/100 ml. The general answer is yes, and the Region has been using this approach. NMED inspectors seem to agree with this approach, since they also see the problem in the field. The problem here is that this approach requires the use of a different test method. What the Region suggests is that both the standards and TMDL guidance documents refer to both cfu/100 ml *and* MPN as equivalent, allowing either generally approved test method to be used to account the level of indicator bacteria in permits.

Response: *EPA Region 6 has suggested that the water quality standards and the state's TMDL guidance refer to both colony forming units (*cfu*) and most probable number (MPN), as EPA has approved the use of test methods with results that are expressed in either cfu or MPN. The use of more cost-effective and time efficient methods in which counts are expressed as MPN was approved by EPA as equivalent for testing ambient waters in 2003[1], and for wastewater and sewage sludge in 2007[2]. The SWQB is currently using an approved EPA method for sampling and analyzing bacteria levels in ambient water and reporting results in MPN. The currently recommended EPA recreational or bacteria criteria for E. coli are expressed as* cfu*/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable E. coli [3],[4]. Therefore, the water quality standards are proposed to be revised to reflect the use of updated methods for monitoring, assessment and reporting. References for EPA Method 1603 and EPA's final rules establishing alternate test procedures will also be included in 20.6.4.901 NMAC as references.*

Footnotes

1. *U.S. Federal Register* - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.
2. *U.S. Federal Register* - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.
3. EPA, 2012: http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf
4. USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA–821–R–02–023

References

Annie Rompre′, Pierre Servais, Julia Baudart, Marie-Rene′e de-Roubin, Patrick Laurent (2002). *Detection and enumeration of coliforms in drinking water: current methods and emerging approaches.* Journal of Microbiological Methods 49 (2002) 31–54

U.S. Federal Register - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.

U.S. Federal Register - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.

USEPA, 2012:
http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf

USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA–821–R–02–023

Wohlsen, T., Bates, J., Vesey, G., Robinson, W.A. and M. Katouli (2006) Evaluation of the methods for enumerating coliform bacteria from water samples using precise reference standards. *Letters in Applied Microbiology* **42**, 350-356.

Justification for Amending §20.6.4.16 NMAC

The New Mexico Department of Game and Fish (NMDGF) frequently uses piscicides (fish toxicants) to remove unwanted species from various waters within the State of New Mexico. Various formulations of rotenone are currently registered by the U.S. Environmental Protection Agency. Historic rotenone use focused on enhancement of sport fisheries primarily in reservoirs with contemporary use limited to native fish restoration efforts. Prior to the late 1990s, the use of a piscicide in waters of New Mexico was unregulated though concerns existed regarding violations of §20.6.4.13 NMAC. The U.S. Environmental Protection Agency consistently held the position that application of a pesticide in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act, including piscicides, was not a point source pollutant (71 Fed. Reg. 68,483) and thus did not require a National Pollutant Discharge Elimination System (NPDES) permit. As a result, §20.6.4.16 NMAC was adopted to provide a process for a piscicide use proponent to obtain approval from the NM Water Quality Control Commission (WQCC) with a mandatory hearing by the WQCC for all planned uses. The WQCC has held approximately seven hearings and repeatedly hears the same testimony with little new information regarding human or environmental health concerns. Consistent expert testimony indicates the products and their use are safe and effective for achieving fishery management and conservation goals in New Mexico.

Planned use of a piscicide in New Mexico requires compliance with a variety of Federal and State laws including the National Environmental Policy Act of 1969 (NEPA), Endangered Species Act of 1974 (ESA), and §20.6.4.16 NMAC Planned Use of a Piscicide. All known piscicide applications to waters of New Mexico have been conducted by either federal and/or state natural resource agencies (e.g. U.S. Forest Service, U.S. Fish and Wildlife Service, or NMDGF). The NMDGF relies upon federal Sportfish Restoration Act funds to support agency operations. Many waters are located within U.S. Forest Service boundaries or involve threatened or endangered species. As a result, a federal nexus is created which triggers review under NEPA and ESA. Reviews conducted under ESA focus on the effects of the proposed action on threatened and endangered species with review limited to the agency proponent and the U.S. Fish and Wildlife Service. Review under NEPA, however, includes public comment periods, public review of environmental documents, and public involvement in the decision making process. The public involvement process required by NEPA consistently ensures public awareness and participation in project development and implementation similar to the procedures set out in §20.6.4.16 NMAC. In fact, the two are repetitive processes.

The requirement to obtain NPDES permits for point source discharges from pesticide applications to waters of the United States stems from a 2009 decision by the Sixth Circuit Court of Appeals. In its ruling on *National Cotton Council, et al. v. EPA*, the Court vacated the EPA's 2006 rule which said NPDES permits were not required for discharges of pesticides to waters of the United States for applications of pesticides to, or over, including near such waters when in compliance with the existing label (per the Federal Insecticide, Fungicide, and Rodenticide Act, or "FIFRA"). In its ruling, the Sixth Circuit determined that (1) biological pesticides and (2) chemical pesticides that leave a residue are pollutants as defined under the CWA and as such are subject to regulations applicable to pollutants. Courts have previously determined that applications of pesticides, such as from nozzles of planes and trucks, irrigation equipment, etc. are point sources. As a result of the Sixth Circuit's decision, point source discharges to waters of the United States from the application of pesticides require NPDES permits as of October 31,

2011. http://cfpub.epa.gov/npdes/faqs.cfm?program_id=410#476. The U.S. Environmental Protection Agency issued a nationwide Pesticide General Permit to cover pesticide applications in states, including those without NPDES permit programs, which includes activities by NMDGF. Since 2012, NMDGF has obtained coverage under the nationwide general permit and obtained approval from the WQCC to conduct piscicide applications in the Rio Costilla basin. The new NPDES permit process creates a new redundancy by requiring a federal review of piscicide use in addition to the requirements of §20.6.4.16 NMAC.

Considering federal law already often requires public disclosure under NEPA, review of effects on threatened and endangered species under ESA, and regulation of piscicides under the Clean Water Act and the Federal Insecticide, Fungicide, and Rodenticide Act, NMDGF recommends to amend §20.6.4.16 NMAC to eliminate redundant requirement in the piscicide use process for more efficient use of government resources and enhance fishery management and conservation activities in New Mexico. If the planned use of a piscicide is covered under a NPDES permit, the proposed piscicide use would require no additional WQCC review but will require post-treatment assessment monitoring and additional public notice to local entities. If a NPDES permit is not available (e.g., Congress acts on proposed legislation to remove the NPDES requirement for pesticides), then the WQCC would still have the opportunity to review the project in the absence of other federal review. Whether a hearing is held to review the project would be discretionary, however, rather than a mandate.

Proposed Amendment

20.6.4.16 PLANNED USE OF A PISCICIDE: The use of a piscicide registered under the Federal
Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. Section 136 *et seq.*, and under the New Mexico Pesticide Control Act (NMPCA), Section 76-4-1 *et seq.* NMSA 1978 (1973) in a surface water of the state, shall not be a violation of Subsection F of 20.6.4.13 NMAC when such use is covered by a National Pollutant Discharge Elimination System (NPDES) permit or has been approved by the commission under procedures provided in this section. The use of a piscicide which is covered by a NPDES permit shall require no further review by the commission. The commission may approve the reasonable use of a piscicide under this section if the proposed use is not covered by a NPDES permit to further a Clean Water Act objective to restore and maintain the physical or biological integrity of surface waters of the state, including restoration of native species.

A. Any person seeking commission approval of the use of a piscicide not covered by an NPDES permit shall file a written petition concurrently with the commission and the surface water bureau of the department. The petition shall contain, at a minimum, the following information:

(1) petitioner's name and address;

(2) identity of the piscicide and the period of time (not to exceed five years) or number of applications for which approval is requested;

(3) documentation of registration under FIFRA and NMPCA and certification that the petitioner intends to use the piscicide according to the label directions, for its intended function;

(4) target and potential non-target species in the treated waters and adjacent riparian area, including threatened or endangered species;

(5) potential environmental consequences to the treated waters and the adjacent riparian area, and protocols for limiting such impacts;

(6) surface water of the state proposed for treatment;

(7) results of pre-treatment survey;

(8) evaluation of available alternatives and justification for selecting piscicide use;

(9) post-treatment assessment monitoring protocol; and

(10) any other information required by the commission.

B. Within thirty days of receipt of the petition, the department shall review the petition and file a recommendation with the commission to grant, grant with conditions or deny the petition. The recommendation shall include reasons, and a copy shall be sent to the petitioner by certified mail.

C. The commission shall review the petition and the department's recommendation and ~~shall~~ within 90 days of receipt of the department's recommendation may hold a public hearing in the locality affected by the proposed use in accordance with Adjudicatory Procedures, 20.1.3 NMAC. In addition to the public notice requirements in Adjudicatory Procedures, 20.1.3 NMAC, the petitioner shall provide written notice to:

(1) local political subdivisions;

(2) local water planning entities;

(3) local conservancy and irrigation districts; and

(4) local media outlets, except that the petitioner shall only be required to publish notice in a newspaper of circulation in the locality affected by the proposed use.

D. In a hearing provided for in this Section or, if no hearing is held, in a commission meeting, the registration of a piscicide under FIFRA and NMPCA shall provide a rebuttable presumption that the determinations of the EPA Administrator in registering the piscicide, as outlined in 7 U.S.C. Section 136a(c)(5), are valid. For purposes of this Section the rebuttable presumptions regarding the piscicide include:

(1) Its composition is such as to warrant the proposed claims for it;

(2) Its labeling and other material submitted for registration comply with the requirements of FIFRA and NMPCA;

(3) It will perform its intended function without unreasonable adverse effects on the environment; and

(4) When used in accordance with all FIFRA label requirements it will not generally cause unreasonable adverse effects on the environment.

(5) "Unreasonable adverse effects on the environment" has the meaning provided in FIFRA, 7 U.S.C. Section 136(bb): "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide."

E. After a public hearing or commission meeting, if no hearing is held, the commission may grant the petition in whole or in part, may grant the petition subject to conditions, or may deny the petition. In granting any petition in whole or part or subject to conditions, the commission shall require the petitioner to implement post-treatment assessment monitoring and provide notice to the public in the immediate and near downstream vicinity of the application prior to and during the application.

F. Any person whose application is covered by a NPDES permit shall provide written notice to local entities as described in 20.6.4.16 subsection C (1) to (4) and subsection (E) and implement post-treatment assessment monitoring within the application area.

[20.6.4.16 NMAC - Rn, Paragraph (6) of Subsection F of 20.6.4.12 NMAC, 05-23-05; A, 05-23-05; A, XX-XX-XX]

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MEMORANDUM

TO: Kris Pintado, Standards, Planning, and Reporting Team Leader

FROM: Bryan Dail and Gary Schiffmiller, Environmental Scientists

DATE: January 30, 2014

SUBJECT: Triennial Review – Gila River Segment Description and Associated Specific Conductivity Criteria

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Introduction and Purpose

The purpose of this memo is to address a geographic error in the New Mexico Administrative Code identifying segment-specific criteria for specific conductivity in tributaries of the Gila River.

Background and Problem Description

The segment description in New Mexico's Water Quality Standards, 20.6.4.503 NMAC, misidentifies a perennial reach of the West Fork Gila River. Correcting the description requires the associated specific conductivity criterion also be evaluated. The 20.6.4.503 NMAC currently states:

20.6.4.503 GILA RIVER BASIN - All perennial tributaries to the Gila river above and including Mogollon creek.

A. Designated Uses: domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 µS/cm or less for the **main stem of the Gila river above Gila hot springs** and 400 µS/cm or less for other reaches; 32.2°C (90°F) or less in the east fork of the Gila river and Sapillo creek below Lake Roberts; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.
[20.6.4.503 NMAC - Rp 20 NMAC 6.1.2503, 10-12-00; A, 05-23-05; A, 12-01-10]

Segment Description: The current language indicates a segment-specific criterion (for specific conductivity) on the **main stem Gila River above Gila hot springs**. However, this portion of the segment (i.e., above and below the Gila Hot Springs to the confluence with the East Fork Gila River) is identified on USGS maps as the West Fork of the Gila River (see Figure 1 below). The segment description should be corrected to be consistent with USGS maps of the Gila River system.

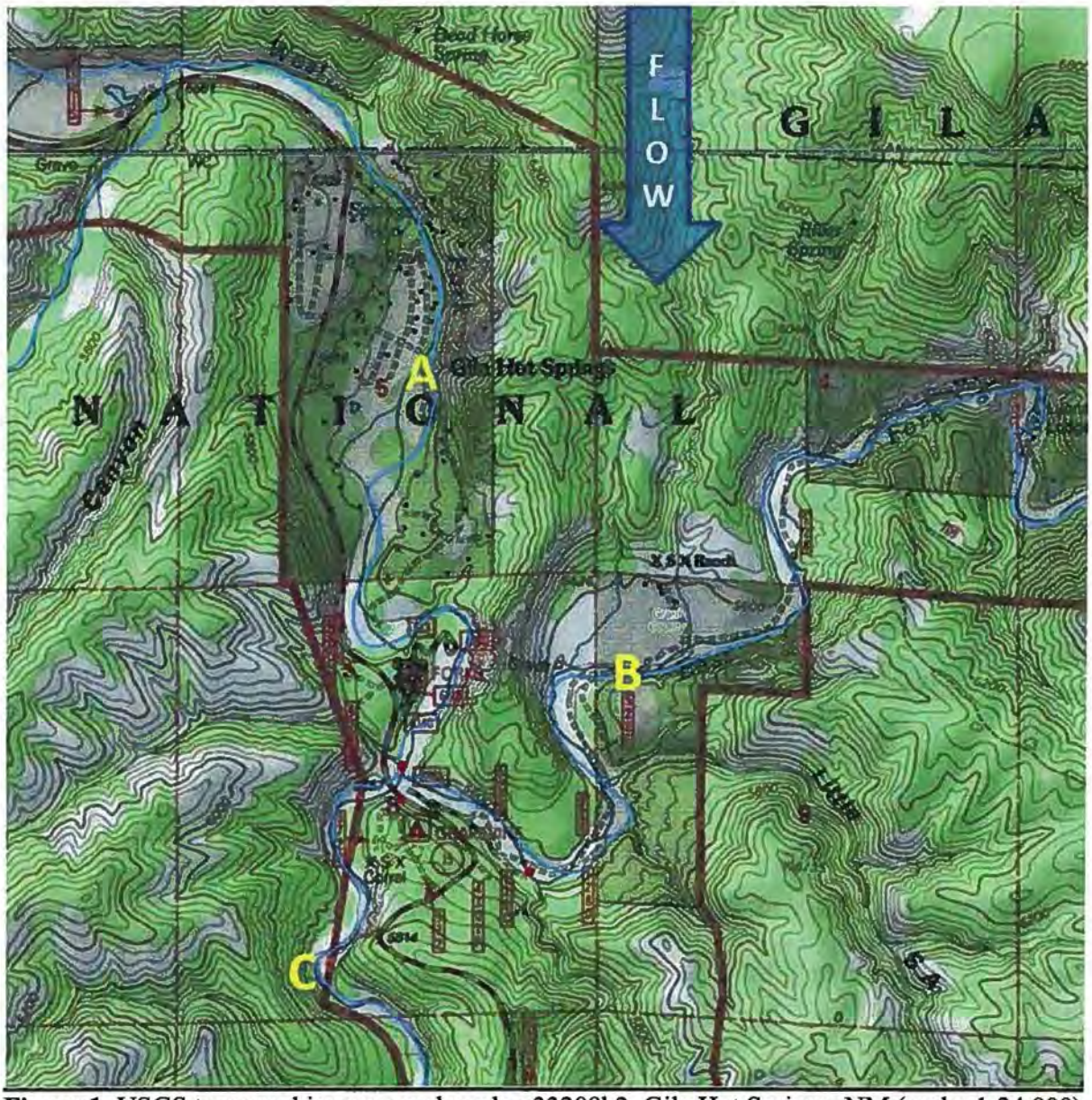

Figure 1. USGS topographic map quadrangle o33208b2, Gila Hot Springs, NM (scale: 1:24,000) showing the West Fork Gila River at Gila Hot Springs (A) the East Fork Gila River (B) and below the confluence of the W. Fork and E. Fork forming the Gila River (C). Red dots (•) indicate SWQB Water Quality sampling sites.

The roadway paralleling this segment of the West Fork Gila River is also identified on maps as "W Fork Road" (see Figure 2 below).

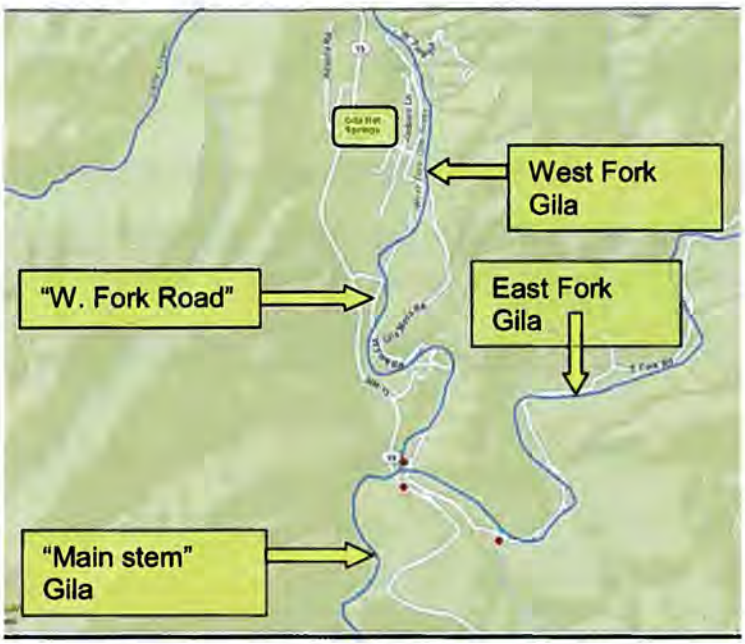

Figure 2. Road map with labels showing W Fork Gila River, W. Fork Rd, East Fork Gila River, E. Fork Rd. and main stem Gila River. Red dots (•) indicate SWQB Water Quality sampling sites.

Specific Conductivity Revision

The language misidentifying a segment of the West Fork Gila River as "main stem" has been present since the New Mexico Water Quality Standards were first adopted and criteria for specific conductivity (SC) have been part of this segment since 1976. As a statement of basis was not available, the presumption is that the influence of Gila Hot Springs Complex (GHSC; a series of geothermal springs near the town of Gila Hot Springs) was considered to be a possible contributor to high specific conductivity downstream of its confluence with the West Fork Gila River. Specific conductivity of thermal waters is often many times that of cold spring-fed, snow melt and rain-fed waters, and data exist for several hot springs in the Gila area. To evaluate the assignment of SC criteria to the West Fork Gila River segment, previously misidentified as the main stem Gila River, SWQB investigated the water quality data for hot springs in the area (Table 1a) and the West Fork Gila River below the GHSC and summarized the available data (Table 1b).

Data indicate that the relatively small volume of GHSC water entering the West Fork Gila River does not increase SC in the West Fork Gila River appreciably. West Fork Gila River below the GHSC maintains a SC well below 300 µS/cm (Table 1b). The average SC is 214 µS/cm and the maximum is 259 µS/cm. The total flow of GHSC waters to the West Fork Gila River has been documented as an average of 0.44 cfs; the GHSC main source has a rate of 0.17 cfs at peak flow (Schwab et al., 1982; Lund et al., 1991; Witcher 2002;). Average annual flow at the most

upstream available gage in the Gila watershed, Gila River near Gila, NM (090430500), was 156 cfs (1929-2012). Thus, even at the lowest recorded flows, the addition of higher specific conductivity water from GHSC is minimal, and the existing segment-specific SC criterion (400 µS/cm) below this source does not reflect actual conditions. While the average SC measured below GHSC (214±27 µS/cm) is different from the average SC measured above the confluence (165±22 µS/cm), both are consistently well below a 300 µS/cm criterion including standard deviation around the mean.

Table 1a. Specific conductivity (µS/cm) of grab samples at select hot springs in the Gila drainage (Summers, 1972)

Water body	Specific conductivity* 1	Specific conductivity 2	Specific conductivity 3	Specific conductivity 4
Hot Springs				
Gila Hot Springs (W. Fork Gila)	640	560	620	590
Hot Springs (E. Fork Gila)	560	560	581	574
Hot Springs (M. Fork Gila)	720	735	771	762

Table 1b. Specific conductivity (µS/cm) of grab samples at select water quality grab samples in Gila River tributaries performed by the Surface Water Quality Bureau

Water body	Specific conductivity* 1	Specific conductivity 2	Specific conductivity 3	Specific conductivity 4
Gila tributaries				
West Fk Gila River (bel GHSC)	204	239	259	204
Middle Fk Gila River (abv W. Fk Gila)	105	255	171	247
East Fk Gila River (abv Gila River)	213	221	319	313

*SC measurements are reported in µS/cm; river samples were conducted by SWQB and are from 4 grab sample taken between March and October of 2011; Hot Springs sampling was reported in W.K. Summers, 1972 as measured by several contract labs (1 through 4). Data in green highlight that the West Fork Gila River is consistently able to attain the "300 or below" SC criteria.

In addition, assessed perennial tributaries to the West Fork Gila (Middle Fork Gila) all consistently show that SC is below 300 µS/cm (Table 2).

Table 2. Specific conductivity (µS/cm) of tributaries of the West Fork Gila River (Middle Form Gila and tributaries thereto) performed by the Surface Water Quality Bureau

Water Body:	Middle Fork Gila	Iron Creek	Gilita Creek	Willow Creek
Specific Conductivity (µS/cm ±SD*)	215±21.1	99±5.0	95±0.9	78±0.8

*SD= Standard deviation of the mean

Additional tributaries to the West Fork Gila River, (White Creek, Turkey Feather Creek and Cub Creek) are not currently assessed, however their combined influence on the West Fork are such that West Fork Gila SC below these tributaries is well below the 300 µS/cm criteria (Table 1b).

The segment specific SC of 400 µS/cm for all other perennial tributaries (other than the West Fork Gila River and its tributaries) above and including Mogollon creek is appropriate given SWQB's most recent survey data for those tributaries (Table 3).

Table 3. Specific conductivity statistics for East Fork, Middle Fork and main stem Gila River and tributaries; SWQB data from 2005 and 2011 surveys.

Specific Conductivity (µS/cm)	E. Fork Gila River (abv Gila River)	Gila River (abv Turkey Creek.)	Sapillo Creek	Turkey Creek	Middle Fork Gila River (abv West Fork Gila River)	Beaver Creek
Average:	286	324	336	298	216	304
Max:	319	326	368	301	250	306

Recommended Revisions

To be consistent with USGS maps and local knowledge; the segment description should be revised as follows (strikeout indicates a change). According to analyses of SC and flow data, the West Fork Gila River and its tributaries currently maintain SC criteria of 300 µS/cm. The segment specific SC of 400 µS/cm for all other perennial tributaries (other than the West Fork Gila River and its tributaries) upstream of and including Mogollon Creek is appropriate.

20.6.4.503 GILA RIVER BASIN - All perennial tributaries to the Gila river ~~above~~ upstream of and including Mogollon creek.

A. Designated Uses: domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance of 400 µS/cm or less for all perennial tributaries except West Fork Gila and perennial tributaries thereto, specific conductance of 300 µS/cm or less. ~~main stem of the Gila river above Gila hot springs and 400 µS/cm or less for other reaches~~; 32.2°C (90°F) or less in the east fork of the Gila river and Sapillo creek below Lake Roberts; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

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