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Volume: Issue: Publication date: Number of pages: (ALD Use Only) Sequence No.

Issuing agency name and address: Agency DFA code:

Contact person's name: Phone number: E-mail address:

Type of rule action: New ☐ Amendment ☒ Repeal ☐ Emergency ☐ Renumber ☐ (ALD Use) Recent filing date:

Title number: Title name:

Chapter number: Chapter name:

Part number: Part name:

Amendment description (If filing an amendment): Amendment's NMAC citation (If filing an amendment):

Are there any materials incorporated by reference? Yes ☐ No ☒ Please list attachments or Internet sites if applicable.

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Specific statutory or other authority authorizing rulemaking:

74-6-4(D) NMSA 1978;
74-6-6 NMSA 1978; and
Section 9 of 20.6.4 NMAC.

Notice date(s): Hearing date(s): Rule adoption date: Rule effective date:

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**Concise Explanatory Statement For
Rulemaking Adoption:**

Findings required for rulemaking adoption:

Findings MUST include:

- Reasons for adopting rule, including any findings otherwise required by law of the agency, and a summary of any independent analysis done by the agency;
- Reasons for any change between the published proposed rule and the final rule; and
- Reasons for not accepting substantive arguments made through public comment.

See attached Statement of Reasons and Concise Explanatory Statement.

Issuing authority (If delegated, authority letter must be on file with ALD):

Name:

Bruce Thomson

Check if authority has been delegated

☐

Title:

Water Quality Control Commission Chair

Signature: (BLACK ink only OR Digital Signature)

Date signed:

Signed by:

Bruce Thomson

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**STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION**

**IN THE MATTER OF:
THE PETITION TO AMEND THE STANDARDS
FOR INTERSTATE AND INTRASTATE SURFACE WATERS
20.6.4. NMAC**

No. WQCC 24-31 (R)

**Triad National Security, LLC,
Newport News Nuclear BWXT-Los Alamos, LLC,
and U.S. Department of Energy, Office of
Environmental Management Los Alamos Field Office,**

Petitioners.

**WATER QUALITY CONTROL COMMISSION'S STATEMENT OF REASONS AND
FINAL ORDER FOR ADOPTION OF AMENDMENTS TO 20.6.4 NMAC**

A duly constituted quorum of the Water Quality Control Commission ("Commission" or "WQCC") having met on January 14, 2025, in public meeting to deliberate and issue its decision on proposed amendments to the Commission's Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC ("Part 4") to add site-specific water quality criteria for copper for stream segments on the Pajarito Plateau, issues this Statement of Reasons and Final Order.

STATEMENT OF REASONS

I. Jurisdictional Authority and Statutory and Regulatory Requirements

1. Section 304(a)(1) of the federal Clean Water Act ("CWA"), 33 U.S.C. § 1314(a)(1), provides:

The Administrator [of EPA], after consultation with appropriate Federal and State agencies and other interested persons, shall develop and publish, . . . criteria for water quality accurately reflecting the latest scientific knowledge (A) on the kind and extent of all identifiable effects on health and welfare including, but not limited to, plankton, fish, shellfish, wildlife, plant life, shorelines, beaches, esthetics, and recreation which may be expected from the presence of pollutants in any body of water, including ground water; (B) on the concentration and dispersal of pollutants, or their byproducts, through biological, physical, and chemical processes; and (C) on the effects of pollutants on biological community diversity, productivity, and stability, including information on the factors

affecting rates of eutrophication and rates of organic and inorganic sedimentation for varying types of receiving waters.

2. Ambient water quality criteria developed under Section 304(a) of the CWA provide guidance to states and tribes in adopting water quality criteria into their water quality standards under Section 303(c) of the CWA, 33 U.S.C. § 1313(c).

3. A water quality standard “defines the goals for a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses”. 40 C.F.R. § 131.2.

4. The Commission is the State’s water pollution control agency and is directed by the federal Clean Water Act and NMSA 1978, § 74-6-4(D) to adopt and amend water quality standards for surface waters of the State “based on credible scientific data and other evidence appropriate under the Water Quality Act,” in accordance with the Water Quality Act (“WQA”), NMSA 1978, §§ 74-6-1 to -17, and the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC..

5. The WQA provides that “[i]n making standards, the commission shall give weight it deems appropriate to all facts and circumstances, including the use and value of the water for water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial and other purposes...”. *See* NMSA 1978, § 74-6-4(D).

6. The WQCC has adopted water quality standards for surface waters in New Mexico at 20.6.4 NMAC. Those standards include criteria for perennial, intermittent, and ephemeral waters on the Pajarito Plateau, including waters within the boundaries of the Los Alamos National Laboratory (“LANL”). *See* 20.6.4.98, 126, 127, 128, and 140 NMAC.

7. The standards also establish water quality criteria that will protect the designated uses of a water body. *See, e.g.,* 20.6.4.900 NMAC.

8. 40 C.F.R. § 131.11(b)(1)(ii) provides that states and tribes may adopt water quality criteria that have been modified to reflect site-specific conditions.

9. The Commission's procedures for adoption of numeric site-specific criteria are provided at 20.6.4.10(F) NMAC.

10. 20.6.4.10(F)(1) and (2) NMAC provide:

(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 G 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....

11. Consistent with the WQA, 20.6.4.10(F)(3) NMAC allows for "any person" to petition the commission to adopt site-specific criteria and sets forth the following requirements for a petition:

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."

12. Finally, 20.6.4.10(F)(4) NMAC provides that "[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 G of 20.6.4.10 NMAC.”

13. Adoption of amendments to the State’s surface water quality standards must comply with the substantive and procedural requirements of Section 74-6-6 of the WQA and with the procedural requirements of 20.1.6 NMAC for rulemakings before the Commission.

14. New Mexico caselaw provides:

In adopting a new rule, an administrative agency is required to provide a statement of reasons for doing so. Although formal findings are not required, the record must indicate the reasoning of the Commission and the basis on which it adopted the rule. The Commission need not state its reasons for adopting each provision in a rule or respond to all concerns raised in testimony; such a requirement would be unduly onerous and unnecessary for the purposes of appellate review. [The courts] require only that the public and the reviewing courts are informed as to the reasoning behind the rule.

Earthworks’ Oil & Gas Accountability Project v. New Mexico Oil Conservation Comm’n, 2016-NMCA-055, ¶ 12, 374 P.3d 710 (citations omitted).

II. Petition to Amend 20.6.4.900 NMAC to Add Copper Site-Specific Water Quality Criteria for Specified Waters in the Pajarito Plateau

15. Pursuant to the WQA and the Commission’s regulations, Triad National Security, LLC (“Triad”), Newport News Nuclear BWXT-Los Alamos, LLC (“N3B”), and the United States Department of Energy, Office of Environmental Management Los Alamos Field Office (“EM-LA”) (collectively “Petitioners”) initiated this proceeding on May 23, 2024 by filing a Petition for

Rulemaking to amend the New Mexico WQCC's Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC ("Part 4").

16. The Petition asked the WQCC to adopt site-specific water quality criteria ("SSWQC") developed using the copper biotic ligand model ("BLM") and site-specific water chemistry to incorporate the latest scientific information in setting copper criteria for aquatic life and to reflect copper bioavailability under varying water chemistry conditions on the Pajarito Plateau.

17. Petitioners' proposed changes to 20.6.4.900 NMAC were as follows:

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:

....

I. Hardness-dependent acute and chronic aquatic life criteria for metals are calculated using the following equations, excluding copper (Cu) criteria for the Pajarito plateau surface waters as described in paragraph 4 of this subsection. The criteria are expressed as a function of hardness (as mg CaCO₃/L). ...

....

(4) Copper criteria for Pajarito plateau surface waters: from Guaje canyon in the north to the Rito de los Frijoles watershed in the south, from their headwaters to their confluence with the Rio Grande and all tributaries and streams thereto is as follows. For purposes of this Section, dissolved organic carbon (DOC) is expressed in units of milligrams carbon per liter (mg C/L); and hardness is expressed in units of mg/L as CaCO₃. In waters that contain DOC concentrations greater than 29.7 mg/L, a value of 29.7 mg/L shall be used in the equation. In waters that contain hardness concentrations greater than 207 mg/L, a value of 207 mg/L shall be used in the following equations.

(a) Acute aquatic life criteria: The equation to calculate acute criteria in µg/L is $\exp(-22.914 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$.

(b) Chronic aquatic life criteria: The equation to calculate chronic criteria in µg/L is $\exp(-23.391 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$.

J. **Use-specific numeric criteria.**

(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, and M of this section.

Pollutant	CAS Number	DWS	Irr/Irr storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Copper, dissolved	7440-50-8	1300	200	500		a	a		

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

(a) Where the letter “a” is indicated in a cell, the criterion is ~~hardness-based~~ on receiving water characteristics and can be referenced in Subsection I of 20.6.4.900 NMAC.

....

18. The Petition reflected the culmination of Petitioners’ data collection and analysis, as well as agency and public engagement spanning many years.

19. Mr. Nicholas R. Maxwell, a non-petitioning party, entered an appearance on May 24, 2024, and participated in the rulemaking proceeding.

20. The New Mexico Environment Department (“NMED” or “Department”), a non-petitioning party, entered its appearance on July 11, 2024, and subsequently participated in the rulemaking proceeding.

21. The Petition came before the Commission for consideration during its regularly scheduled meeting on July 9, 2024. After duly considering the Petition, and being otherwise sufficiently advised in the premises, the Commission determined that a public hearing should be held on the Petition in accordance with 20.1.6.200(C) NMAC.

22. Petitioners filed to supplement the Petition on July 16, 2024, pursuant to a directive from the Commission at its July 9, 2024 public meeting and 20.1.6.200 NMAC, to add a copy of the entire rule with the proposed changes, indicating the language to be added or deleted.

23. On July 26, 2024, the Commission issued an Order Designating Hearing Officer. In the Order, the Commission designated Felicia Orth as the Hearing Officer for the public hearing

with all powers and duties prescribed or delegated by the Commission under the WQA and 20.1.6.100 NMAC.

24. On August 2, 2024, the Hearing Officer issued a Pre-Hearing Order, setting the rulemaking proceeding for a public hearing to begin on October 8, 2024, and continue through October 9, 2024, as necessary to hear all testimony, evidence, and public comment.

25. Following discussion at a regularly scheduled WQCC meeting, the Commission rescheduled the public hearing to January 14, 2025. The Hearing Officer entered a Second Pre-Hearing Order on September 11, 2024, establishing the procedures for conducting the hearing and setting forth the relevant deadlines.

26. On December 20, 2024, Petitioners and NMED submitted their respective Notices of Intent to Present Technical Testimony at the public hearing.

27. No Party filed Notice of Intent to Present Rebuttal Testimony.

III. Public Notice and Hearing

28. Notice of the rescheduled public hearing was timely given in accordance with all relevant federal and State laws and regulations. **NMED Exhibits 9, 10, 11, 12, 13, and 14.**

29. NMED provided affidavits of publication of public notice for the hearing for the *Albuquerque Journal*, *Los Alamos Daily Post*, and the *New Mexico Register*. **NMED Exhibits 11 and 14.**

30. NMED completed the “provide to the public” notice requirements outlined in 20.1.6.7(P) NMAC on or before October 16, 2024. **NMED Exhibits 1 and 9.**

31. A hybrid public hearing was held on January 14, 2025 and conducted in-person in Room 321 at the New Mexico State Capitol, 411 S. Capitol Street, in Santa Fe, New Mexico and remotely via the WebEx platform.

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32. The Commission duly heard and considered testimony on behalf of Petitioners and NMED and allowed opportunity for any member of the general public to testify at the public hearing, and to offer non-technical exhibits in connection with their testimony, or to submit a written statement for the record, in lieu of providing oral testimony at the hearing.

33. Hearing Officer Orth conducted the public hearing in a fair and equitable manner, providing a reasonable opportunity for all persons to be heard and allowing all interested persons a reasonable opportunity to submit data, views or arguments orally and in writing, and to examine the Parties' individual witnesses.

34. Consistent with 20.1.6.306.A NMAC, a quorum of the Commission attended the hearing, the public notice indicated that a decision might be made at the conclusion of the hearing, and the Commission immediately deliberated and made a decision on Petitioners' proposed amendments to 20.6.4 NMAC at the conclusion of the hearing on January 14, 2025.

35. During its deliberation, the Commission expressed concern regarding how the proposed language fits within the existing standards and requested additional language that could improve clarity in the proposal without changing the scope. Tr. 192:3-193:1.

36. After deliberation among the Commission, the Commission voted to reopen the record to allow NMED to present language changes that more clearly describe the Pajarito Plateau surface waters for which the SSWQC will apply. Tr. 207:15-208:20.

37. NMED presented the following proposed alternative version of amendments to 20.6.4.900 NMAC responsive to the Commission's request:

I. Hardness-dependent acute and chronic aquatic life criteria for metals are calculated using the following equations, excluding aquatic life criteria for copper (Cu) for the Pajarito plateau surface waters in the Rio Grande basin as described in Paragraph (4) of Subsection I of 20.6.4.900 NMAC. The criteria are expressed as a function of hardness (as mg CaCO₃/L). . . .

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....

....

(4) Copper criteria for Pajarito plateau surface waters: Pajarito plateau surface waters extend from Guaje canyon in the north to the Rito de los Frijoles watershed in the south, from their headwaters to their confluence with the Rio Grande and all tributaries and streams thereto. The equations used to calculate copper criteria, for purposes of this Part, use dissolved organic carbon (DOC) in units of milligrams carbon per liter (mg C/L); and hardness in units of mg/L as CaCO₃. In waters that contain DOC concentrations greater than 29.7 mg/L, a value of 29.7 mg/L shall be used in the following equations. In waters that contain hardness concentrations greater than 207 mg/L, a value of 207 mg/L shall be used in the following equations.

(a) Acute aquatic life criteria: The equation to calculate acute criteria in µg/L is $\exp(-22.914 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$.

(b) Chronic aquatic life criteria: The equation to calculate chronic criteria in µg/L is $\exp(-23.391 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$.

J. Use-specific numeric criteria.

(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 and M of this section 20.6.4.900 NMAC.

Pollutant	CAS Number	DWS	Irr/Irr storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Copper, dissolved	7440-50-8	1300	200	500		a	a		

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

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

....

Tr. 211:18-212:9; 224:18-225:15.

38. The Hearing Officer provided opportunity for Parties to comment on NMED's alternative proposal and no objections were made. Tr. 228:24-229:9.

39. After additional deliberation, the Commission unanimously voted to adopt Petitioners' proposal to amend 20.6.4.900 NMAC, with the above modifications proposed by NMED. Tr. 245:23-247:18.

40. The above changes and edits are hereby adopted by the Commission to the extent they may not have been otherwise formally adopted during the Commission's deliberations, and insofar as these changes and edits are not contrary to or inconsistent with any formal action taken by the Commission.

41. Based upon the evidence and argument in the record, the following Statement of Reasons sets forth how the Commission considered and weighed the evidence presented and considered legal arguments in this matter with respect to adoption of changes to New Mexico's Water Quality Standards at 20.6.4 NMAC.

IV. REASONS FOR COMMISSION'S DECISION

A. Background

42. Ambient water quality criteria developed by EPA under Section 304(a) of the CWA provides guidance to states and tribes in adopting water quality criteria into their water quality standards under Section 303(c) of the CWA, 33 U.S.C. § 1313(c).

43. New Mexico's current aquatic life water quality criteria for copper stated at 20.6.4.900.I(1) & (2) NMAC is based on EPA's 1996 CWA Section 304(a) freshwater aquatic life criteria for copper. **NMED Ex. 1 (Baca) at 5; Petitioners' Ex. 4 (Fulton) at Petitioners_0440; Petitioners' Ex. 11 (EPA, 1995 Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water, EPA-820-B-96-001 (September 1996)).**

44. EPA's 1996 copper criteria were based on the following equations that consider only the effect of water hardness on copper bioavailability and toxicity:

Acute criteria for dissolved copper ($\mu\text{g/L}$) = $e^{0.9422[\ln(\text{hardness})] - 1.700} \times 0.96$ 2025 APR 10 AM 11:23

Chronic criteria for dissolved copper ($\mu\text{g/L}$) = $e^{0.8545[\ln(\text{hardness})] - 1.702} \times 0.96$

Petitioners' Ex. 4 (Fulton) at Petitioners_0440-0441.

45. In 2007, EPA updated its Section 304(a) recommended freshwater aquatic life criteria for copper to incorporate new scientific information on bioavailability and toxicity of copper. Rather than relying solely on hardness, the 2007 EPA copper criteria account for effects of multiple water chemistry parameters on the bioavailability and toxicity of copper to aquatic life using the copper biotic ligand model ("BLM"). **Petitioners' Ex. 1 (Demonstration Report) at Petitioners_0010-0012; Petitioners' Ex. 4 (Fulton) at Petitioners_0439-0440; Petitioners' Ex. 10 (EPA, Aquatic Life Ambient Freshwater Quality Criteria – Copper, EPA-822-R-07-001) (February 2007).**

46. As part of the WQCC's last Triennial Review of Part 4, WQCC 20-51(R), EPA Region 6 recommended NMED's Surface Water Quality Bureau consider updating the aquatic life criteria for copper to reflect the latest science as contained in EPA's latest criteria recommendation documents. NMED proposed to retain the current hardness-based water quality standard, in part because NMED did not have sufficient data to support statewide implementation of EPA's BLM-based criteria. However, consistent with recommendations from EPA Region 6, NMED stated that it would continue to evaluate implementation of the BLM for copper on a segment-specific basis. **NMED Ex. 1 (Baca) at 6; Petitioners' Ex. 4 (Fulton) at Petitioners_0441-0442; Petitioners' Ex. 12 at Petitioners_0828.**

47. The watersheds within the area of the Pajarito Plateau extend from the Guaje Canyon watershed in the north to El Rito de Frijoles in the south, from their headwaters to their

confluence with the Rio Grande and all tributaries and streams thereto. **Petitioners' Ex. 1 at Petitioners_0063, Map 6-1; Petitioners' Ex. 4 (Fulton) at Petitioners_0447-0448.**

48. Surface waters on the Pajarito Plateau have been extensively monitored for the parameters necessary for calculating copper criteria using the copper BLM software in accordance with EPA guidance, making it a suitable setting for adopting the EPA-recommended criteria. **Petitioners' Ex. 3 (White) at Petitioners_0424-0426; Petitioners' Ex. 4 (Fulton) at Petitioners_0443-0444.**

B. The Proposal, as Amended, Satisfies Applicable Requirements Under 20.6.4.10(F) NMAC for the Commission to Adopt Site-Specific Criteria

49. The evidence demonstrates that the copper SSWQC is based on water chemistry parameters of dissolved organic carbon (DOC), pH, and hardness, which have been demonstrated to have a strong impact on copper bioavailability pursuant to 20.6.4.10(F)(1) NMAC. **Petitioners' Ex. 4 (Fulton) at Petitioners_0447-0448.**

50. The Petition and supporting evidence identify the spatial boundaries and specific waters of the Pajarito Plateau to which the proposed copper SSWQC would apply. **Petitioners' Ex. 1 at Petitioners_0152-0153; Petitioners' Ex. 4 (Fulton) at Petitioners_0447-0448.**

51. Most waterbodies within the Pajarito Plateau are classified as ephemeral or intermittent (20.6.4.128 NMAC) and are therefore designated as providing a limited aquatic life use and subject to acute criteria only. For these waters, the acute copper SSWQC equations would be applied to protect the designated aquatic life use. Other water bodies within the Pajarito Plateau are classified as perennial (20.6.4.126 and 20.6.4.121 NMAC) and are designated as providing higher-level aquatic life uses that are subject to both acute and chronic aquatic life criteria. Intermittent surface water segments classified at 20.6.4.98 NMAC and other intermittent waters

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classified at 20.6.4.140 NMAC are designated as marginal warm water aquatic life use and are also subject to both acute and chronic aquatic life criteria. Therefore, the acute and chronic copper SSWQC equations would apply to these waters of the Pajarito Plateau, as well. **Petitioners' Ex. 3 (White) at Petitioners_0421-0423; Petitioners' Ex. 4 (Fulton) at Petitioners_0448-0449.**

52. The evidence demonstrates that the proposed copper SSWQC provide accurate calculations of EPA's copper BLM and thus will be fully protective of the designated aquatic life uses for which they will apply, consistent with EPA's current recommendations. **Petitioners' Ex. 4 (Fulton) at Petitioners_0438, 0448-0449.**

53. The Petition and supporting evidence explain the rationale for proposing the copper SSWQC is to incorporate the best available science and current EPA recommendations for copper criteria and provide a more accurate assessment of copper conditions for aquatic life uses in the Pajarito Plateau. **Petitioners' Ex. 1 at Petitioners_00009-0012; Petitioners' Ex. 3 (White) at Petitioners_0423; Petitioners' Ex. 4 (Fulton) at Petitioners_0436-0437.**

54. The methods used to notify and solicit input from potential stakeholders and from the general public in the affected area are described in the Public Involvement Plan, provided as Appendix C to the Demonstration Report and explained in the Direct Testimonies of Petitioners' witness, Dr. White, and NMED's witness, Mr. Baca. **Petitioners' Ex. 3 (White) at Petitioners_0426-0429; NMED Ex. 1 (Baca) at 10-11.**

55. The Petition and supporting evidence demonstrate that Petitioners presented and responded to the public input received. *See, e.g.* **Petitioners' Ex. 3 (White) at Petitioners_0428-0429; Petitioners' Ex. 7 and 8.**

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56. The Petition and supporting evidence present and justify the derivation of the proposed criteria. **Petitioners' Ex. 1 at Petitioners_00009-0012; Petitioners' Ex. 4 (Fulton) at Petitioners_0439-0444.**

57. Mr. Fulton and Dr. White walked through the collection of data and development of the copper SSWQC for the Pajarito Plateau. ***Id.* at Petitioners_0442-0446; Petitioners' Ex. 3 (White) at Petitioners_0424-0426.**

58. The proposed copper SSWQC is expressed as the following multiple linear regression ("MLR") equations:

Acute copper SSWQC = $\exp(-22.914 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$

Chronic copper SSWQC = $\exp(-23.391 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$

Petitioners' Ex. 4 (Fulton) at Petitioners_0444-0445.

59. The evidence demonstrates that the proposed MLR equations generate copper criteria consistent with the "Biotic Ligand Model as Described in Aquatic Life Ambient Freshwater Quality Criteria – Copper (EPA-822-R-07-001, February 2007)", which is a Commission-approved, scientifically defensible method under 20.6.4.10(F)(4)(c) NMAC. **Petitioners' Ex. 4 (Fulton) at Petitioners_0445.**

60. Petitioners' witness Mr. Fulton demonstrated that the MLR equations for copper SSWQC accurately calculate EPA's 2007 BLM-based copper criteria. **Petitioners' Ex. 4 (Fulton) at Petitioners_0444-0446.**

61. The evidence establishes precedent for expressing water quality as MLR equations; ***id.*; Petitioners' Ex. 13.**

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62. NMED supported Petitioners' proposed amendments to 20.6.4.900 NMAC:
NMED Ex. 1 (Baca).

63. The Commission finds that the testimony and conclusions of Petitioners' witnesses, Dr. White and Mr. Fulton, and NMED's witness, Mr. Baca, are credible and that the weight of evidence supports adoption of Petitioners' proposed changes to 20.6.4.900 NMAC to add SSWQC for copper for stream segments on the Pajarito Plateau (as amended at the hearing to more clearly describe the Pajarito Plateau surface waters for which the SSWQC will apply).

V. Other Matters

64. The Commission authorizes the Department to address any numbering changes, grammatical errors, or non-substantive typographical mistakes that may be necessary in connection with the final changes to the surface water quality standards adopted herein by the Commission.

65. The date of adoption of the rule shall be the date of signature of the Commission Chair below.

BASED ON THE FOREGOING REASONS, IT IS DECIDED AND ORDERED:

A. The Commission hereby approves and adopts the Petitioners' Proposed Final Rule (as amended at the hearing to more clearly describe the Pajarito Plateau surface waters for which the SSWQC will apply), with any non-substantive amendments necessary for filing with the State Records Center, in accordance with applicable State Records Center procedures.

B. This Statement of Reasons constitutes the written decision of the Commission's actions on the proposed regulatory changes in this rulemaking proceeding, and the reasons for those actions. Other written or oral statements by the Commission members are not recognized as part of the Commission's official decision or reasons.

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C. The Commission directs the Department to prepare the amendments to the Commission's surface water quality standards at 20.6.4 NMAC, titled "Standards for Interstate Surface Waters", in a format acceptable to the State Records Administrator for filing as part of the New Mexico Administrative Code. This preparation may include re-numbering and re-lettering of existing sections of the surface water quality standards and correcting any errata consistent with this Statement of Reasons.

D. The rule amendment adopted by the Commission shall become effective no less than thirty days after its filing in accordance with the provisions of the State Rules Act. NMSA 1978, Section 74-6-6(E). In accordance with 1.24.10.16(E) NMAC, no rule shall be valid and enforceable until it is filed with the Administrative Law Division and published in the *New Mexico Register*. To ensure both requirements of 1.24.10.16(E) NMAC have been met, this rule will be effective no earlier than its publication in the *New Mexico Register* or thirty days from filing with the Administrative Law Division, whichever comes later.

Issued this 8th day of April, 2025

Water Quality Control Commission

Bruce M Thomson
By: Bruce Thomson, Chair

4/8/25
Date

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This is an amendment to 20.6.4 NMAC, Section 900, effective 05/22/2025.

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.

B. Domestic water supply: Surface waters of the state designated for use as domestic water supplies shall not contain substances in concentrations that create a lifetime cancer risk of more than one cancer per 100,000 exposed persons. Those criteria listed under domestic water supply in Subsection J of this section apply to this use.

C. Irrigation and irrigation storage: the following numeric criteria and those criteria listed under irrigation in Subsection J of this section apply to this use:

- | | | |
|-----|---|------------|
| (1) | dissolved selenium | 0.13 mg/L |
| (2) | dissolved selenium in presence of >500 mg/L SO ₄ | 0.25 mg/L. |

D. Primary contact: The monthly geometric mean of *E. coli* bacteria of 126 cfu/100 mL or MPN/100 mL, a single sample of *E. coli* bacteria of 410 cfu/100 mL or MPN/100 mL, a single sample of total microcystins of 8 µg/L with no more than three exceedances within a 12-month period and a single sample of cylindrospermopsin of 15 µg/L with no more than three exceedances within a 12-month period, 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 colony forming units (CFU) or the most probable number (MPN) depending on the analytical 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 colony forming units (CFU) or the most probable number (MPN), depending on the analytical method used.

F. Livestock watering: the criteria listed in Subsection J of this section for livestock watering apply to this use.

G. Wildlife habitat: Wildlife habitat shall be free from any substances at concentrations that are toxic to or will adversely affect plants and animals that use these environments for feeding, drinking, habitat or propagation; can bioaccumulate; or might impair the community of animals in a watershed or the ecological integrity of surface waters of the state. The numeric criteria listed in Subsection J for wildlife habitat apply to this use.

H. Aquatic life: Surface waters of the state with a designated, existing or attainable use of aquatic life shall be free from any substances at concentrations that can impair the community of plants and animals in or the ecological integrity of surface waters of the state. Except as provided in Paragraph (7) of this subsection, the acute and chronic aquatic life criteria set out in Subsections I, J, K and L of this section and the human health-organism only criteria set out in Subsection J of this section are applicable to all aquatic life use subcategories. In addition, the specific criteria for aquatic life subcategories in the following paragraphs apply to waters classified under the respective designations.

(1) **High quality coldwater:** dissolved oxygen 6.0 mg/L or more, 4T3 temperature 20°C (68°F), maximum temperature 23°C (73°F), pH within the range of 6.6 to 8.8 and specific conductance a segment-specific limit between 300 µS/cm and 1,500 µS/cm depending on the natural background in the particular surface water of the state (the intent of this criterion is to prevent excessive increases in dissolved solids which would result in changes in community structure). Where a single segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature and no 4T3 temperature applies.

(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.

(3) **Marginal coldwater:** dissolved oxygen 6 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 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 mg/L or more, pH within the range of 6.6 to 9.0 and temperatures that may routinely exceed 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.

(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 toxic 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, excluding aquatic life criteria for copper (Cu) for the Pajarito plateau surface waters in the Rio Grande basin as described in Paragraph (4) of Subsection I of 20.6.4.900 NMAC. The criteria are expressed as a function of hardness (as mg CaCO₃/L). With the exception of aluminum, the equations are valid only for hardness concentrations of 0-400 mg/L. For hardness concentrations above 400 mg/L, the criteria for 400 mg/L apply. For aluminum the equations are valid only for hardness concentrations of 0-220 mg/L. For hardness concentrations above 220 mg/L, the aluminum criteria for 220 mg/L apply. Calculated criteria must adhere to the treatment of significant figures and rounding identified in *Standard Methods For The Examination Of Water And Wastewater*, latest edition, American public health association.

(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 has a pH between 6.5 and 9.0 and is filtered to minimize mineral phases as specified by the department. The equation parameters are as follows:

Metal	m_A	b_A	Conversion factor (CF)
Aluminum (Al)	1.3695	1.8308	
Cadmium (Cd)	0.9789	-3.866	$1.136672 - [(\ln \text{hardness})(0.041838)]$
Chromium (Cr) III	0.8190	3.7256	0.316
Copper (Cu)	0.9422	-1.700	0.960
Lead (Pb)	1.273	-1.460	$1.46203 - [(\ln \text{hardness})(0.145712)]$
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 has a pH between 6.5 and 9.0 and is filtered to minimize mineral phases as specified by the department. The equation parameters are as follows:

Metal	m_C	b_C	Conversion factor (CF)
Aluminum (Al)	1.3695	0.9161	
Cadmium (Cd)	0.7977	-3.909	$1.101672 - [(\ln \text{hardness})(0.041838)]$
Chromium (Cr) III	0.8190	0.6848	0.860
Copper (Cu)	0.8545	-1.702	0.960
Lead (Pb)	1.273	-4.705	$1.46203 - [(\ln \text{hardness})(0.145712)]$
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
25.0	Acute	512	0.490	183	3.64	13.9	1,880	145	0.30	45.4

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Hardness as CaCO ₃ , dissolved (mg/L)		Al	Cd	Cr III	Cu	Pb	Mn	Ni	Ag	Zn
	Chronic	205	0.253	23.8	2.74	0.541	1,040	16.1		34.4
30.0	Acute	658	0.581	212	4.32	17.0	2,000	169	0.40	53.5
	Chronic	263	0.290	27.6	3.20	0.664	1,100	18.8		40.5
40.0	Acute	975	0.761	269	5.67	23.5	2,200	216	0.66	69.5
	Chronic	391	0.360	35.0	4.09	0.916	1,220	24.0		52.7
50.0	Acute	1,320	0.938	323	6.99	30.1	2,370	260	0.98	85.2
	Chronic	530	0.426	42.0	4.95	1.17	1,310	28.9		64.5
60.0	Acute	1,700	1.11	375	8.30	36.9	2,520	304	1.3	100
	Chronic	681	0.489	48.8	5.79	1.44	1,390	33.8		76.2
70.0	Acute	2,100	1.28	425	9.60	43.7	2,650	346	1.7	116
	Chronic	841	0.549	55.3	6.60	1.70	1,460	38.5		87.6
80.0	Acute	2,520	1.46	474	10.9	50.6	2,770	388	2.2	131
	Chronic	1,010	0.607	61.7	7.40	1.97	1,530	43.0		98.9
90.0	Acute	2,960	1.62	523	12.2	57.6	2,880	428	2.7	145
	Chronic	1,190	0.664	68.0	8.18	2.24	1,590	47.6		110
100	Acute	3,420	1.79	570	13.4	64.6	2,980	468	3.2	160
	Chronic	1,370	0.718	74.1	8.96	2.52	1,650	52.0		121
200	Acute	8,840	3.43	1,000	25.8	136	3,760	842	10	300
	Chronic	3,540	1.21	131	16.2	5.30	2,080	93.5		228
220	Acute	10,100	3.74	1,090	28.2	151	3,880	912	12	328
	Chronic	4,030	1.30	141	17.6	5.87	2,140	101		248
300	Acute		5.00	1,400	37.8	208	4,300	1,190	21	434
	Chronic		1.64	182	22.9	8.13	2,380	132		329
400 and above	Acute		6.54	1,770	49.6	281	4,740	1,510	35	564
	Chronic		2.03	231	29.3	10.9	2,620	168		428

(4) **Copper criteria for Pajarito plateau surface waters:** Pajarito plateau surface waters extend from Guaje canyon in the north to the Rito de los Frijoles watershed in the south, from their headwaters to their confluence with the Rio Grande and all tributaries and streams thereto. The equations used to calculate copper criteria, for purposes of this Part, use dissolved organic carbon (DOC) in units of milligrams carbon per liter (mg C/L); and hardness in units of mg/L as CaCO₃. In waters that contain DOC concentrations greater than 29.7 mg/L, a value of 29.7 mg/L shall be used in the following equations. In waters that contain hardness concentrations greater than 207 mg/L, a value of 207 mg/L shall be used in the following equations.

(a) **Acute aquatic life criteria:** The equation to calculate acute criteria in µg/L is $\exp(-22.914 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$.

(b) **Chronic aquatic life criteria:** The equation to calculate chronic criteria in µg/L is $\exp(-23.391 + 1.017 \times \ln(\text{DOC}) + 0.045 \times \ln(\text{hardness}) + 5.176 \times \text{pH} - 0.261 \times \text{pH}^2)$.

J. Use-specific numeric criteria.

(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 and K [and L] through M of [this section] 20.6.4.900 NMAC.

Pollutant	CAS Number	DWS	Irr/Irr storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Aluminum, dissolved	7429-90-5		5,000			750 i	87 i		
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		
Chloride	1688-70-06					860,000	230,000		
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	400	
Iron	7439-89-6						1,000		
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
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						90	

Pollutant	CAS Number	DWS	Irr/Irr storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Acrolein	107-02-8	18				3.0	3.0	400	
Acrylonitrile	107-13-1	0.65						70	C
Aldrin	309-00-2	0.021				3.0		0.0000077	C,P
Anthracene	120-12-7	10,500						400	
Benzene	71-43-2	5						160	C
Benzidine	92-87-5	0.0015						0.11	C
Benzo(a)anthracene	56-55-3	0.048						0.013	C
Benzo(a)pyrene	50-32-8	0.2						0.0013	C,P
Benzo(b)fluoranthene	205-99-2	0.048						0.013	C
Benzo(k)fluoranthene	207-08-9	0.048						0.13	C
alpha-BHC	319-84-6	0.056						0.0039	C
beta-BHC	319-85-7	0.091						0.14	C
gamma-BHC (Lindane)	58-89-9	0.20				0.95		4.4	
Bis(2-chloroethyl) ether	111-44-4	0.30						22	C
Bis(2-chloro-1-methylethyl) ether	108-60-1	1,400						4,000	
Bis(2-ethylhexyl) phthalate	117-81-7	6						3.7	C
Bis(chloromethyl) ether	542-88-1							0.17	C
Bromoform	75-25-2	44						1,200	C
Butylbenzyl phthalate	85-68-7	7,000						1	C
Carbaryl	63-25-2					2.1	2.1		
Carbon tetrachloride	56-23-5	5						50	C
Chlordane	57-74-9	2				2.4	0.0043	0.0032	C,P
Chlorobenzene	108-90-7	100						800	
Chlorodibromomethane	124-48-1	4.2						210	C
Chloroform	67-66-3	57						2,000	
Chlorpyrifos	2921-88-2					0.083	0.041		
2-Chloronaphthalene	91-58-7	2,800						1,000	
2-Chlorophenol	95-57-8	175						800	
Chrysene	218-01-9	0.048						1.3	C
Demeton	8065-48-3						0.1		
Diazinon	333-41-5					0.17	0.17		
2,4-Dichlorophenoxyacetic acid	94-75-7							12,000	
Dichlorodiphenyldichloroethane (DDD)	72-54-8							0.0012	C
Dichlorodiphenyldichloroethylene (DDE)	72-55-9							0.00018	C
Dichlorodiphenyltrichloroethane (DDT)	50-29-3							0.0003	C,P
4,4'-DDT and derivatives		1.0			0.001	1.1	0.001		
Dibenzo(a,h)anthracene	53-70-3	0.048						0.0013	C
Dibutyl phthalate	84-74-2	3,500						30	
1,2-Dichlorobenzene	95-50-1	600						3,000	
1,3-Dichlorobenzene	541-73-1	469						10	
1,4-Dichlorobenzene	106-46-7	75						900	
3,3'-Dichlorobenzidine	91-94-1	0.78						1.5	C
Dichlorobromomethane	75-27-4	5.6						270	C

Pollutant	CAS Number	DWS	Irr/Irr storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
1,2-Dichloroethane	107-06-2	5						6,500	C
1,1-Dichloroethylene	75-35-4	7						20,000	
2,4-Dichlorophenol	120-83-2	105						60	
1,2-Dichloropropane	78-87-5	5.0						310	C
1,3-Dichloropropene	542-75-6	3.5						120	C
Dieldrin	60-57-1	0.022				0.24	0.056	0.000012	C,P
Diethyl phthalate	84-66-2	28,000						600	
Dimethyl phthalate	131-11-3	350,000						2,000	
2,4-Dimethylphenol	105-67-9	700						3,000	
Dinitrophenols	25550-58-7							1,000	
2,4-Dinitrophenol	51-28-5	70						300	
2,4-Dinitrotoluene	121-14-2	1.1						17	C
Dioxin	1746-01-6	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	30	
beta-Endosulfan	33213-65-9	62				0.22	0.056	40	
Endosulfan sulfate	1031-07-8	62						40	
Endrin	72-20-8	2				0.086	0.036	0.03	
Endrin aldehyde	7421-93-4	10.5						1	
Ethylbenzene	100-41-4	700						130	
Fluoranthene	206-44-0	1,400						20	
Fluorene	86-73-7	1,400						70	
Guthion	86-50-0						0.01		
Heptachlor	76-44-8	0.40				0.52	0.0038	0.000059	C
Heptachlor epoxide	1024-57-3	0.20				0.52	0.0038	0.00032	C
Hexachlorobenzene	118-74-1	1						0.00079	C,P
Hexachlorobutadiene	87-68-3	4.5						0.1	C
Hexachlorocyclohexane (HCH)-Technical	608-73-1							0.1	C
Hexachlorocyclopentadiene	77-47-4	50						4	
Hexachloroethane	67-72-1	25						1	C
Ideno(1,2,3-cd)pyrene	193-39-5	0.048						0.013	C
Isophorone	78-59-1	368						18,000	C
Malathion	121-75-5						0.1		
Methoxychlor	72-43-5						0.03	0.02	
Methyl bromide	74-83-9	49						10,000	
3-Methyl-4-chlorophenol	59-50-7							2,000	
2-Methyl-4,6-dinitrophenol	534-52-1	14						30	
Methylene chloride	75-09-2	5						10,000	C
Mirex	2385-85-5						0.001		
Nitrobenzene	98-95-3	18						600	
Nitrosamines	Various							12.4	C
Nitrosodibutylamine	924-16-3							2.2	C
Nitrosodiethylamine	55-18-5							12.4	C
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

Pollutant	CAS Number	DWS	Irr/Irr storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
N-Nitrosopyrrolidine	930-55-2							340	C
Nonylphenol	84852-15-3					28	6.6		
Parathion	56-38-2					0.065	0.013		
Pentachlorobenzene	608-93-5							0.1	
Pentachlorophenol	87-86-5	1.0				19	15	0.4	C
Phenol	108-95-2	10,500						300,000	
Polychlorinated Biphenyls (PCBs)	1336-36-3	0.50			0.014	2	0.014	0.00064	C,P
Pyrene	129-00-0	1,050						30	
1,2,4,5-Tetrachlorobenzene	95-94-3							0.03	
1,1,2,2-Tetrachloroethane	79-34-5	1.8						30	C
Tetrachloroethylene	127-18-4	5						290	C,P
Toluene	108-88-3	1,000						520	
Toxaphene	8001-35-2	3				0.73	0.0002	0.0071	C
1,2-Trans-dichloroethylene	156-60-5	100						4,000	
Tributyltin (TBT)	Various					0.46	0.072		
1,2,4-Trichlorobenzene	120-82-1	70						0.76	C
1,1,1-Trichloroethane	71-55-6	200						200,000	
1,1,2-Trichloroethane	79-00-5	5						89	C
Trichloroethylene	79-01-6	5						70	C
2,4,5-Trichlorophenol	95-95-4							600	
2,4,6-Trichlorophenol	88-06-2	32						28	C
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)	93-72-1							400	
Vinyl chloride	75-01-4	2						16	C

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

(a) Where the letter “a” is indicated in a cell, the criterion is [hardness] based on receiving water characteristics 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 and irrigation storage; LW - livestock watering; WH - wildlife habitat; HH-OO - human health-organism only; C – criteria based on cancer-causing endpoint; P - persistent toxic pollutant.

(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.

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

(i) The acute and chronic aquatic life criteria for dissolved aluminum only apply when the concurrent pH is less than 6.5 or greater than 9.0 S.U. If the concurrent pH is between 6.5 and 9.0 S.U. then the hardness-dependent total recoverable aluminum criteria in Paragraphs (1) and (2) of Subsection I of 20.6.4.900 NMAC apply.

K. The criteria for total ammonia consider sensitive freshwater mussel species in the family Unionidae, freshwater non-pulmonate snails, and *Oncorhynchus* spp. (a genus of fish in the family Salmonidae), hence further protecting the aquatic community. The total ammonia criteria magnitude is measured as Total Ammonia Nitrogen (TAN) mg/L. TAN is the sum of NH_4^+ and NH_3 . TAN mg/L magnitude is derived as a function of pH and temperature (EPA 2013).

L. The acute aquatic life criteria for TAN (mg/L) was derived by the EPA (2013) as the one-hour average concentration of TAN mg/L that shall not be exceeded more than once every three years on average. The EPA acute criterion magnitude was derived using the following equation:

$$\text{Acute TAN Criterion Magnitude for 1-hour average} = \text{MIN} \left(\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39}{1+10^{pH-7.204}} \right), \left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}} \right) \times (23.12 \times 10^{0.036(20-T)}) \right) \right)$$

T (temperature C) and pH are defined as the paired values associated with the TAN sample.

(1) Temperature and pH-dependent values of the acute TAN criterion magnitude -when *Oncorhynchus* spp. absent.

	Temperature (°C)																				
pH	0-10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	51	48	44	41	37	34	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	49	46	42	39	36	33	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	46	44	40	37	34	31	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9
6.8	44	41	38	35	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	41	38	35	32	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	38	35	33	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9	7.3
7.1	34	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	31	29	27	25	23	21	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6
7.3	27	26	24	22	20	18	17	16	14	13	12	11	10	9.5	8.7	8	7.4	6.8	6.3	5.8	5.3
7.4	24	22	21	19	18	16	15	14	13	12	11	9.8	9	8.3	7.7	7	6.5	6	5.5	5.1	4.7
7.5	21	19	18	17	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4
7.6	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9
7.8	13	12	11	10	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4	3.7	3.4	3.2	2.9	2.7	2.5
7.9	11	9.9	9.1	8.4	7.7	7.1	6.6	6	5.6	5.1	4.7	4.3	4	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	8.8	8.2	7.6	7	6.4	5.9	5.4	5	4.6	4.2	3.9	3.6	3.3	3	2.8	2.6	2.4	2.2	2	1.9	1.7
8.1	7.2	6.8	6.3	5.8	5.3	4.9	4.5	4.1	3.8	3.5	3.2	3	2.7	2.5	2.3	2.1	2	1.8	1.7	1.5	1.4
8.2	6	5.6	5.2	4.8	4.4	4	3.7	3.4	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	4.9	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1	0.96
8.4	4.1	3.8	3.5	3.2	3	2.7	2.5	2.3	2.1	2	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79
8.5	3.3	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.9	0.83	0.77	0.71	0.65
8.6	2.8	2.6	2.4	2.2	2	1.9	1.7	1.6	1.5	1.3	1.2	1.1	1	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	2.3	2.2	2	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1	0.94	0.87	0.8	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.6	1.5	1.4	1.3	1.2	1.1	1	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.4	0.37	0.34	0.32
9.0	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

M. The chronic aquatic life criteria for TAN (mg/L) was derived by the EPA (2013) as a thirty-day rolling average concentration of TAN mg/L that shall not be exceeded more than once every three years on average. In addition, the highest four-day average within the 30-day averaging period should not be more than 2.5 times the CCC (e.g., 2.5 x 1.9 mg TAN/L at pH 7 and 20°C, or 4.8 mg TAN/L) more than once in three years on average. The EPA chronic criterion magnitude was derived using the following equation:

T (temperature °C) and pH are defined as the paired values associated with the TAN sample.

Temperature (°C)		0-7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
pH	6.5	4.9	4.6	4.3	4.1	3.8	3.6	3.3	3.1	2.9	2.8	2.6	2.4	2.3	2.1	2	1.9	1.8	1.6	1.5	1.5	1.4	1.3	1.2	1.1

6.6	4.8	4.5	4.3	4	3.8	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1
6.7	4.8	4.5	4.2	3.9	3.7	3.5	3.2	3	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1
6.8	4.6	4.4	4.1	3.8	3.6	3.4	3.2	3	2.8	2.6	2.4	2.3	2.1	2	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1
6.9	4.5	4.2	4	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1
7.0	4.4	4.1	3.8	3.6	3.4	3.2	3	2.8	2.6	2.4	2.3	2.2	2	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1
7.1	4.2	3.9	3.7	3.5	3.2	3	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	1
7.2	4	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1	1	0.9
7.3	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1	1	0.9	0.9
7.4	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1	1	0.9	0.9	0.8
7.5	3.2	3	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	1	0.9	0.8	0.8	0.7
7.6	2.9	2.8	2.6	2.4	2.3	2.1	2	1.9	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.1	1.1	1	0.9	0.9	0.8	0.8	0.7	0.7
7.7	2.6	2.4	2.3	2.2	2	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6
7.8	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	1	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5
7.9	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	1	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5
8.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4
8.1	1.5	1.5	1.4	1.3	1.2	1.1	1.1	1	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4
8.2	1.3	1.2	1.2	1.1	1	1	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3
8.3	1.1	1.1	1	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
8.4	1	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
8.5	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
8.6	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
8.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
8.8	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
8.9	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
9.0	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

[20.6.4.900 NMAC - Rp 20 NMAC 6.1.3100, 10/12/2010; A, 10/11/2002; A, 5/23/2005; A, 7/17/2005; A, 12/1/2010; A, 3/2/2017; A, 4/23/2022; A, 05/22/2025]