

1 **STATE OF NEW MEXICO**  
2 **WATER QUALITY CONTROL COMMISSION**  
3  
4 **IN THE MATTER OF: PROPOSED AMENDMENTS**  
5 **TO STANDARDS FOR INTERSTATE AND**  
6 **INTRASTATE SURFACE WATERS**  
7 **20.6.4 NMAC**  
8

**WQCC 20-51(R)**

9 **REBUTTAL TESTIMONY OF KRIS BARRIOS**

10 **I. INTRODUCTION**

11 My name is Kris Barrios. I am currently employed as the Program Manager for the  
12 Monitoring, Assessment, and Standards Section for the New Mexico Environment Department  
13 (“Department” or “NMED”) Surface Water Quality Bureau (“SWQB”) and have held this position  
14 since August 2017. I have provided my resume as **NMED Exhibit 6** in the Notice of Intent  
15 (“NOI”) to present technical testimony filed with the Water Quality Control Commission  
16 (“WQCC”) on May 3, 2021. My rebuttal focuses on the direct testimonies of Dr. Bryan Dail,  
17 Barry Fulton, and David DeForest, on behalf of Triad National Security, LLC (“Triad”) and the  
18 U.S. Department of Energy-National Nuclear Security Administration (“DOE-NNSA”); David  
19 Gratson on behalf of the New Mexico Mining Association (“NMMA”); Rachel Conn and Dr.  
20 Jamie DeWitt on behalf of Amigos Bravos; and Jane DeRose-Bamman on behalf of the San Juan  
21 Water Commission (“SJWC”) concerning proposed amendments in the following Sections of  
22 20.6.4 NMAC:

- 23 • 20.6.4.7(C)(7) NMAC definition for “contaminants of emerging concern”;
- 24 • 20.6.4.7(T)(2) NMAC definition for “toxic pollutants”;
- 25 • 20.6.4.7(U)(1) NMAC definition for “unclassified waters of the state”;
- 26 • 20.6.4.11(G) NMAC applicability of human health-organism only criteria;
- 27 • 20.6.4.13(F) NMAC general criterion for toxic pollutants;

- 1 • 20.6.4.900(I) NMAC hardness-dependent numeric criteria; and
- 2 • 20.6.4.900(J) NMAC chronic aquatic life criterion for iron.

## 3 **II. REBUTTAL TESTIMONY REGARDING DEFINITION FOR** 4 **CONTAMINANTS OF EMERGING CONCERN (20.6.4.7 NMAC)**

### 5 **Summary of Triad and NNSA’s Testimony**

6 NMED’s proposed definition for “contaminants of emerging concern” (“CECs”) is  
7 consistent with the U.S. Environmental Protection Agency’s (“EPA’s”) definition provided in  
8 LANL Exhibit 49 (2020 TR LANL-00854). However, the proposed definition should be removed  
9 since the inclusion of CECs in the narrative criterion for toxic pollutants 20.6.4.13(F) NMAC is  
10 inappropriate because the proposed amendment would create regulatory uncertainty.

### 11 **Department’s Response**

12 The Department concurs that the definition proposed in 20.6.4.7(C)(7) NMAC is consistent  
13 with EPA’s definition. However, the Department stands by the need for the definition given the  
14 Department’s proposed amendment to the narrative criterion for toxic pollutants 20.6.4.13(F)  
15 NMAC. The Department’s proposed definition provides the public, regulated entities, and  
16 regulators with information on the substances considered CECs. The Department considers its  
17 proposed addition of CECs to the narrative criterion for toxic pollutants 20.6.4.13(F) NMAC  
18 appropriate as described on page 3 of my technical testimony (NMED Exhibit 2) and further in  
19 Section VI, below.

### 20 **Summary of Amigos Bravos’s Testimony**

21 Amigos Bravos supports the amendment adding a definition for CECs proposed by the  
22 Department as 20.6.4.7(C)(7) NMAC. Further, Amigos Bravos proposes the addition of “per- and  
23 polyflouroalkyl substances” (“PFAS”) and “and are not already considered “toxic pollutants” by

1 the department” to the Department’s proposed definition for CECs. The testimony of both Ms.  
2 Conn and Dr. DeWitt includes evidence of the environmental harm caused by some constituents  
3 of this class of chemicals, and the extent these compounds are present and persist in aquatic  
4 ecosystems.

5 **Department’s Response**

6 The Department concurs with the addition of “per- and polyflouroalkyl substances” to the  
7 constituents named in the proposed definition for CECs in 20.6.4.7(C)(7) NMAC based on the  
8 testimony of Ms. Conn and Dr. DeWitt. The Department has revised its proposed amendments to  
9 the State’s *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC) as submitted  
10 (NMED Exhibit 110). However, the Department disagrees with the addition of “and are not  
11 already considered “toxic pollutants” by the department” to the definition since some CECs meet  
12 the definition for “toxic pollutants” in 20.6.4.7(T)(2) NMAC. Also, the Department finds Amigos  
13 Bravos proposed language inconsistent with the Department’s proposed amendment to add CECs  
14 to the general criterion for toxic pollutants in 20.6.4.13(F) NMAC.

15 **Summary of SJWC’s Testimony**

16 On page 18 of Ms. DeRose-Bamman’s technical testimony (2020 TR SJWC-0021), she  
17 states the Department did not provide reasoning behind its proposed amendment adding  
18 “contaminants of emerging concern” to the general criterion for toxic pollutants in 20.6.4.13(F)(1)  
19 NMAC. The SJWC opposes the addition of CECs to the narrative criterion as described in  
20 testimony regarding 20.6.4.13(F)(1) NMAC; therefore, the definition in 20.6.4.7 NMAC is  
21 unnecessary.

22 **Department’s Response**

1           The Department provided the basis for the proposed amendment in its notice of intent to  
2 present technical testimony filed on May 3, 2021. The Department disagrees with SJWC’s  
3 position that the proposed amendment to 20.6.4.13(F)(1) NMAC is unwarranted and therefore  
4 rebuts that the definition for CECs is not needed.

5           **Summary of NMMA’s Testimony**

6           NMMA states on page 4 of its NOI, in an overview of potential non-technical testimony,  
7 that the Department’s proposed definition of CECs is vague, unscientific, and objectionable  
8 considering the proposed amendment adding CECs to the narrative criterion for toxic pollutants in  
9 20.6.4.13(F) NMAC.

10           **Department’s Response**

11           The Department’s proposed definition for CECs is largely consistent with the definition  
12 provided at the EPA’s website for contaminants of emerging concern (**NMED Exhibit 35**).  
13 However, as worded, the Department recognizes that the proposed definition may be interpreted  
14 to allow arbitrary assignment of the “CEC” label to substances with no demonstrated  
15 environmental harm. The Department has revised the proposed definition in its revised proposed  
16 amendments to the State’s *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC)  
17 as submitted (**NMED Exhibit 110**) to the following (including Amigos Bravos’s proposed  
18 addition of “per- and polyflouroalkyl substances”):

19           **(7) “Contaminants of emerging concern” or “CECs” refer to water contaminants**  
20 **including, but not limited to, per- and polyflouroalkyl substances, pharmaceuticals,**  
21 **and personal care products that may cause significant ecological or human health**  
22 **effects, particularly at low concentrations. CECs are generally chemical**  
23 **compounds recognized as having deleterious effects at environmental**

1 concentrations whose negative impacts have not been fully quantified and may not  
2 have regulatory numeric criteria.

3 **III. REBUTTAL TESTIMONY REGARDING THE DEFINITION OF TOXIC**  
4 **POLLUTANTS (20.6.4.7(T)(2) NMAC)**

5 **Summary of Triad and NNSA’s Testimony**

6 On page 8 of Dr. Dail’s technical testimony (2020 TR LANL-00147), he proposes an  
7 amendment to the definition of “toxic pollutant” in 20.6.4.7(T)(2) NMAC to the following:

8 “Toxic pollutant” means those pollutants or combination of pollutants [~~including~~  
9 ~~disease-causing agents, that after discharge and upon exposure, ingestion,~~  
10 ~~inhalation or assimilation into any organism, either directly from the environment~~  
11 ~~or indirectly by ingestion through food chains, will cause death, shortened life~~  
12 ~~spans, disease, adverse behavioral changes, reproductive or physiological~~  
13 ~~impairments or physical deformation in such organisms or their offspring]~~ listed by  
14 the EPA Administrator under section 307(a) of the federal Clean Water Act, 33  
15 U.S.C. § 1313(a) or in the list below.

16 **Department’s Response**

17 The Department disagrees with Dr. Dail’s proposed amendment to the definition  
18 for toxic pollutants. The current definition for toxic pollutants (20.6.4.7(T)(2) NMAC) is  
19 in agreement nearly word for word with the definition provided in Section 502 of the Clean  
20 Water Act (33 U.S. Code § 1362) (NMED Exhibit 116). Section 101(a)(3) of the CWA  
21 (33 U.S. Code § 1251(a)(3)) (NMED Exhibit 10) states “it is the national policy that the  
22 discharge of toxic pollutants in toxic amounts be prohibited.”

1 Amended as a result of the 1976 Toxics Consent Decree, Section 307(a) of the  
2 CWA requires numeric effluent limits for the priority pollutants listed in Table 1 of  
3 Committee Print Numbered 95–30 of the Committee on Public Works and Transportation  
4 of the House of Representatives, established as EPA’s Priority Pollutant List. The Priority  
5 Pollutant List of 126 substances has not been updated since 1981 and is recognized as  
6 outdated by EPA (**NMED Exhibit 117**), which considers a broader range of pollutants for  
7 the development of effluent guidelines. Dr. Dail appears to base his proposed definition  
8 for toxic pollutants on the definition of toxic pollutants in 40 C.F.R. § 122.2 (**NMED**  
9 **Exhibit 137**). Although the federal rule does contain this definition, in this case it applies  
10 specifically to substances required to have numeric effluent limits. However, as stated in  
11 40 C.F.R. § 122.44 (**NMED Exhibit 112**), numeric effluent limits must control all  
12 pollutants, not just the toxic pollutants as defined, which may be discharged and will cause,  
13 or have the reasonable potential to cause, an excursion of either numeric or narrative  
14 criteria. Relying on this list for identification of toxic pollutants in New Mexico disregards  
15 the numerous compounds recognized to have toxic effects over the past 40 years, and  
16 would leave New Mexico well behind established science. For example, EPA’s current  
17 national recommended human health criteria, published in accordance with Section 304(a)  
18 of the CWA, includes twelve toxic contaminants not included on the Priority Pollutant List.  
19 Although the Department proposes adopting the EPA’s recommended criteria for these  
20 twelve substances, they are not established in 20.6.4.900 NMAC. The Department would  
21 evaluate any proposed discharge of these substances under the toxic pollutant general  
22 criterion, 20.6.4.13(F) NMAC. Also, EPA’s Integrated Risk Information System (“IRIS”)  
23 currently contains assessments for 571 substances, many of which do not have established

1 numeric criteria guidance published by EPA, nor do they have numeric criteria adopted by  
2 New Mexico. While individual substances could be added to a toxic pollutant list, the  
3 process would be time-consuming and limit the Department’s ability to respond to new  
4 information. A list is also unnecessary given that 20.6.4.13(F)(5) NMAC requires the  
5 Department to petition the WQCC to adopt human health and aquatic life numeric criteria  
6 for toxic pollutants not listed in 20.6.4.900 NMAC after the issuance of a final NPDES  
7 permit with the selected or calculated numeric criteria.

8 **Summary of NMMA’s Testimony**

9 On page 5 of NMMA’s NOI, describing non-technical testimony, NMMA proposes  
10 an amendment to the definition of “toxic pollutant” in 20.6.4.7(T)(2) NMAC identical to  
11 that proposed by Dr. Dail. In its NOI, NMMA describes the current definition as creating  
12 regulatory uncertainty and identifies a need to provide the regulated community certainty  
13 regarding the substances regulated as toxic pollutants.

14 **Department’s Response**

15 The Department disagrees with NMMA’s proposed amendment to the definition  
16 for toxic pollutants. As with LANL’s proposal, NMMA appears to base its proposed  
17 definition on the definition for toxic pollutants in 40 C.F.R. § 122.2 (NMED Exhibit 137).  
18 The current definition for toxic pollutants (20.6.4.7(T)(2) NMAC) is entirely consistent  
19 (nearly word for word) with the definition provided in Section 502 of the Clean Water Act  
20 (33 U.S. Code § 1362) (NMED Exhibit 116). Section 101(a)(3) of the CWA (33 U.S.  
21 Code § 1251(a)(3)) (NMED Exhibit 10) states “it is the national policy that the discharge  
22 of toxic pollutants in toxic amounts be prohibited.” In its NOI, NMMA provides the  
23 citation from 40 C.F.R. § 131.11(a)(2) that provides the requirements for toxic pollutant

1 criteria under the CWA. The current regulations for determining numeric criteria for toxic  
2 pollutants not listed in 20.6.4.900 NMAC and identified in the general criterion,  
3 20.6.4.13(F)(2) through (4) NMAC, satisfy the narrative criteria requirements of 40 C.F.R.  
4 § 131.11(a)(2).

5 In all other aspects, the Department’s rebuttal response to NMMA’s non-technical  
6 testimony regarding the proposed definition for toxic pollutants is identical to the  
7 Department’s response to Dr. Bryan Dail’s testimony (**LANL Exhibit 5**).

8 **IV. REBUTTAL TESTIMONY REGARDING DEFINITION FOR UNCLASSIFIED**  
9 **WATERS OF THE STATE (20.6.4.7 NMAC)**

10 **Summary of SJWC’s Testimony**

11 On page 10 of Ms. DeRose-Bamman’s technical testimony (**2020 TR SJWC-0013**), she  
12 states that adding a definition for “unclassified waters of the state” as 20.6.4.7(U)(1) NMAC and  
13 removing the paragraph from 20.6.4.11 NMAC is unnecessary and confusing. She states that the  
14 Department does not describe how this change will achieve consistency. Only the first sentence  
15 in the proposed amendment is a definition and the remainder of the paragraph should remain in  
16 20.6.4.11 NMAC, Applicability of Water Quality Standards.

17 **Department’s Response**

18 The Department believes that definitions are appropriate in the Definitions section, 20.6.4.7  
19 NMAC, where the public and interested parties may more easily find them. Definitions embedded  
20 in other sections of 20.6.4 NMAC may be harder to find and reference. However, the Department  
21 agrees that only the first sentence in the proposed amendment belongs with the definition. The  
22 Department has revised its proposed amendments (**NMED Exhibit 110**) to retain the remaining  
23 language in the paragraph in its original location, 20.6.4.11(H) NMAC.



1           V.       **REBUTTAL TESTIMONY REGARDING APPLICABILITY OF HUMAN**  
2                           **HEALTH-ORGANISM ONLY CRITERIA (20.6.4.11(G) NMAC))**

3       **Summary of Triad and NNSA’s Testimony**

4           On page 16 of Mr. Fulton’s technical testimony (2020 TR LANL-00171), he proposes an  
5 amendment to 20.6.4.11(G) NMAC. This subsection describes the applicability of human health-  
6 organism only (HH-OO) criteria. The proposed amendment is as follows:

7           “Human health-organism only criteria in Subsection J of 20.6.4.900 NMAC apply  
8 to those waters with a designated, existing or attainable ~~[aquatic life]~~ fish  
9 consumption use. If a tributary does not have an attainable fish consumption use,  
10 then HH-OO criteria do not apply to the tributary. If the fish consumption  
11 designated use is not attained in the first downstream segment with an attainable  
12 fish consumption designated use, then the tributary should be assigned a load  
13 allocation as required by 40 CFR Part 130. ~~[When limited aquatic life is a~~  
14 designated use, the human health-organism only criteria apply only if adopted on a  
15 segment-specific basis. ~~The human health-organism only criteria for persistent~~  
16 toxic pollutants, as identified in Subsection J of 20.6.4.900 NMAC, also apply to  
17 all tributaries of waters with a designated, existing or attainable aquatic life use.]”

18           Mr. Fulton asserts that as currently worded, human health-organism only criteria should  
19 not apply to waters without fish or shellfish present due to natural low flow conditions or physical  
20 habitat.

21       **Department’s Response**

22           The Department finds the proposed amendment problematic for several reasons. First,  
23 New Mexico has not adopted a fish consumption designated use nor determined which standards

1 sections would include a fish consumption use. Second, the proposed change largely ignores  
2 connected hydrology, except for immediate tributaries, and the transport of persistent toxic  
3 pollutants (identified in 20.6.4.900(J)(1) NMAC) downstream. Third, any direct tributary of a  
4 waterbody not attaining a ‘fish consumption use’ would require a load allocation through the Total  
5 Maximum Daily Load process whether or not the tributary is impaired itself. Lastly, in certain  
6 circumstances, Mr. Fulton’s proposed amendment would add non-persistent HH-OO criteria to  
7 waterbodies with a limited aquatic life use. The Department disagrees with the proposal and finds  
8 Mr. Fulton did not provide supporting information for the amendment.

9 In addition to the deficiencies described above, the matter regarding the application of  
10 persistent toxic pollutant criteria to upstream tributaries in 20.6.4.11(G) NMAC is addressed in  
11 case law. Following the adoption of the amendments that provide much of the structure and  
12 language related to the toxic pollutant general criterion, LANL (though the Regents of the  
13 University of California) challenged the Commission’s adoption of the sentence applying  
14 persistent toxic pollutant criteria to upstream tributaries with fisheries (now described as aquatic  
15 life) designated use. In its ruling (**NMED Exhibit 132**), the Court of Appeals of the State of New  
16 Mexico found in favor of the Commission’s adoption of the rule (*The Regents of the University of*  
17 *California v. New Mexico Water Quality Control Commission*. 2004-NMCA-073, 136 N.M. 45).  
18 The Appeals Court concluded that the Commission acted in accordance with law, that the  
19 Commission provided sufficient reasoning behind its decision, that the adoption of the rule met  
20 statutory requirements, that the Commission’s based its action on substantial evidence, and, lastly,  
21 that the Commission’s action was neither arbitrary nor capricious.

1       **VI. REBUTTAL TESTIMONY REGARDING THE ADDITION OF CECs AND**  
2               **THE TOXIC POLLUTANTS IDENTIFIED IN 20.6.2 NMAC TO THE**  
3               **GENERAL CRITERIA FOR TOXIC POLLUTANTS (20.6.4.13(F) NMAC)**

4       **Summary of Triad and NNSA’s Testimony**

5               Beginning on page 6 of his technical testimony (2020 TR LANL-145), Dr. Dail states that  
6       the inclusion of CECs and the toxic pollutants identified in 20.6.2 NMAC causes uncertainty since  
7       the regulated community nor the State knows what monitoring should occur and what level is  
8       considered detrimental to aquatic life and human health. There is also uncertainty regarding the  
9       entity responsible for monitoring CECs. It is unclear why the State currently conditions permits  
10      to monitor PFAS constituents with no toxicological information and how regulators decide which  
11      dischargers are required to do so. The accepted process for adding these criteria is to adopt the  
12      EPA’s most recent CWA Section 304(a) guidance and the WQCC to state the numeric criteria and  
13      applicability (designated uses) in 20.6.4.900 NMAC. The inclusion of the reference to the toxic  
14      pollutants identified in 20.6.2 NMAC is problematic since some of these substances do not have  
15      numeric criteria. As a result of the inclusion of CECs in the proposed amendment, the regulated  
16      community will face increased uncertainty.

17              In his testimony, Dr. Dail proposes the addition of the word “duration” to the general  
18      criterion for toxic pollutants (20.6.4.13(F)(1) NMAC). Dr. Dail also proposes an amendment to  
19      20.6.4.13(F)(5) NMAC changing the 90-day timeline for petition of permit-developed criterion to  
20      the WQCC from the date of EPA’s permit issuance to the date of State certification in accordance  
21      with Section 401 of the CWA (33 U.S.C. 1341) (“401 Certification”), and removal of references  
22      to paragraphs 2, 3, and 4 of 20.6.4.13(F) NMAC.

23      **Department’s Response**

1           The Department disagrees that the proposed amendment to the general criterion for toxic  
2 pollutants in 20.6.4.13(F) NMAC leads to increased uncertainty. Whether or not specifically  
3 named, the narrative criterion currently covers CECs with harmful effects on aquatic life or human  
4 health that do not otherwise have published numeric criteria. Likewise, the Department's proposed  
5 amendment to include those contaminants listed in 20.6.2.7(T)(2) NMAC does not expand the  
6 Department's ability to regulate substances under the toxic pollutant narrative criterion; it merely  
7 clarifies that the State has already recognized the contaminants as toxic pollutants in its Ground  
8 and Surface Water Regulations (20.6.2 NMAC). The proposed addition of CECs and  
9 20.6.2.7(T)(2) NMAC toxic pollutants provides clarity to the regulated community, regulators,  
10 and the public that these substances are included but do not change the general criterion's  
11 implementation. The procedures in 20.6.4.13(F)(2) through 20.6.4.13(F)(4) NMAC ensure that  
12 EPA follows a consistent approach for the calculation of effluent limits for substances without  
13 numeric criteria in 20.6.4.900 NMAC.

14           The general criterion for toxic pollutants in 20.6.4.13(F) NMAC is a narrative criterion for  
15 harmful substances without numeric criteria in 20.6.4.900 NMAC. In addition, 20.6.4.13(F)(2)  
16 through (4) NMAC provides information regarding the methods necessary to derive numeric  
17 criteria for human health-organism only or aquatic life criteria when numeric values are not  
18 provided 20.6.4.900 NMAC nor provided as national recommended criteria in accordance with  
19 Section 304(a) of the CWA. EPA regulations in 40 C.F.R. 122.44(d)(1)(vi) (**NMED Exhibit 112**)  
20 require NPDES permits to contain effluent limits where there is no numeric criterion for a pollutant  
21 that is present in the discharge at a concentration that causes, has the reasonable potential to cause,  
22 or contributes to an excursion above a narrative criterion. These effluent limits are determined on  
23 a case by case basis as outlined in Chapter 6 (Water Quality-Based Effluent Limitation) of the

1 EPA’s NPDES Permit Writer’s Manual, available at [https://www.epa.gov/npdes/npdes-permit-](https://www.epa.gov/npdes/npdes-permit-writers-manual)  
2 [writers-manual](https://www.epa.gov/npdes/npdes-permit-writers-manual). Chapter 5 of the EPA’s NPDES Permit Writer’s Manual (Technology-Based  
3 Effluent Limitations) contains information on the derivation of technology-based effluent limits  
4 for cases when toxicological information is available. These implementation guidelines provide  
5 the regulated community a consistent approach to the interpretation of narrative criteria.

6       Regarding Dr. Dail’s proposed amendment to 20.6.4.13(F)(5) NMAC, the Department  
7 disagrees that the 401 Certification should start the 90-day timer for a WQCC petition. EPA’s  
8 issuance of a permit marks the appropriate start for the 90-day timeline to petition the WQCC. As  
9 discussed during the 2002 hearing adopting the subsection as currently written (**NMED Exhibit**  
10 **133**), changes to permit limits are possible following 401 Certification, therefore any limits  
11 described in a draft permit are not final until EPA issues the final permit. Ultimately, the  
12 Commission adopted, and EPA approved, the timeline of 90 days from permit issuance.

13       The Department also disagrees with removing the references to paragraphs 2, 3, and 4 of  
14 20.6.4.13(F) NMAC. Maintaining the paragraph references provides the applicable references  
15 within the subsection for implementation purposes specific to the the intended protection (i.e.,  
16 human health and aquatic life). Removing the paragraph references and replacing them with a  
17 general subsection reference poses implications for implementation and is therefore not supported  
18 by the Department.

19       The Department concurs with Dr. Dail’s proposed addition of the word “duration” to the  
20 general criterion for toxic pollutants in 20.6.4.13(F)(1) NMAC. The recommended criteria for  
21 toxic pollutants usually include a duration component. Although minor, this clarification may be  
22 useful in implementing the narrative criterion for certain substances. The Department has updated

1 its revised proposed amendments to 20.6.4 NMAC (**NMED Exhibit 110**) with the addition of  
2 “duration” to the general criterion for toxic pollutants in 20.6.4.13(F)(1) NMAC.

3 **Summary of SJWC’s Testimony**

4 Beginning on page 16 of Ms. DeRose-Bamman’s technical testimony (**2020 TR SJWC-**  
5 **0019**), the SJWC expresses concern that the proposed amendment expands the Department’s  
6 authority to regulate CECs and toxic pollutants listed in 20.6.2 NMAC. Ms. DeRose-Bamman  
7 states that the Department has not explained the justification for the proposal. Water quality  
8 standards must be based on sound scientific rationale and credible scientific data. Contaminants  
9 that are only “suspected to potentially have impacts” do not meet the requirement for sound or  
10 credible scientific data and should not be conflated with “toxic pollutants,” which, by definition in  
11 20.6.4.7(T)(2) NMAC, are substances that will have impacts. Further, 20.6.4.13(F) NMAC  
12 currently provides the Department the authority to regulate CECs that meet the definition of “toxic  
13 pollutants.”

14 **Department’s Response**

15 The Department disagrees that the proposed amendment expands the Department’s  
16 regulatory authority over substances without defined numeric criteria. Whether or not specifically  
17 named, the narrative criterion for toxic pollutants in 20.6.4.13(F) NMAC currently covers CECs  
18 with harmful effects on aquatic life, other organisms, or human health; or that may result in  
19 unacceptable organoleptic properties. The procedures identified in 20.6.4.13(F)(2) through (F)(4)  
20 NMAC describe how numeric criteria to protect human health and aquatic life may be derived  
21 using credible and sound scientific data. In addition, EPA regulations described in 40 C.F.R.  
22 122.44(d)(1)(vi) (**NMED Exhibit 112**) require EPA to establish effluent limits where there is no  
23 numeric criterion for a pollutant that is present in the discharge at a concentration that causes, has

1 the reasonable potential to cause, or contributes to an excursion above a narrative criterion. The  
2 EPA’s NPDES Permit Writer’s Manual, available at [https://www.epa.gov/npdes/npdes-permit-  
4 writers-manual](https://www.epa.gov/npdes/npdes-permit-<br/>3 writers-manual), provides additional information on the establishment of numeric effluent limits  
5 for narrative criteria. The Department contends that the State and EPA currently have the authority  
6 to regulate CECs and that the proposed amendment provides clarification to the regulated  
7 community and public that the general criterion for toxic pollutants includes these substances.

7 **Summary of NMMA’s Testimony**

8 On pages 4-5 of its NOI, in an overview of non-technical testimony, NMMA states that  
9 the Department’s proposed definition for CECs in 20.6.4.7(C)(7) NMAC is ill-defined and adds  
10 poorly studied contaminants to the general criterion for toxic pollutants (20.6.4.13(F)(1) NMAC).  
11 NMMA continues that the proposed definition is in conflict with the definition of toxic pollutants  
12 in 20.6.4.7(T)(2) NMAC, provides unlimited discretion to the Department in regulating any  
13 substance, and regulates these compounds without scientific backing.

14 **Department’s Response**

15 The Department has updated the proposed definition for CECs in its revised proposed  
16 amendments to 20.6.4 NMAC (**NMED Exhibit 110**), in part to address NMMA’s concerns  
17 regarding the phrase “suspected to potentially have impacts.” The Department disagrees that the  
18 proposed definition is in conflict with the definition for toxic pollutants. There are substances  
19 considered CECs that meet the definition for toxic pollutants. For example, 1,4-Dioxane, a  
20 synthetic industrial chemical, is listed as an emerging contaminant (synonymous with CEC) at  
21 EPA’s website for contaminants of concern at federal facilities (**NMED Exhibit 118**). The EPA’s  
22 IRIS lists 1,4-Dioxane as having non-carcinogenic and carcinogenic effects and provides a chronic  
23 oral reference dose of 0.03 mg/kg-day (**NMED Exhibit 119**). The Department would evaluate a

1 proposed discharge of 1,4-Dioxane consistent with the general criterion for toxic pollutants  
2 (20.6.4.13(F) NMAC).

3           The general criterion for toxic pollutants (20.6.4.13(F) NMAC) currently covers a  
4 broad range of substances that do not have established numeric criteria in 20.6.4.900 NMAC. The  
5 addition of CECs to the general criterion does not expand the Department’s regulatory authority.  
6 Given that there are specific regulatory processes identified for generating numeric criteria in  
7 20.6.4.13(F)(2) through (F)(4) NMAC, and establishing permit limits in 40 C.F.R. 122.44 (NMED  
8 **Exhibit 112**), the Department finds no evidence to suggest that it has an unfettered ability to  
9 regulate any substance. The regulation of a substance through the general criterion depends on  
10 identifying a potential discharge of the substance during the permit application/renewal process.  
11 The Department rejects the argument that regulation of CECs lacks scientific backing. The general  
12 criterion for toxic pollutants prescribes the procedure, based on the review of scientific literature,  
13 for generating a numeric criterion for a substance without published numeric criteria in either  
14 20.6.4.900 NMAC or provided in EPA national recommendations in accordance with Section  
15 304(a) of the CWA. Contaminants of emerging concern are acknowledged as substances in need  
16 of further study. However, that does not limit the Department’s ability to protect the environment  
17 as new information becomes available.

18       **VII. REBUTTAL TESTIMONY REGARDING SIGNIFICANT FIGURES FOR THE**  
19           **NUMERIC CRITERIA IDENTIFIED IN 20.6.4.900 NMAC.**

20       **Summary of NMMA’s Testimony**

21           Mr. Gratson’s technical testimony (NMMA **Exhibit 1**) relates to the treatment of  
22 significant figures and rounding of hardness-based calculated criteria in 20.6.4.900(I) NMAC. The  
23 NMMA is concerned that significant figures for numeric criteria either listed or generated from



1 equations and coefficients provided in 20.6.4.900 NMAC may exceed the precision specified in  
2 analytical method 200.7 or reported by laboratories. Specifically, EPA Method 200.7  
3 (Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled  
4 Plasma-Atomic Emission Spectrometry) analysis allows for the reporting of three significant  
5 figures at most. In comparison, 20.6.4.900 NMAC lists some numeric criteria for metals with four  
6 or five significant figures. Mr. Gratson states on page 3 of his technical testimony (**NMMA**  
7 **Exhibit 1**) that using different significant figures between laboratory reporting and standards  
8 creates an inability to compare results and causes uncertainties for the regulated community. The  
9 specific example Mr. Gratson provides is a hypothetical reported total recoverable aluminum result  
10 of 1700 µg/L versus a hardness-based acute aquatic life criterion of 1699 µg/L (at a hardness of  
11 60 mg/L CaCO<sub>3</sub>). Mr. Gratson offers two solutions to address the problem. One proposal involves  
12 changing the significant figures for numeric criteria listed in 20.6.4.900 NMAC to match the  
13 precision specified in approved analytical methods. The alternative proposed solution adds a  
14 narrative describing how to round numeric standards to a reported analytical result.

### 15 **Department's Response**

16 The Department concurs that appropriate significant figures are essential for scientific  
17 rigor, but disagrees that accuracy and precision of an individual laboratory's analytical methods  
18 should override published values determined to be protective of human health and the  
19 environment. The Department also finds rounding criteria to match a reported concentration  
20 resolution objectionable since there is a potential for abuse in "rounding into compliance." The  
21 Department does not find that a disparity between analytical and water quality standard significant  
22 figures causes uncertainty.

1           In the case of New Mexico’s hardness-based criteria in 20.6.4.900(I) NMAC, input  
2 variables and coefficients govern the appropriate number of significant figures. Following  
3 guidance provided in *Standard Methods for the Examination of Water and Wastewater, 23<sup>rd</sup>*  
4 *Edition (NMED Exhibit 120)*, the calculated criterion should have no more significant figures  
5 than the least precise input parameter. The tables in 20.6.4.900(I)(1) and (2) NMAC aid in  
6 determining numeric criteria based on the hardness-based algorithms. Although the algorithms  
7 include fixed input variables and conversion factors, the resolution of the input hardness value is  
8 dependent on the analytical precision of the reporting laboratory. Therefore, an instantaneous  
9 hardness-based water quality criterion may have fewer significant figures than the select values  
10 listed in 20.6.4.900(I)(3) NMAC.

11           The Department reviewed the significant figures for New Mexico’s hardness-based criteria  
12 and proposes updating the table values listed in 20.6.4.900(I)(3) NMAC based on a hardness  
13 precision of three significant figures. It is appropriate to report the numeric criteria provided in  
14 20.6.4.900(I)(3) NMAC at three significant figures given that a precision of three significant  
15 figures is the maximum resolution available for hardness calculated from dissolved calcium and  
16 magnesium concentrations reported using EPA Method 200.7. The exceptions are hardness-based  
17 acute criteria calculated for silver as the formula includes a conversion factor with only two  
18 significant figures.

19           The Department recognizes that an instantaneous hardness-based water quality criterion  
20 may have fewer than three significant figures than used in the reference table in 20.6.4.900(I)(3)  
21 NMAC. Therefore, the Department proposes the addition of the following sentence to  
22 20.6.4.900(I) NMAC:

1 “Calculated criteria must adhere to the treatment of significant figures and rounding  
2 identified in *Standard Methods For The Examination Of Water And Wastewater*, latest  
3 edition, American public health association.”

4 The language in *Standard Methods* regarding the handling of significant figures and rounding  
5 treats these operations in the same manner proposed by Mr. Gratson. Accordingly, the Department  
6 has revised its proposed amendments as **NMED Exhibit 110**.

7 **VIII. REBUTTAL TESTIMONY REGARDING THE EPA’S 2018 RECOMMENDED**  
8 **NATIONAL AMBIENT WATER QUALITY CRITERION FOR ALUMINUM**  
9 **(20.6.4.900 NMAC)**

10 **Summary of Triad and NNSA’s Testimony**

11 Beginning on page 4 of his testimony (2020 TR LANL-00201), Mr. DeForest discusses  
12 the Department’s proposed amendment to 20.6.4.900(I)(1) and (2) NMAC that clarifies the  
13 hardness-dependent aquatic life criterion for aluminum only applies at pH ranges of 6.5 – 9.0 and  
14 that outside that pH range, dissolved criteria of 87 µg/L chronic and 750 µg/L acute apply. Mr.  
15 DeForest disagrees with the proposed amendment, noting that the original 1988 recommended  
16 national ambient water quality criterion (“AWQC”) for aluminum was limited to a pH range of  
17 6.5 – 9.0, and, therefore, it should not apply to pH below 6.5 or above 9.0. Mr. DeForest lists four  
18 options to address the discrepancy for waters with pH outside the approved hardness-based  
19 criterion range. One option Mr. DeForest provides is adopting the EPA’s 2018 AWQC for  
20 aluminum since the recommended pH range is 5.0 – 10.5. Mr. DeForest states that the Department  
21 prefers the WQCC not adopt the 2018 AWQC for aluminum.

22 **Department’s Response**

1           The Department provides the bulk of its response to Mr. DeForest’s testimony in Jennifer  
2 Fullam’s rebuttal testimony (**NMED Exhibit 109**). Mr. DeForest is correct that the Department  
3 does not support the adoption of the 2018 AWQC for aluminum during this Triennial Review. The  
4 Department’s detailed reasoning is provided in my testimony filed with the WQCC on May 3,  
5 2021 as **NMED Exhibit 2** and summarized as follows. The Department currently does not have  
6 the resources to analyze concurrent dissolved organic carbon (“DOC”) and finds that default or  
7 ecoregional values do not capture the variability of DOC concentration in New Mexico. Also, the  
8 2018 AWQC for aluminum does not address the isolation of toxic, bioavailable forms of aluminum  
9 from terrigenous forms. The Department is working with the Department of Health Scientific  
10 Laboratory Division to build analytical capacity for DOC and is following developments in  
11 methods that may better discriminate toxic forms of aluminum. The Department cannot  
12 confidently implement the 2018 AWQC for aluminum, and adoption would be premature.

13           **IX. REBUTTAL TESTIMONY REGARDING PROPOSED IRON AQUATIC LIFE**  
14                           **CRITERIA IN 20.6.4.900 NMAC.**

15           **Summary of NMMA’s Testimony**

16           On page 7 of NMMA’s NOI, in its description of non-technical testimony, NMMA states  
17 that it supports the Department’s proposal to add chronic aquatic life use criterion for iron.  
18 However, NMMA disagrees with the Department’s use of total recoverable iron and proposes a  
19 dissolved iron criterion instead. NMMA’s reasoning is that iron bound in suspended sediment is  
20 not bioavailable, resulting in an overestimation of toxic amounts of iron reported as total iron.  
21 NMMA provides a 1993 memorandum from the EPA (**NMMA Exhibit 5/NMED Exhibit 134**)  
22 providing guidance in replacing total metals criteria with a dissolved fraction.

23           **Department’s Response**

1           The Department recognizes that a chronic aquatic life use criterion based upon total  
2 recoverable iron may be conservative since a reported concentration may contain some amount of  
3 iron that is not bioavailable. However, NMMA does not provide any data or references to  
4 determine an appropriate concentration of dissolved iron that protects aquatic life. The EPA’s  
5 1993 memo regarding implementing aquatic life metals criteria (**NMMA Exhibit 5/NMED**  
6 **Exhibit 134**) provides guidance on translating total criteria to dissolved criteria for some metals.  
7 Iron, however, is not included in the guidance. Therefore, the Department does not find any  
8 justification for the adoption of a dissolved iron criterion. The Department adheres to its proposal  
9 to adopt EPA’s recommended total recoverable iron chronic aquatic life use criterion of 1000 µg/L.

10       **X. CONCLUSIONS**

11           The Department proposes amended language for the following:

- 12       • Proposed definition for “contaminants of emerging concern” 20.6.4.7(C)(7) NMAC:  
13       revision to remove vague statements and the addition of “per- and polyflouroalkyl  
14       substances.”
- 15       • Proposed definition for “unclassified waters of the state” 20.6.4.7(U)(1) NMAC: removal  
16       of the second and third sentences of the proposed definition and reversion to their original  
17       location under Applicability of Water Quality Standards, 20.6.4.11(H) NMAC.
- 18       • General Criterion for Toxic Pollutants 20.6.4.13(F)(1): addition of the word “duration” to  
19       the general criterion for toxic pollutants.
- 20       • Hardness-dependent acute and chronic aquatic life criteria, 20.6.4.900(I) NMAC: addition  
21       of statement regarding the treatment of significant figures and rounding, update of table  
22       value criteria in 20.6.4.900(I)(3) NMAC to reflect appropriate significant figures.

1        **XI.    PROPOSED AMENDMENTS**

2            In conclusion, the Department hereby requests the Commission approve the proposed  
3 amended language to the State’s *Standards for Interstate and Intrastate Surface Waters* (20.6.4  
4 NMAC) as revised based on the testimony submitted in this matter and filed as **NMED Exhibit**  
5 **110.**

6            This concludes my rebuttal testimony.