STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF:

PROPOSED AMENDMENTS TO
STANDARDS FOR INTERSTATE AND
INTRASTATE SURFACE WATERS,
20.6.4 NMAC

No. WQCC 20-51 (R)

THE NEW MEXICO MINING ASSOCIATION'S COMMENTS ON THE PUBLIC COMMENT DRAFT OF THE NEW MEXICO ENVIRONMENT DEPARTMENT'S PROPOSED AMENDMENTS TO STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS, 20.6.4 NMAC

The New Mexico Mining Association (NMMA) hereby submits its Comments on the Public Comment Draft of the New Mexico Environment Department's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC, marked as Exhibit A, for the administrative record pursuant to NMED's *Notice of Public Comment Period and Informational Meetings Regarding the New Mexico Environment Department's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC)- Triennial Review* (November 2, 2020) and the *Extension of Public Comment Period Regarding the New Mexico Environment Department's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC)- Triennial Review* (November 25, 2020).

Respectfully Submitted,

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Certificate of Service

I hereby certify that on March 25, 2021 a copy of the foregoing pleading was filed with the WQCC hearing clerk via electronic mail to:

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New Mexico Mining Association

January 6, 2021

Via Electronic and U.S. Mail

Attn: Jennifer Fullam- 2020 Triennial Review
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Re: New Mexico Mining Association's Comments on the New Mexico Environment Department's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) – Triennial Review

Dear Ms. Fullam:

In accordance with the public notice the New Mexico Environment Department's ("NMED") Surface Water Quality Bureau ("SWQB") issued on November 2, 2020 and the notice of extension of public comment period NMED issued on November 25, 2020, the New Mexico Mining Association ("NMMA") hereby submits its comments on the SWQB's proposed amendments to the State's standards for interstate and intrastate surface waters (20.6.4 NMAC). NMMA appreciates the opportunity to provide comments on the proposed amendments.

The following comments are based on the Public Comment Draft of NMED's Proposed Amendments to 20.6.4 NMAC, issued November 2, 2020.

1) **Proposed "Climate Change" Definition (20.6.4.7(C)(4) NMAC):**

NMED proposes, in 20.6.4.7(C)(4) NMAC, to add a definition of "climate change" to the surface water regulations. It is unclear why the definition is needed, however, because no substantive standards or requirements set forth in the regulations, including in NMED's proposed draft, make use of the term "climate change." Instead, the only place NMED's proposed draft uses the term is in 20.6.4.6(D), where an objective is stated that the regulations seek to address "inherent threats to water quality due to climate change by setting water quality goals and fostering resiliency" in accordance with the Executive Order 2019-003 On Addressing Climate Change and Energy Waste Prevention.

Recommendation: While NMMA has no objection to the general statement of the objective relating to climate change, it suggests deleting the definition of "climate change" to avoid creating the misimpression that the definition serves to create some concrete function in the interpretation or administration of New Mexico's surface water regulations.

2) Proposal On "Contaminants of Emerging Concern" Definition (20.6.4.7(C)(7) NMAC):

NMED proposes, in 20.6.4.7(C)(7) NMAC, defining a new phrase, "contaminants of emerging concern," to essentially mean "generally chemical compounds that, although suspected to potentially have impacts, do not have regulatory standards, are not routinely monitored for, and the concentrations to which negative impacts are observed have not been fully studied." This open-ended definition, with its vaguely stated and unscientific operative phrase "suspected to potentially have impacts," is troublesome enough by itself. It is highly objectionable when one considers how the phrase is substantively used in NMED's proposal at 20.6.4.13(F)(1) NMAC. That provision, as proposed, would require in relevant part that "surface waters shall be free of toxic pollutants, *including but not limited to contaminants of emerging concern . . . .*" (Emphasis added.) This provision effectively could be construed as adding a broad range of ill-defined and not fully studied contaminants to the scope of "toxic pollutants" under the regulations, and worse, could create a surface water regulatory prohibition for them. There are at least three problems with this proposal. First, it creates a conflict with the actual definition of "toxic pollutant" in existing 20.6.4.7 NMAC. Second, it arguably provides unfettered discretion for NMED to decide what compounds it believes are "suspected to potentially have impacts" by unstated persons or entities. Third, it puts the regulation of contaminants of emerging concern well out ahead of the science, since by definition the compounds will not have been fully studied.

Recommendation: NMMA urges the removal of "contaminants of emerging concern" from NMED's proposal, or at least limiting its use to encouragement of further study rather than using it as part of a substantive regulatory standard and prohibition.

3) Proposed "Baseflow" and "Effluent Dominated" Definitions (20.6.4.7(B)(1), (E)(2) NMAC):

NMED proposes, in 20.6.4.7(B)(1) NMAC, to add a definition of "baseflow" to the surface water regulations. NMED also proposes in 20.6.4.7(E)(2) NMAC to add a definition of "effluent dominated." It is unclear why the definitions are needed or what purpose they are intended to serve because the two defined terms are used only in the definition section (20.6.4.7 NMAC).

The term "baseflow" is proposed to be used in the surface water regulations only in the definition of "effluent dominated." However, the proposed definition of the term includes the statement that "[b]aseflow in both scenarios [*i.e.*, under natural or effluent dominated conditions]

is critical for sustaining flow in streams and rivers over seasonal and longer timeframes." It is not clear what this statement is intended to mean is in the context of the surface water regulations.

The term "effluent dominated" is proposed to be defined but is not used elsewhere in the surface water regulations. According to the proposed definition, a tributary will be considered to be "effluent dominated" when it "has, over a 12-month average, more than three-quarters of its baseflow attributed to discharges from a permitted effluent discharge." However, there is no explanation or discussion of the basis for determining that a tributary is "effluent dominated" when it has more than three-quarters of its baseflow attributable to effluent discharges. The proposed definition also includes a statement that "[w]aters that are effluent dominated are of significant value to providing aquatic life habitat but are not intended for primary contact." The purpose and/or accuracy of this statement is vague in the context of the surface water regulations. NMED explains in its Statement of Reasons for Proposed Amendments to 20.6.4 NMAC that it is proposing to add the definition of "effluent dominated" to "provide clarity in the application of water quality standards as they pertain to certain permitted discharges." Unfortunately, the proposed definition does not appear to provide any clarity, rather it has the potential to create further confusion.

Recommendation: NMMA recommends deleting the proposed definitions of "baseflow" and "effluent dominated" pending further development of these concepts and their potential application in the context of New Mexico's surface water regulations.

4) Proposal to Amend "Toxic Pollutant" Definition (20.6.4.7(T)(2) NMAC:

The current definition of "toxic pollutant" set forth in 20.6.4.7(T)(2) NMAC creates regulatory uncertainty. The definition does not provide clarity regarding the pollutants the Department will require dischargers to address and treat as toxic. The current definition of "toxic pollutant" is not consistent with the Clean Water Act and its implementing regulations. Specifically, 40 C.F.R. § 131.11(a)(2) specifies the requirements for toxic pollutant criteria under the CWA. It provides:

> *Toxic pollutants.* States must review water quality data and information on discharges to identify specific water bodies where toxic pollutants may be adversely affecting water quality or the attainment of the designated water use or where the levels of toxic pollutants are at a level to warrant concern and must adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use. *Where a State adopts narrative criteria for toxic pollutants to protect designated uses, the State must provide information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria. Such information may be included as part of the standards or may be included in documents generated by the State in response to the Water Quality Planning and Management Regulations* (40 CFR part 130).

(Emphasis added).

Recommendation: NMMA recommends amending the definition of "toxic pollutant" as follows:

> "Toxic pollutant" means those pollutants or combination of pollutants, ~~including disease-causing agents, that after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will cause death, shortened life spans, disease, adverse behavioral changes, reproductive or physiological impairments or physical deformation in such organisms or their offspring~~ listed by the EPA Administrator under section 307(a) of the federal Clean Water Act, 33 U.S.C. § 1317(a) or in the list below.

The proposed definition would give the regulated community certainty about the pollutants it is required to address, provides the Water Quality Control Commission ("WQCC") the option of listing additional pollutants and using the certainty of an existing list is consistent with the WQCC's ground water regulations at 20.6.2.7(T)(2) NMAC.

5) Proposal to Clarify Authority to Amend a Numeric Criterion to be Less Stringent (20.6.4.10(C) NMAC):

NMMA supports the concept in 20.6.4.10(C) of proposing to allow the modification of a water quality criterion when the criterion may not "adequately reflect the local conditions and the adaptive nature of particular organisms to utilize a water without harm." However, it is not clear how such modifications may be made or supported. It is unclear whether modifications must be made as site-specific standards or through some other mechanism.

Recommendation: NMMA recommends adding more detail surrounding the mechanism for modifying water quality criterion when the criterion may not "adequately reflect the local conditions and the adaptive nature of particular organisms to utilize a water without harm."

6) Proposed Changes to Use Attainability Analysis (20.6.4.15 NMAC):

NMED explains that some of the proposed changes to its use attainability analysis ("UAA") regulation in 20.6.4.15 NMAC are to ensure consistency with federal regulations (presumably the federal water quality standard regulations at 40 C.F.R. Part 131). However, several of the changes are not consistent with the federal regulations.

For instance, the UAA regulation purports to apply to surface waters, such as ephemeral and isolated surface water features, that are not subject to federal jurisdiction because they do not qualify as "waters of the United States." In contrast, the federal regulations clarify that "water quality standards" are "provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses." 40 C.F.R. § 131.3(i).

In addition, NMED has added several provisions that appear to require that in all instances the UAA proponent determine or demonstrate the "highest attainable use" as part of a UAA. However, the definition of "highest attainable use" in the federal regulations clarifies that

"[t]here is no required highest attainable use where the State demonstrates the relevant use specified in section 101(a)(2) of the [federal Clean Water Act] and sub-categories of such a use are not attainable." 40 C.F.R. § 131.3(m) (emphasis added).The federal regulations also clarify instances when no UAA is required. *See, e.g.,* 40 C.F.R. § 131.10(k). There are no such clarifications in NMED's proposed revisions to its UAA regulation.

Recommendation: NMMA recommends that NMED (1) limit the UAA regulation and its associated "highest attainable use" requirements to waters subject to federal Clean Water Act jurisdiction (this may require other revisions throughout the proposed surface water regulations); (2) clarify the application of "highest attainable use" consistent with the federal regulations; and (3) clarify instances when no UAA is required consistent with the federal regulations.

7) Significant Figures for Numerical Limits (20.6.4.900 NMAC):

The numerical limits listed in several tables within 20.6.4.900 NMAC use three (3) or more significant figures. In several instances, e.g. the table in 20.6.4.900(I)(3) NMAC, NMED's proposed amendments to the regulations increase the number of significant figures for several numerical limits. NMMA understands these proposed changes are likely due to carrying additional significant figures based on risk value calculations; however, the commercial analytical laboratories that will be reporting sampling results will almost universally only report to two (2) significant figures. There does not appear to be any value to include three (3) or more significant figures in these tables unless guidance is provided on rounding for the commercial analytical laboratories on the requirement that they report to three significant figures.

Recommendation: NMMA recommends NMED revise the numerical limits within the tables included under 20.6.4.900 NMAC from three (3) to two (2) significant figures.

8) Proposed Amendments to Arsenic and Iron Limits (20.6.4.900(J)(1) NMAC):[1]

(a) Arsenic: NMED has proposed a reduction of the dissolved Arsenic Human Health - Organism Only (HH-OO) criteria from 9.0 µg/L to 1.4 µg/L. New Mexico has naturally high background levels of arsenic in its groundwater and surface water from geologic contributions, and ambient arsenic in many New Mexico streams exceed the proposed criteria. For example, the Jemez River, which receives inputs from geothermal springs, contains 30 – 80 µg/L of arsenic near Bernalillo and arsenic in the Rio Grande increases to greater than 5 µg/L from groundwater contributions as it flows through the Mogollon Datil volcanic field between Bernardo to below Truth or Consequences (Dunbar et al., 2002).

Lowering the arsenic HH-OO criteria below ambient levels, as NMED proposes, could result in widespread identification of New Mexico surface waters as being impaired even though these natural concentrations do not represent new or added health risks to the environment.

[1] A list of references used and referred to in NMMA's comments on NMED's proposed changes to 20.6.4.900(J)(1) NMAC are provided herewith as "Attachment A."

While 20.6.4 NMAC includes provisions contemplating background levels, significant state resources may still be required to demonstrate to the United States Environmental Protection Agency ("USEPA") and other stakeholders that the development of total maximum daily loads ("TMDLs") for many New Mexico waterways is unnecessary. The proposed amendment would also place a significant onus on municipalities and industrial dischargers to demonstrate background levels of arsenic in their discharges are just that, background levels, and are unrelated to their activities. As was documented in the early 2000's when the Safe Drinking Water Act Maximum Contaminant Limit (SDWA MCL) was lowered to 10 µg/L, arsenic is a difficult and expensive element to treat. Lowering the HH-OO criteria below background levels will eliminate the assimilative capacity of the streams, which is often essential for permittees to economically address ambient arsenic and could result in large costs for treatment systems that would rarely reduce instream arsenic levels.

In 2005 New Mexico revised the State's HHC based upon USEPA's recommendations in their 2002 National Recommended Water Quality Criteria. This included the integration of the updated national default fish consumption rate (17.5 g/day) and new cancer potency factors documented in EPA's Integrated Risk Information System ("IRIS"). In recognition that natural background levels of arsenic are higher than EPA's recommended criteria, New Mexico also adopted a New Mexico-specific arsenic HHC that followed USEPA's recommended HHC calculation methodology but utilized locally appropriate values for several of the criteria factors. This included a state specific bioconcentration factor ("BCF") and inorganic proportion factor ("IF") that were derived from fish tissue and water quality samples collected from the Rio Grande as part of a joint agency study (WQCC 2005, Wilcox 1997). NMED's proposed arsenic HH-OO criteria removes the New Mexico-specific factors in favor of EPA's recommended national values that are not representative of New Mexico waters. NMMA identifies the following concerns with the USEPA HHC criteria factors and their applicability to New Mexico waters:

i. There is substantial uncertainty surrounding the factors used to derive the arsenic HHC, most notably the Cancer Slope Factor (USEPA 2020). USEPA has been in the process of developing a new protocol to address the uncertainty around the toxicological impacts of arsenic since 2011. Its latest proposed plan for addressing the scientific uncertainties can be found in the Updated Problem Formulation and Protocol for Inorganic Arsenic IRIS Assessment published for public comment in 2019 (USEPA 2019). It is unknown when the assessment will be complete, and a more accurate Cancer Slope Factor will be published. Implementing an HHC based on a potentially inaccurate cancer potency factor introduces a high degree of uncertainty to a regulatory limit. NMED should postpone their revision to the standard based on the HHC until this uncertainty has been resolved.

ii. The USEPA's recommended BCF for arsenic is 44 l/kg (USEPA 1980, USEPA 2002). The BCF is based on toxicity tests from two species, freshwater bluegill (BCF: 4 l/kg) and saltwater eastern oyster (BCF: 350 l/kg). Because the BCF is based on only two species, and the eastern oyster BCF is two orders of magnitude larger, the

BCF is likely overestimating the health risks associated with freshwater fish consumption. Furthermore, the use of a BCF value accounts for marine species that are not present in the state calls into question the validity of applying this factor to New Mexico waters. To address this several states have revised the EPA's recommended BCF to only include applicable freshwater fish toxicity data. For instance, Oregon used a BCF value of 14, based on four publicly available toxicology studies conducted on freshwater species for their recalculation of the freshwater arsenic HHC (Oregon DEQ 2011). Similarly, New Mexico's current arsenic HH-OO criteria addressed this through the use of the state specific bioconcentration factor (BCF) that was derived from fish and water samples collected from the Rio Grande (WQCC 2005, Wilcox 1997). The resulting BCF was 4.57 l/kg, which is similar to EPA's freshwater bluegill value.

iii. USEPA developed its cancer potency toxicity factors and end points for inorganic arsenic, specifically arsenite (trivalent arsenic), because it is the form that is toxic to humans. However, the BCF is based on total arsenic present in aquatic species tissue. Toxicology studies have indicated that inorganic arsenic only represents about 10% of the total arsenic found in fish tissue (EPA 2003; Schoof and Yager 2007). This overestimates the toxicity, resulting in a significant reduction in the final HHC. To address this inconsistency several states have elected to multiply the BCF by an IF. Oregon utilized an IF of 10% when they revised their standard in 2011 and Maine utilized an IF of 30% for their sustenance fishing human health criteria in 2020. New Mexico's 2005 criteria utilized an IF of 65% based on the ratio of inorganic to total arsenic measured in the fish tissue samples.

iv. Organic and inorganic forms of arsenic are found in natural surface waters and aquatic organisms. The USEPA developed the recommended HHC specifically for trivalent arsenic, which is the toxic inorganic form. However, NMED's proposed criteria is for dissolved arsenic is a measurement of both the organic and inorganic forms of this constituent. NMED's application of toxicity data specific to inorganic arsenic to a dissolved arsenic standard is overly protective and will falsely indicate impairment when the water is dominated by the nontoxic organic arsenic species. This is particularly concerning when the HH-OO criteria is set at a very low threshold as it eliminates the potential to demonstrate non-impairment through speciation of arsenic.

NMED's proposed HH-OO criteria is an order of magnitude lower than the MCL developed by USEPA under the SDWA for finished (treated) drinking water, which was deemed protective for both public water supply systems and natural groundwater in New Mexico. It is important to acknowledge that the human water consumption rate considered in the development of the MCL far exceeds that of aquatic organisms contemplated for the HHC. Nearly half of the states nationwide use the SDWA MCL of 10 µg/L for their HHC and no other state in USEPA Region 6 has implemented an arsenic HHC that is less than the MCL. New Mexico's current

state-specific arsenic HH-OO criteria is already less than the SDWA and is suitably protective for the consumption of aquatic organisms in state waters.

Several states with naturally elevated arsenic incorporated USEPA's recommended arsenic HHC before later discovering (once analytic measurements could achieve these levels) that their surface waters routinely exceeded the criteria. This caused significant problems for municipal and industrial dischargers and resulted in the unnecessary expenditure of state resources on TMDL's, enforcement actions, and the eventual proposed revision of their arsenic HHC, with varying degrees of success.

NMMA members do not routinely monitor for aresenic, however when members have measured it in their discharges, the detection limit employed by the commercial labs is typically above the proposed HH-OO criteria. NMMA is concerned that similar detection limits may be used by other entities in the state and could be masking a more pervasive issue. NMMA respectfully requests that NMED review their arsenic dataset to ensure it is capturing arsenic concentrations at or below the proposed HH-OO criteria.

Recommendation: NMMA recommends that NMED retain the current 9 µg/L arsenic HH-OO criteria during this triennial review as it is based on state specific HHC factors that are more representative of New Mexico waters. This will provide USEPA additional time to resolve the uncertainty associated with its Cancer Slope Factor and allow NMED to solicit additional stakeholder feedback and more thoroughly evaluate the applicability of USEPA's HHC factors to New Mexico's waters. If NMED is compelled to move forward with a revision, NMMA recommends that NMED review the state's fish tissue and water quality data collected since the 2005 criteria revision to further support the state specific bioconcentration and inorganic factors.

(b) Iron: NMED has proposed a chronic aquatic life standard for iron of 1000 µg/L. NMMA supports the implementation of a chronic aquatic life standard for iron, however NMED should consider the use of an analytical method other than total recoverable. Iron is the fourth most abundant element in the earth's crust and is present in measurable amounts in soils and rocks. Streams are watercourses that convey water and sediment derived from the natural erosion of soils and rocks. The mineralized iron present in these sediments is not bioavailable and therefore non-toxic. The use of the total recoverable method dissolves non-toxic mineral phase iron particles found in these sediments, which overestimates the iron that contributes to toxicity.

Recommendation: Instead of using the total recoverable form, NMMA recommends the use of the dissolved form of iron. This aligns with USEPA's Office of Water Metals Policy, which states that the use of dissolved metals is the recommended approach for setting State Water Quality standards because the dissolved fraction more closely approximates the bioavailable fraction of metal in the water column (USEPA 1993). Several states including Arizona, Illinois, and Wyoming have adopted dissolved chronic criteria for iron into their water quality standards.

Please let me know if you would like to schedule a meeting to discuss these comments further.

Sincerely,

Mike E. Bowen

Mike E. Bowen
Executive Director

Attachment A

References used or cited in the New Mexico Mining Association's comments on NMED's proposed amendments to 20.6.4 NMAC:

1) References for NMMA's comments on proposed revisions to 20.6.4.900(J)(1)- Arsenic:

- Dunbar, N.W., Chapin, C.E., and Brandvold, L.A., 2002. Arsenic in New Mexico's Water. Earth Matters, published by the New Mexico Bureau of Geology and Mineral Resources, Volume 2, Number 2. Available at: https://geoinfo.nmt.edu/publications/periodicals/earthmatters/backissues/home.cfml?SpecificYear=2002&FromYear=&ToYear=&Volume=2&Number=2&title=&author=&keywords=&NMcounty=ANY&Submit=Search

- New Mexico Water Quality Control Commission, 2005, Statement of Reason for the Amendment of Standards, 20.6.4 NMAC. Available at:
- https://www.env.nm.gov/wp-content/uploads/sites/25/2017/06/NM-WQStandards-StatementOfReasons05-18-2005.pdf

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- USEPA, 2019. Updated Problem Formulation and Protocol for Inorganic Arsenic Integrated Risk Information System (IRIS) Assessment. EPA/635/R-19/049/ Available at: https://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=343951

- USEPA, 2020. Review and Action on Maine Water Quality Standards, 06-096 Chapter 584 Available at: https://www.epa.gov/sites/production/files/2020-06/documents/hhc_approval_decision_final.pdf

2) References for NMMA's comments on proposed revisions to 20.6.4.900(J)(1)- Iron:

- U.S. Environmental Protection Agency (USEPA). 1993. *Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria* ("Metals Policy"). Memo to Water Management Division Directors, Environmental Services Division Directors, Regions I-X. October 1993. Available at: https://www.epa.gov/wqc/office-water-policy-and-technical-guidance-interpretation-and-implementation-aquatic-life-metals