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Symbol: EPC-DO: 20-421
LAUR: 20-30513
Date: JAN 0 6 2021

Ms. Jennifer Fullam
Standards Coordinator
New Mexico Environment Department
Surface Water Quality Bureau
P.O. Box 5469
Santa Fe, NM 87502

Subject: **Triad National Security, LLC's Comments on the Public Comment Draft of NMED's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC**

Dear Ms. Fullam:

In accordance with the November 2, 2020 Public Notice, and the November 25, 2020 Extension of Public Comment Period notice, Triad National Security, LLC provides the following comments on the Public Comment Draft of the New Mexico Environment Department Surface Water Quality Bureau proposed amendments to the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC. Triad's comments are also being filed in matter WQCC 20-51(R) to NMED's public notices.

Please contact Robert Gallegos at (505) 665-0450 or at rgallegos@lanl.gov if you have questions.

Sincerely,

TAUNIA VAN VALKENBURG (Affiliate)

Digitally signed by TAUNIA VAN VALKENBURG (Affiliate)
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Taunia Van Valkenburg
Group Leader

TVV/MTS/RMG:jdm

Attachment(s): Attachment 1 Triad National Security, LLC's Comments to NMED's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC

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ATTACHMENT 1

Triad National Security, LLC's Comments to NMED's Proposed Amendments to Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC

EPC-DO: 20-421

LA-UR-20-30513

Date: JAN 0 6 2021

TRIAD NATIONAL SECURITY, LLC'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

In accordance with 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), Triad National Security, LLC ("Triad") provides the following comments on the Public Comment Draft of the New Mexico Environment Department ("NMED") Surface Water Quality Bureau's ("SWQB") *Proposed Amendments to the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC*. The public notices state that comments "are for the consideration of NMED SWQB in further developing the proposed amendments prior to the pre-hearing deadlines to submit technical testimony, and will not automatically become part of the WQCC 20-51(R) hearing record." NMED noted that comments intended to become part of the WQCC 20-51(R) hearing record should be submitted to the WQCC Hearing Administrator pursuant to 20.1.6.204(B) NMAC. Therefore, in addition to providing these comments to NMED, Triad will also file the comments with the WQCC Hearing Administrator. However, these comments are informal in nature and, as our evaluations of the proposed revisions are ongoing, we reserve the right to raise additional comment through the Triennial Review process and other mechanisms.

Triad is the prime contractor that operates the Los Alamos National Laboratory ("LANL") for the United States Department of Energy ("DOE"), National Nuclear Security Administration ("NNSA"). LANL is a federal facility located in Northern New Mexico on approximately 36 square miles of DOE-owned property. LANL is part of the nation's weapons complex, with a mission to solve national security challenges through scientific excellence. In addition to weapons work, LANL performs significant research and development in several areas including chemical and biological science, energy, information science, and Earth and space science. In connection with this work, LANL engages in industrial activities that result in discharges of effluent into the waters of the United States and to surface waters of the State of New Mexico, discharges stormwater to these waters, and holds multiple National Pollutant Discharge Elimination System (NPDES) permits. Triad or its predecessors have participated in numerous rulemaking proceedings before the WQCC, including the 2003, 2009, and 2014 Triennial Reviews.

In addition to the NNSA missions at LANL, the DOE's Office of Environmental Management ("DOE-EM") has a mission to safely, efficiently, and with full transparency, complete the cleanup of legacy contamination and waste resulting from nuclear weapons development and government-sponsored nuclear research at LANL. DOE-EM has funded this

work since October 1988. To facilitate cleanup efforts at LANL, in September 2014, the Secretary of Energy directed NNSA and EM to transition the management of EM-funded legacy cleanup work from NNSA's prime contractor to a DOE-EM contractor. The transferred legacy cleanup scope is the Los Alamos Legacy Cleanup Completion Project. In December 2017, DOE-EM awarded a contract, the Los Alamos Legacy Cleanup Contract, to Newport News Nuclear BWXT-Los Alamos, LLC ("N3B") in furtherance of DOE-EM's mission at LANL. N3B's work includes both environmental remediation and waste management and one goal is to continue to protect Northern New Mexico water quality while carrying out its work and supporting the ongoing mission of LANL. In connection with this work, N3B manages, among other things, the LANL Consent Order and the associated Individual Permit (NPDES Permit No. NM0030759) for storm water discharges.

NMED's proposals for the 2020 Triennial Review have implications for current operational and cleanup missions at LANL. Triad hereby submits the following comments to NMED's proposed revisions to 20.6.4 NMAC, *Standards for Interstate and Intrastate Surface Waters* ("WQS" or "Standards"). **Attachment 1** contains a list of references relied upon for these comments.

LANL Comment 1

Since New Mexico's most recently completed Triennial Review of Water Quality Standards (WQS) in 2017, the United States Environmental Protection Agency (EPA) has updated numerous national recommended water quality criteria, including for the protection of both aquatic life and human health, to reflect the latest scientific information and current EPA policies.

The Triennial Review process, defined in Section 303(c)(1) of the federal Clean Water Act (CWA), requires New Mexico to hold public hearings for the purposes of: (a) reviewing applicable water quality standards, and (b) modifying and adopting standards as appropriate. Water quality standards must consist of three elements: designated uses, criteria to protect those uses, and an anti-degradation policy. Protective criteria must be based on a sound scientific rationale and contain sufficient parameters or constituents to protect the designated uses. EPA has taken the position that, to ensure that water quality standards reflect current science and protect applicable designated uses, States and authorized Tribes should consider any new or updated 304(a) criteria as part of their triennial reviews.

NMED should address whether and, if so, how it has considered new or updated 304(a) criteria. In the Statement of Reasons (SOR), we recommend that NMED explain its decision on whether to include (or not include) new or updated EPA criteria released since the last revision of the NMAC criteria. This will allow interested parties to decide whether to propose any such updates during the Triennial Review process at WQCC 20-51(R) or in a separate proceeding.

LANL Comment 2

NMED proposes to add a new objective in the WQS at 20.6.4.6.D NMAC,[1] and states that the purpose of this provision is to act "[i]n accordance with Executive Order on Addressing Climate Change and Energy Waste Prevention (2019-003)." (*See*, SOR ¶ 1). However, Executive Order 2019-003 does not provide a basis for the proposed change. Executive Order 2019-003 addresses concerns relating to Green House Gas ("GHG") emissions and GHG contributions to climate change. While the Executive Order suggests that climatic changes will imperil water supplies globally, it requires NMED to take specific actions that include increasing the renewable portfolio standards and increase energy efficiency standards, and for all state agencies to evaluate the impact of climate change on their operations. The Executive Order does not otherwise create a mandate for the undertaking of any particular action and does not authorize modification to the WQS. Because the Executive Order identifies GHG as the driver of climate change, and the proposed WQS do not address GHG, we recommend that NMED withdraw the proposed change.

LANL Comment 3

NMED proposes new definitions at 20.6.4.7 NMAC, but the definitions do not define terms in either the current or proposed Standards, or are unnecessary. For the proposed new definitions for "climate change" (20.6.4.7.C(4)) and "contaminants of emerging concern" (20.6.4.7.C(7)) (COEC), LANL offers the following recommendations:

A. If NMED includes a definition for "climate change" (20.6.4.7.C(4)), then we recommend that the related definitions of "natural background" and "natural causes" and other associated language (*e.g.*, 20.6.4.11.H NMAC, *Exceptions*) should be modified or expanded to reflect the proposed definition of "climate change." Otherwise, the term "climate change" should not be included in the WQS.

B. The term COEC was added to 20.6.4.13.F(1) NMAC, *General Criteria for Toxics*, stating, "Except as provided in 20.6.4 NMAC, surface waters of the state shall be free of toxic pollutants, including but not limited to contaminants of emerging concern…." With this revision, NMED would be adding a potentially long and open-ended list of new chemicals which would decrease regulatory certainty. We recommend that this list should be limited to pollutants for which EPA has promulgated guidance (*e.g.*, CWA Section 304(a) or some other appropriate and scientifically defensible guidance) and for which New Mexico has adopted or will concurrently adopt as WQS. Because EPA has provided few, if any, numeric criteria for COECs, we recommend that NMED strike COECs from the proposed definition of toxics.

[1] All NMAC references herein are to the section numbers as proposed in NMED's attachment entitled *Proposed Amendments to the New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC* (NMED Proposed Amendments) to *The New Mexico Environment Department Surface Water Quality Bureau's Petition to Amend the Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) and Request for Hearing*, WQCC 20-51(R) (Aug 19, 2020) (NMED Petition).

Without clearly stated criteria, it would be impossible to determine compliance with the WQS for COECs or evaluate reasonable potential in the context of an NPDES permit.

LANL Comment 4

In light of NMED's proposal for new 20.6.4.13.F(1) NMAC, and in accordance with the concerns noted in **LANL Comment 3**, we propose that NMED revise the definition of "Toxic pollutant" at 20.6.4.7(2) NMAC, to be consistent with 40 CFR 131.3(d), 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. § 1313(a) or in the list below.

LANL Comment 5

NMED's proposed changes to some aquatic life use (ALU) definitions would remove or modify context that otherwise helps distinguish the seven classes already defined under the Standards. We recommend that NMED address this by adding clarifying text. For example:

A. The proposed definitions of "marginal coldwater" (20.6.4.7.M(1)) (MCW) and "limited aquatic life" (20.6.4.7.L(2)) exclude the "intermittent/low flow" hydrologic regime within their definitions, whereas "high quality coldwater" (20.6.4.7.H(3)) and "marginal warmwater" (20.6.4.7.M(2)) (MWW) retain the "perennial" and "intermittent/low flow" regimes, respectively, in their definitions. Hydrologic regimes should be included in all ALU definitions. Only three of the seven ALU definitions do not specify a hydrologic regime: coldwater, coolwater, and warmwater.

B. The proposed definition of marginal coldwater (20.6.4.7.M(1)) no longer includes a temperature value, despite there being a 20.6.4.900 NMAC, *Criteria Applicable to Existing, Designated or Attainable Uses Unless Otherwise Specified in 20.6.4.97 Through 20.6.4.899* (Section 900.H), water quality criteria (WQC) for MCW (*i.e.*, 6T3 of 25°C and max temperature of 29°C). For consistency, we recommend retaining the temperature value in the definition similar to other definitions (*e.g.*, MWW).[2]

C. The proposed MCW definition (20.6.4.7.M(1)) adds a qualitative temporal variation allowance ("…population during at least some portion of the year…"), whereas other uses lack such a temporal definition. The proposed MWW definition (20.6.4.7.M(2)) is a

[2] The MWW definition retains a temperature value (*i.e.*, "routinely exceeds 32.2°C"), which is consistent with the proposed change in the maximum temperature criterion.

possible exception, as it says, "…population on a continuous annual basis…" and "…routinely exceeds 32.2°C…." The timeframes in the proposed MCW and MWW definitions are vague and it is not clear how NMED intends to apply the WQS to temperature data in those circumstances, which reduces regulatory certainty. We recommend that NMED clarify the language in the proposed definitions, particularly the phrase, "at least some portion of the year" in 20.6.4.7.M(1) NMAC and "routinely exceed" in 20.6.4.7.M(2) NMAC and "temperatures that may routinely exceed 32.2…" in 20.6.4.900(H)(6) NMAC. We also recommend that definitions for all ALUs with a temporal variation allowance (*e.g.*, those with a 4T3 or 6T3 temperature criterion) include such language (with clarifications).

D. NMED should retain the description of hydrologic regime or state low-flow conditions as an additional characteristic associated with the Limited Aquatic Life use at 20.6.4.7.L(2) NMAC. The proposed definition of Limited Aquatic Life no longer includes a hydrologic regime and instead describes aquatic species as "selectively adapted to take advantage of naturally occurring rapid environmental changes, high turbidity, fluctuating temperature, low dissolved oxygen content or unique chemical characteristics." These physicochemical parameters are relevant, but the presence and persistence of water is equally or more important in determining the presence or type of aquatic species that may inhabit a water body. To remain inclusive of the definition's meaning, the terms ephemeral and intermittent should be retained and the term perennial added to the definition. This will better clarify that limited aquatic life designated use can apply to surface waters of differing hydrology depending on site-specific characteristics, which is part of the stated basis for NMED's proposed change. (SOR¶ 3(ii)). Under the definition as modified by our proposal, the specific hydrology provides clarity that aquatic species may be selectively adapted to take advantage of naturally occurring rapid environmental changes. At this time, for 20.6.4.7.L(2) we recommend:

> (2) "**Limited aquatic life**" as a designated use, means the surface water is capable of supporting only a limited community of aquatic life. This subcategory includes surface waters that support aquatic species selectively adapted to take advantage of naturally occurring rapid environmental changes, [~~emphemeral or intermittent water,~~] **perennial,** intermittent, ephemeral water, high turbidity, fluctuating temperature, low dissolved oxygen content or unique chemical characteristics.[3]

E. Several water quality segments (*e.g.*, 20.6.4.103 (Section 103), 20.6.4.110, and 20.6.4.114) contain multiple ALUs, but the proposed rules include no indication of which ALU criteria would apply where. For example, Section 103 lists both MCW aquatic life and warmwater aquatic life. If multiple ALUs exist in a segment, and segments are defined as,

[3] Throughout this document, red text reflects the changes to the Standards proposed by NMED in the Public Comment Draft. LANL additions to NMED's proposed changes are shown in **bolded underlined black text** and additions that serve only to retain the current Standards language are shown in regular black underlined text. Unless otherwise noted, LANL deletions to NMED's proposed changes are shown by ~~red strikethrough~~ and LANL deletions to current text in the Standards is shown by ~~black strikethrough~~. NMED's proposed deletions are show, as here, with [~~bracketed red strikethrough~~].

"…water within a segment should have the same uses, similar hydrologic characteristics or flow regimes, and natural physical, chemical and biological characteristics and exhibit similar reactions to external stresses, such as the discharge of pollutants," then a segment break is needed.

LANL Comment 6

NMED uses the term "stringent" liberally in proposed 20.6.4.10 NMAC (Section 10) and 20.6.4.15 NMAC (Section 15) regarding designated uses and Use Attainability Analyses (UAAs). Currently, the use of "stringent" in NMAC is limited to the context of numeric criteria, which we believe is more consistent with EPA guidance. More appropriate and consistent terms need to be used to distinguish the seven ALUs, not only because most of the ALUs lack consistent numeric criteria, but also because actual aquatic assemblages are not more or less "stringent" relative to one another. For example, certain aquatic species and communities will naturally select to higher temperature regimes; this does not make those communities "less stringent," though "less stringent" temperature criteria (*i.e.*, temperature criteria that allow for more heat) may apply based on the designated use. NMED should review terminology in Sections 10 and 15 and revise for accuracy. For example, we recommend that the terms "different" or "restrictive" be used, as appropriate, rather than "stringent."

LANL Comment 7

NMED explains that the proposed amendment to 20.6.4.10.B NMAC clarifies the process for amending a designated use where the existing use is more stringent. (SOR ¶ 8). The proposed language falls short. Methods for developing or performing an existing use analysis (EUA) are not included in either the *State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process* (WQMP-CPP) or the WQCC regulations, 20.6.4 NMAC. Before a EUA is used for attainability decisions, especially where the Commission has made a determination of existing uses for the waters in question and those waters are classified waters of the state, the EUA procedure should undergo a thorough vetting process that includes a review and final approval by the WQCC. We specifically suggest the following revisions to 20.6.4.10.B NMAC at this time:

> **B.** In accordance with 40 CFR 131.10(i), when an existing use, as defined in 20.6.4.7 NMAC, is more ~~stringent~~ **restrictive** than the designated use and supporting evidence[4] demonstrates the presence of that use, the designated use shall be amended to be no less ~~stringent~~ **restrictive** than the existing use. **This action can only be taken after the department has established formal procedures, through the water quality management plan continuing planning process, to amend a designated use that is found to be less restrictive than an existing use. The process described in this**

[4] Please see **LANL Comment 7** for a discussion of issues relating to "supporting evidence" in this proposed section.

section may not be used where the commission has already made a determination concerning the existing use of classified waters of the state.

Alternatively, we suggest the following adjustment:

B. In accordance with 40 CFR 131.10(i), ~~when an existing use, as defined in 20.6.4.7 NMAC, is more stringent than the designated use and supporting evidence demonstrates the presence of that use, the designated use shall be amended to be no less stringent than the existing use~~ **where the standards specify designated uses that are less restrictive than those presently being attained, the commission will revise the standards to reflect the uses actually being attained.**

LANL Comment 8

NMED proposes a new 20.6.4.10.B NMAC that describes how the WQCC will adopt an existing use based on "supporting evidence [that] demonstrates the presence of that use," where the existing use is more protective than a current designated use. While identifying existing uses is an imperative, EPA also advises that it is appropriate to describe the existing uses of a waterbody in terms of both actual use and water quality, because doing so provides the most comprehensive means of describing baseline conditions that must be protected. EPA further advises that "in identifying existing uses, it is important to have a high degree of confidence, because a state or tribe may not remove an existing use when revising designated uses, regardless of whether the existing use remains attainable." (EPA 2008). This is also important because EPA's antidegradation provisions require any CWA authorization of a discharge or activity that may result in a discharge to protect the existing use.

The proposed new Section 10.B's description of "supporting evidence" moves away from EPA guidance, as EPA has advised that it expects states and tribes "to consider the quantity, quality, and reliability of the different types of data to describe the existing use as accurately and completely as possible and to resolve any apparent discrepancies based upon that evaluation." (EPA 2008). The apparent lesser standard proposed by NMED for establishing new existing uses may also create significant regulatory uncertainty. An entity could engage, in good faith, in a lengthy and costly UAA process to demonstrate the highest attainable use. However, under new Section 10.B, NMED could subsequently, "discover" some modicum of "supporting evidence" not previously considered (or even previously considered by the WQCC and EPA, but now being reinterpreted unilaterally by NMED), then simply declare it has concluded there is a more protective existing use for a segment.

LANL Comment 9

LANL recommends the deletion of the last sentence of proposed text in Section 20.6.4.10.C NMAC. This sentence mixes "uses" and UAAs into a section about "criteria" and natural background.

LANL Comment 10

In several places in the Public Comment Draft, NMED proposes to increase the discretion held by the NMED, modifying language that directs when an action "shall" be taken and making the action discretionary. For example, proposed 20.6.4.10.C NMAC states: "When justified by sufficient data and information, a numeric [~~the~~] water quality [~~criteria~~] criterion [~~will~~] may be adopted….". Similar excess discretion is provided in the proposed changes to 20.6.4.15.D(2) NMAC, which states: "If the findings of a use attainability analysis, conducted by the department, [~~based on~~] in accordance with the department's *Hydrology Protocol* (latest edition)[~~approved by the commission,~~] demonstrates [~~to the satisfaction of the department~~]that federal Clean Water Act Section 101(a)(2) uses, that are not existing uses, are not feasible in an ephemeral water body due to the factor in 40 CFR 131.10(g)(2), the department may consider proceeding with the expedited use attainability analysis …". Her,e the "may" should be changed to "shall." Adopting such changes could allow SWQB to act unilaterally and bypass the public regulatory process. The WQCC should increase—not decrease—regulatory certainty with revisions to the Standards. We recommend that NMED retain the current language of "shall" and include nondiscretionary language in newly proposed revisions to the WQS.

LANL Comment 11

20.6.4.15 NMAC, which describes UAAs, has many proposed edits that should be closely reviewed. For example, we have identified the following potential issues:

A. The proposed additions to 20.6.4.15.A(1) NMAC and 20.6.4.15.D(2) NMAC of "that is not an existing use" and "that are not existing uses" are redundant with 20.6.4.15.B NMAC, which more clearly and accurately states that "a designated use cannot be removed if it is an existing use unless a use requiring more stringent criteria is designated." We recommend not introducing redundancy.

B. Third-party UAAs should be afforded regulatory certainty by specifying that NMED and EPA review and approval of required workplans will happen within a given timeframe (*e.g.*, within 30 days of submittal by a third party).

C. "Current use" in 20.6.4.15.E NMAC should be replaced with "existing use" to be consistent with definitions.

D. Because a UAA is not only required when removing a federal CWA Section 101(a)(2) use, but also when designating new uses, we recommend NMED consider modifying the new proposed heading for 20.6.4.15.B NMAC to "**Conducting a use attainability analysis.**"

E. For greater clarity, we suggest that NMED consider the following replacement to current 20.6.4.15.A NMAC:

"Use Attainability Analysis. A use attainability analysis must be conducted when designating uses that do not include uses specified in Section 101(a)(2) of the federal

Clean Water Act or when designating sub-categories of these uses that require less stringent criteria than previously applicable. When removing designated uses that are not Section 101(a)(2) uses, a use attainability analysis is not required."

F. We also recommend that the first sentence of 20.6.4.15.A NMAC, which defines a UAA, be slightly modified and moved to the definitions section at a new 20.6.4.7.U(2). The following is our suggestion for a new 20.6.4.7.U(2) NMAC:

"Use Attainability Analysis" means a structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the federal Clean Water Act, which include the physical, chemical, biological, and economic use removal criteria described at 40 CFR Part 131.10(g)(1)-(6).

LANL Comment 12

LANL waters categorized under 20.6.4.126 NMAC (Section 126) and 20.6.4.140 NMAC (Section 140) should be defined geographically, from origin to terminus. The spatial extents for several other waters of the state are being revised in the WQS. LANL waters should similarly be reviewed and revised as appropriate so that clear geographic boundaries corresponding to designated uses are provided. We recommend NMED confirm changes against hydrological maps created by N3B and Triad (as available) prior to making changes to reaches/segments.

LANL Comment 13

LANL supports moving some existing Section 128 (intermittent and ephemeral) waters to Section 126 (perennial) based on HP work conducted pursuant to the 2015 Joint Stipulated Agreement. The reaches should be precisely described so that clear geographic boundaries corresponding to designated uses are provided. At this time, we propose the following specific modifications:

20.6.4.126 RIO GRANDE BASIN: [-] Perennial portions of Cañon de Valle from Los Alamos ~~n~~**N**ational ~~l~~**L**aboratory (LANL) stream gage E256 upstream to Burning Ground spring, Sandia canyon from Sigma canyon upstream to LANL NPDES ~~o~~**O**utfall 001, Pajarito canyon from **0.3 miles below** Arroyo de La **Delfe at latitude 35°51'22" N longitude 106°19'34" W** upstream **to Homestead Spring, Arroyo de la Delfe from Pajarito canyon to Kieling Spring,** ~~**into**~~ Starmers gulch, ~~**and Starmers spring**~~ ~~[and]~~ Water canyon from Area-A canyon upstream to ~~**State Route 501**~~ **upper LANL boundary**, ~~and DP canyon,~~ Ancho canyon **from Rio Grande to Ancho Spring, DP canyon from 0.4 miles below DP Grade Control at latitude 35º 52' 34.01"N longitude 106º 15'52.67"W upsteam to crossing at lower Los Alamos County Boundary**~~, and additional perennial portions of Water canyon~~**.**

A. Designated uses: coldwater aquatic life, livestock watering, wildlife habitat and secondary contact.

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

LANL Comment 14

LANL supports the addition of a new Section 140 to provide more appropriate protections for certain waters on the Pajarito Plateau, based upon best available data and science. However, NMED's apparent reliance on the Lusk & MacRae, *A Water Quality Assessment of Four Intermittent Streams in Los Alamos County, New Mexico* (July 2002) (2002 LANL Water Quality Assessment)[5] to modify existing use for these waters is not appropriate. First, the WQCC has already reviewed and considered the 2002 LANL Water Quality Assessment and related testimony and has concluded that limited aquatic life and secondary contact are appropriate to protect both existing and attainable uses for Section 128 waters. Second, the further evaluation of Section 128 waters is subject to the 2015 Joint Stipulated Agreement, which contemplates application of the *Hydrology Protocol* to study LANL waters and then make a determination about whether the attainable uses are consistent with the uses listed in Section 128. If the new data provided by the HPs demonstrates that a different ALU is actually attainable for specific segments, NMED should update the designated use for those waters. NMED participated in only a limited number of all the HPs conducted at LANL since the last Triennial Review and so any sweeping statements about "all ephemeral" or "all intermittent" waters based on this limited work is not supported. Simply because some waters, especially those in the higher western elevations of LANL where NMED has focused its studies, may support a different ALU, it does not follow that all LANL classified intermittent waters have this use. LANL also has concerns that NMED may be failing to take into account the significant amount of high-quality survey data for LANL surface waters that has been developed over the past several years, which NMED must do if it is re-evaluating existing uses. If NMED uses the 2002 LANL Water Quality Assessment as its basis for asserting new existing uses that are contrary to prior existing use findings, NMED's SOR should clearly state its reliance on the document rather than on an unspecified "analysis of existing uses for these waters." SOR, ¶ 24.

LANL Comment 15

LANL recommends that any waters moved from current Section 128 to new Section 140 should include a description of each reach boundary from origin to terminus with particularity. At this time, we propose the following specific modifications:

20.6.4.140 RIO GRANDE BASIN: Non-perennial waters or portions of waters within lands managed by the DOE within LANL not specifically identified in 20.6.4.126 NMAC

[5] This document is commonly referred in various ways, including as the 2002 Use Study, the LANL Use Study, Lusk & MacRae 2002, and the USFWS Study, and is not consistently referenced in prior Triennial Review records. The document references itself as the "LANL Water Quality Assessment" and we use that reference throughout these comments.

or 20.6.4.128 NMAC including ~~but not limited to~~ intermittent portions of ~~Cañon de Valle, DP canyon,~~ Effluent canyon, ~~Fence canyon, Fish Ladder canyon, Los Alamos canyon, Martin Spring canyon~~ **S-Site canyon from MSC-16-06293 at latitude 35°50'26.952" N longitude106°19'59.016" W upstream to Martin Spring** ~~Pajarito canyon,~~ **and** Two-Mile canyon **from lower Two Mile canyon upstream to confluence with Upper Two Mile canyon** ~~and Water canyon~~. (Surface waters within lands scheduled for transfer from DOE to tribal, state or local authorities are specifically excluded.)

LANL Comment 16

In 20.6.4.98 NMAC, NMED assigns a MWW ALU to all unclassified intermittent waters of the state. Unless NMED has a sound basis based on data and science to impose a different ALU on waters NMED proposes to move from Section 128 to new Section 140, the MWW ALU should be used for new Section 140 waters. Additionally, LANL recommends that any waters moved from current Section 128 to Section 140 retain the existing use of secondary contact, as there is no evidence that primary contact is a valid existing use. Therefore, at this time, we propose the following specific modification to 20.6.4.140.A NMAC:

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

LANL Comment 17

Current Section 128 includes intermittent and ephemeral waters for LANL. NMED proposes to amend Section 128 to include only ephemeral waters. Section 128 waters should remain as ephemeral/intermittent because the Commission has already determined that Section 128 uses are appropriate for these waters. Once the available data and information is considered, we recommend that NMED follow the proper process to designate a more appropriate use for these waters. NMED's decision is based only on those Hydrology Protocols[6] where NMED was present and does not consider stream gage data, other HP data, and other high quality data compiled by LANL. Rather than take a full account of data and information available, NMED defaults reaches that are clearly ephemeral to new Section 140. We recommend any decisions on which specific stream segments should move from Section 128 to new Section 140 must be made based upon careful review and evaluation of all available data. The Public Comment Draft was distributed without conferring with LANL and there are numerous instances of stream classifications that the hydrologic data does not support and that Triad disputes. Therefore, we suggest the following specific modifications at this time:

[6] The *Hydrology Protocol* (or HP) is provided for in the WQMP-CPP (Section II and Appx C), and provides a mythology for distinguishing among ephemeral, intermittent, and perennial streams and rivers in New Mexico. It also generates documentation of the uses supported by those waters as a result of the flow regime.

20.6.4.128 RIO GRANDE BASIN: [-] Ephemeral [~~and intermittent~~] and intermittent waters or ephemeral **and intermittent** portions of waters [~~watercourses~~] within lands managed by U.S. ~~d~~Department of ~~e~~Energy (DOE) within LANL **not specifically identified in 20.6.4.126 or 20.6.4.140.** ~~identified below[, including but not limited to: Mortandad canyon, Cañada del Buey, Ancho canyon, Chaquehui canyon, Indio canyon, Fence canyon, Potrillo canyon, and portions of Cañon de Valle, Los Alamos canyon, Sandia canyon, Pajarito canyon and Water canyon not specifically identified in 20.6.4.126 NMAC].~~ (Surfacewaters within lands scheduled for transfer from DOE to tribal, state or local authorities are specifically excluded.)

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

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the acute total ammonia criteria set forth in Subsection [~~K~~]L of 20.6.4.900 NMAC ([salmonids] *Oncorhynchus* spp. absent).

~~C. Waters:~~
~~(1) Portions of Ancho canyon;~~
~~(2) Portions of Arroyo de la Delfe;~~
~~(3) Portions of Cañon de Valle;~~
~~(4) Portions of Fence canyon;~~
~~(5) Portions of Los Alamos;~~
~~(6) Portions of Martin Spring canyon;~~
~~(7) Portions of Mortandad;~~
~~(8) Portions of Pajarito canyon;~~
~~(9) Portions of Potrillo canyon;~~
~~(10) Portions of Ten Site canyon;~~
~~(11) Portions of Water canyon;~~

LANL Comment 18

LANL understands that NMED plans to rely on the 2002 LANL Water Quality Assessment in support of its proposed changes for new Section 140, and disagrees that the 2002 LANL Water Quality Assessment is an appropriate basis for determining existing uses for any LANL waters other than the four specific waters (now designated as perennial) examined under that 2002 LANL Water Quality Assessment. LANL also does not agree that the 2002 LANL Water Quality Assessment supports existing uses proposed in new Section 140. The locations in the 2002 LANL Water Quality Assessment evaluated are areas of the Laboratory known to contain persistent flowing water (Sandia, Pajarito, and Canon de Valle watercourses). All study locations are in, or adjacent to, current perennial waters (20.6.4.126 NMAC). The 2002 LANL Water Quality Assessment refers to these specific segments as intermittent; however, as the

technical testimony from the 2003 Triennial Review makes clear, these waters have different hydrologic characteristics and aquatic biota present from the majority of intermittent waters on the Pajarito Plateau. The 2002 LANL Water Quality Assessment acknowledges that other sources referred to these waters as perennial, as they are now classified. We recommend NMED evaluate the inherent limits of the data contained in the 2002 LANL Water Quality Assessment. Reliance on the 2002 LANL Water Quality Assessment at this point is not defensible for determining existing use for LANL intermittent waters. To change designated uses, NMED must consider more recent data, including information collected and presented pursuant to the 2015 Joint Stipulated Agreement, consistent with EPA guidance.

LANL Comment 19

NMED's SOR indicates that LANL's surface waters identified in new proposed Section 140 are based on an analysis of existing use and application of the *Hydrology Protocol* to classified streams as part of the 2015 Joint Stipulation between NMED, LANL, DOE and Amigos Bravos. (SOR, ¶ 24). Because the work under the 2015 Joint Stipulated Agreement is still ongoing, NMED's proposed inclusion of LANL surface waters into Section 140 is premature and contains numerous instances of stream classifications that are not supported by the hydrologic data. We recommend that NMED, in accordance with the terms of the 2015 Joint Stipulated Agreement, propose to the WQCC moving from Section 128 to Section 140 (and from Section 128 to Section 126) only those segments where the parties have reached agreement.

LANL Comment 20

There is a significant amount of high-quality survey data for LANL intermittent waters, including Level 1 and Level 2 HP data, and it is unclear from the SOR what data NMED is relying on for its proposals. The decision on which specific stream segments should be moved from Section 128 to new Section 140 must be made based upon careful review and evaluation of all available data. We recommend NMED evaluate and utilize all representative data prior to moving any stream segments into Section 140, and not invite relitigation of the WQCC's prior decisions concerning uses for these waters without providing additional evidence/data/information justifying this proposal.

LANL Comment 21

Approximately 80 miles of surface waters exist within LANL boundaries. Any NMED proposal to include LANL surface waters into Section 140 based on the 2002 LANL Water Quality Assessment is problematic because the study is based on a limited evaluation of 3 miles of perennial waters dating back to 1997 and 1998. The uses appropriate for LANL waters were hotly debated before the WQCC in the 2003 Triennial Review, when 20.6.4.128 NMAC was adopted. In fact, from 1992, after the Commission designated livestock watering and wildlife habitat uses for these waters, to the 2003 Triennial Review, the uses appropriate for these waters

was subject to differing opinions which culminated in the 1993 Settlement Agreement between DOE, LANL, and NMED (as amended in 1996) which, in turn, resulted in the 2002 LANL Water Quality Assessment. The Commission's decisions in the 2003 Triennial Review settled a decade long disagreement and now, nearly thirty years later, NMED appears to propose unraveling the entire history and agreements by declaring it has reassessed the "true" existing uses for these waters. The burden is on NMED to demonstrate that new evidence exists that warrants review, or that the WQCC's use determinations are clearly incorrect. By proposing to reach a different conclusion now based on the same information considered over decades, NMED is proposing to improperly undercut the WQCC's initial decision, which the Commission has previously refused to do in all Triennial Reviews subsequent to the 2003 Triennial Review. Rather than take this unprecedented approach, we recommended that the parties move forward under the 2015 Joint Stipulated Agreement as originally intended.

LANL Comment 22

LANL understands that NMED intends to utilize a new approach to evaluate existing uses (an existing use analysis or EUA) to support its proposed changes to Section 128. Section 128 waters are supported by a 2007 NMED Use Attainability Analysis (UAA) that has been reviewed and approved by the WQCC and EPA and defended by NMED (*see, e.g.*, 2014 Triennial Review, LANL Waters in Segment 128, NMED-SWQB Rebuttal pp. 14-22 lines 333 to 14-23 lines 341). NMED stated during the public information sessions in November 2020 that the EUA is a new procedure. Methods for developing or performing an EUA are not identified or explained in either the WQMP-CPP or the WQCC regulations, 20.6.4 NMAC. NMED has suggested that because an existing use might be "more protective" than a designated use, a less rigorous approach than the scientific study provided by a use attainability analysis is warranted. However, as described in **LANL Comment 7**, this perspective is contrary to EPA guidance that cautions a more measured, careful approach when determining existing uses irrespective of whether they are more or less protective than a designated use.

Before a new and untested existing use analysis is used for attainability decisions, especially where NMED has already performed a UAA for the waters in question and those waters are classified waters of the state, the procedure should undergo a thorough vetting process that includes a review and final approval by the WQCC. Otherwise, a new existing use analysis would, before having any process in place for such a study, establish a lower standard of rigor for determining use, without ever clearly specifying the criteria to be considered. Therefore, we suggest language be added to 20.6.4.10.B NMAC as described in **LANL Comment 6** specifying establishing a formal procedure, through the water quality management plan continuing planning process, to amend a designated use that is found to be less stringent than an existing use.

LANL Comment 23

LANL understands that NMED intends to utilize a EUA to support its proposed changes to Section 128. The EUA, as proposed, does not consider flow data from LANL's network of stream gages. Currently, the Laboratory maintains 35 active gages. Gages are deployed in all watersheds within LANL in support of a number of environmental surveillance activities. Discharge is measured using meters and methods adopted by the USGS. Gages provide essential data that can be used to inform use attainment decisions and can clearly indicate perennial, intermittent, and ephemeral flow patterns. NMED's HP states: "Historic or recent flow data from gauges such as those managed by the USGS or Los Alamos National Laboratory (LANL) should be used to make hydrological determinations. Gage data, if available, may clearly indicate ephemeral, intermittent, or perennial flow patterns for the available period of record and will facilitate the scoring of Indicator #1.1 Water in Channel." (NMED 2011). We recommend NMED consider all representative data to be consistent with the HP instructional document approved and issued by NMED.

LANL Comment 24

As noted in **LANL Comment 5**, 20.6.4.900.H(6) includes a proposed revision to the temperature criterion for the MWW ALU, from a maximum temperature of 32.2°C to "…temperatures that may routinely exceed 32.2°C." Although this seems to resolve an outstanding issue where warmwater and MWW had identical temperature criteria, it remains unclear how this WQS will be applied by NMED.[7] As recommended in **LANL Comment 5**, we recommend that NMED include clear temperature requirements for the various ALUs for transparency in assessing attainment with the ALUs. NMED should consult EPA guidance (Quality Criteria for Water, 1986 ("Gold Book"), or other guidance) to develop a more specific amplitude and/or frequency of temperature excursions in order to differentiate marginal warm water from warm water.

LANL Comment 25

20.6.4.900.J NMAC includes a table of numeric WQC for toxics across designated uses. In response to proposed WQC changes, we have the following concerns and recommended actions:

A. NMED should clarify the various assumptions made when setting new or revised human health-organism only (HH-OO) criteria; for example, which fish consumption rate, body weight, and cancer slope factor (for carcinogens) were applied. We recommend that NMED confirm that the assumptions are appropriate for New Mexico residents. *See* **LANL Comment 27** for additional discussion related to arsenic.

[7] Warmwater and MWW also have identical pH criteria.

B. NMED should consider relevant natural background conditions for naturally occurring pollutants, for example arsenic (*see* **LANL Comment 27** and **LANL Comment 28**).

LANL Comment 26

Sections 304 and 401 of the federal CWA and EPA regulations, 40 CFR § 136.1(a)(3), require the use of EPA Part 136 approved methods in CWA Section 401 certifications and to determine compliance with permit requirements. 40 CFR § 122.44(i)(1) requires that to assure compliance with effluent limitations, NPDES permits include requirements to monitor "[a]ccording to sufficiently sensitive test procedures (*i.e.*, methods) approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters." A method is "sufficiently sensitive" when "[t]he method minimum level (ML) is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter" or "[t]he method has the lowest ML of the analytical methods ***approved under 40 CFR part 136*** or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter." (Emphasis added.)

Based on a comparison of analytical detection limits cited in NMED's 2018 QAPP (approved by EPA) versus the limits reported in 40 CFR 136, there are several discrepancies where NMED has set detection limits that are different than the detection limits set out in 40 CFR Part 136. NMED should include specific language in 20.6.4.12 NMAC, *Compliance with Water Quality Standards*, confirming that compliance with a water quality standard is based on 40 CFR Part 136 analytical methods. At this time, we propose the following addition to 20.6.4.12.E NMAC:

> "The commission may establish a numeric water quality criterion at a concentration that is below the minimum quantification level of test procedures approved under 40 CFR Part 136. In such cases, the water quality standard is enforceable at the minimum quantification level. Compliance shall be determined according to sufficiently sensitive test procedures (*i.e.*, methods) approved under 40 CFR Part 136 for the analysis of pollutants or pollutant parameters."

LANL Comment 27

The proposed arsenic HH-OO criterion of 1.4 µg/L is based on EPA's 1992 Section 304(a) recommended criteria (57 FR 246). EPA is in the process of updating the recommended criteria (EPA 2019). NMED should await EPA's updates to the Integrated Risk Information System (IRIS) assessment and resulting updates to EPA Section 304(a) recommended criteria before revising its HH-OO criterion for arsenic.

Otherwise, we recommend NMED resolve the following issues. Since arsenic is a carcinogen, human health criteria are derived using a linear low-dose extrapolation equation. 57 FR 246 derived the proposed HH-OO criterion based on the following inputs:

- Drinking water intake = 2 L/day
- Fish ingestion rate = 0.065 kg/day
- Body weight = 70 kg
- Bioconcentration factor (BCF) of 44 L/kg
- Target Incremental Cancer Risk Factor (CRF)[8] = 10^{-6}
- Cancer slope factor = 1.75 mg/kg-day-1

EPA is working on an updated IRIS toxicological assessment of inorganic arsenic (focused on both cancer and non-cancer effects) to support updated 304(a) arsenic criteria. Uncertainty in the appropriate cancer slope factor and bioaccumulation rates appear to be the main issues delaying an update to EPA's recommended criteria for arsenic.

Exposure Factors and Updated Toxicity Information

EPA has revised guidance on deriving human health criteria and has updated both the arsenic cancer slope factor (1.5 mg/kg-day-1) and recommended national human health criteria for many chemicals using updated body weight (80 kg), drinking water intake (2.4 L/day), and fish ingestion rate (0.022 kg/day) (EPA 2002b; EPA 2015). NMED should recalculate its proposed arsenic criteria accordingly or confirm exposure parameters for the proposed HH-OO arsenic criterion are appropriate for New Mexico residents (please also see recommendations in **LANL Comment 29**).

Inorganic vs. Organic Arsenic

Arsenic is present in the environment and in fish tissue in both organic and inorganic forms. The NMED proposed arsenic criterion for HH-OO is based on human exposure to inorganic arsenic only, because the scientific information indicates inorganic arsenic (specifically, arsenite [trivalent or As III]) is toxic to humans. If NMED carries this proposal forward, LANL recommends that NMED specify analytical methods for the determination of inorganic arsenic and/or a recommended inorganic proportion factor that can be applied to measurements of total arsenic.

Bioaccumulation / Bioconcentration Factor(s)

NMED's current proposed HH-OO criterion of 1.4 µg/L is intended to protect human consumption of fish assuming a BCF of 44 (calculated as the geometric mean BCF from two species [an eastern oyster and bluegill]). Other states have developed different values based on additional data. For example, Oregon's EPA-approved freshwater arsenic criteria are based on a BCF of 14 using an inorganic proportion factor of 10% to account for the use of total arsenic in the BCF calculation.[9] NMED should establish that the default BCF of 44 is representative of fish bioaccumulation of inorganic arsenic in New Mexico surface waters.

[8] NMAC applies a CRF of 10^{-5}.
[9] Evidence indicates that 85-96% of arsenic in fish tissue is organic arsenic, leaving 4-15% as inorganic (EPA 2002a; EPA 2003; IDEQ 2010).

Because the HH-OO criterion is designed to protect fish consumption exclusively (*i.e.*, drinking water intake is not considered), measuring inorganic arsenic concentrations in fish tissue would provide the most direct measure with which to assess compliance with the HH-OO criterion. For example, assuming a human bodyweight of 80 kg, a fish consumption rate of 22 grams per day for a lifetime, a target incremental CRF of 10-5, and using the current EPA cancer slope factor of 1.5 mg/kg-day-1 for arsenic, the allowable inorganic arsenic fish tissue concentration is 24 µg/kg. Given the significant uncertainty associated with the arsenic BCF, we recommend incorporating a fish-tissue element into the HH-OO criterion that would supersede any water column element.

Furthermore, NMED should consider whether the proposed HH-OO arsenic criterion would apply to water bodies that are fishless due to natural conditions, such as physical habitat, low flow, and/or connectivity to downstream fish-bearing waters. If fish consumption is not an existing or attainable use due to such factors, arsenic criteria for other designated uses (*e.g.*, aquatic life, wildlife habitat, irrigation, and/or livestock watering) should apply instead.

Organisms Only Criteria vs. Domestic Water Supply

NMED proposes arsenic criteria for fish consumption (HH-OO; 1.4 µg/L) that is more stringent than domestic water supply (DWS; 10 µg/L), which is untenable because the DWS use should protect both fish and water consumption. We recommend NMED either await EPA's updated 304(a) criteria for arsenic or resolve the issues identified herein associated with the arsenic HH-OO criterion.

Naturally Occurring Arsenic

Arsenic is a naturally occurring element, widely distributed in the Earth's crust, which can be released to the environment through natural processes, such as weathering of soils and rock. Arsenic is also associated with geothermal activity and volcanism. We expect that in many New Mexico surface waters, natural background concentrations may exceed the current proposed HH-OO criterion of 1.4 µg/L. This is problematic for two reasons. First, 20.6.4 NMAC does not allow the HH-OO or DWS criteria to be modified based on natural background. Setting water quality criteria that are below natural background concentrations will likely create undesired outcomes. For example, water bodies may become listed for arsenic despite not having any human-caused sources of arsenic to the waterbody; in turn, this would result in the allocation of state resources to develop a UAA and/or a total maximum daily load (TMDL) that would not be able to prescribe any meaningful reduction strategies for arsenic. Second, any water bodies that exceed the proposed HH-OO criterion could not be designated as outstanding national resource waters (ONRWs) per 20.6.4 NMAC even if the source(s) of arsenic were natural.

Between October 2015 and September 2018, LANL collected 87 surface water samples from watersheds on the Pajarito Plateau in undeveloped areas upstream or uninfluenced by LANL activities or by urban infrastructure associated with the Los Alamos Townsite. These samples represent natural conditions for the Pajarito Plateau with little or no anthropogenic input.

Dissolved (inorganic and organic) arsenic was detected in natural background surface water samples, though in a relatively small number of the samples (10 of 87, 11%). Detected concentrations ranged from 1.5 to 6.2 µg/L, all exceeding NMED's proposed WQC of 1.4 µg/L).[10]

In 2009, NMED released the TMDL for the Jemez River (NMED 2009), a relatively undeveloped watershed almost entirely contained within federally managed lands (either the Valles Caldera National Preserve or US Forest Service lands). The TMDL reported that several segments of the Jemez River and its tributaries are impaired by arsenic, and "natural sources" was one of several potential reasons for the arsenic impairment. Non-point sources accounted for 93 to 100% of loading depending on the river segment, suggesting that natural sources could be a substantial contributor to arsenic loading in the Jemez River. Similar contributions could be encountered throughout New Mexico.

Based on the findings noted above, NMED should reevaluate their proposed WQC with respect to background conditions and withdraw the proposed criteria until after further evaluation.

LANL Comment 28

20.6.4.10.F NMAC states, "Domestic water supply, primary or secondary contact, or human health-organic only criteria shall not be modified based on natural background." Yet, there are instances where setting criteria to natural background concentrations would still protect these uses.[11] We recommend that NMED should either propose to strike this language or revise as follows, "Domestic water supply, primary or secondary contact, or human health-organic only criteria shall not be modified based on natural background unless such uses would be protected at natural background concentrations." For example, see the discussion on the Jemez River TMDL in **LANL Comment 27** above.

LANL Comment 29

NMED should clarify which numeric criteria apply to recreational uses and revise application of the HH-OO criterion, as follows:

A. "Secondary contact" is defined in 20.6.4.7.S(1) NMAC as "any recreational or other water use in which human contact with the water may occur and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, wading, commercial and

[10] For context to comparisons with the proposed HH-OO inorganic arsenic criterion, Idaho Department of Environmental Quality (2010) found that, on average, 73% of arsenic in Idaho surface waters was in the inorganic form.

[11] For example, site-specific bioaccumulation / bioconcentration factors; waterbodies that are fishless due to natural factors; waters with fish populations that are insufficient to support fish consumption rates used in the human health criteria calculations.

recreational boating and any limited seasonal contact." NMED should specify which numeric human criteria from Subsection J of 20.6.900 NMAC apply to the secondary contact use.

B. "Primary contact" is defined in 20.6.4.7.P[~~5~~](6) NMAC as "any recreational or other water use in which there is prolonged and intimate human contact with the water, such as swimming and water skiing, involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard. Primary contact also means any use of surface waters of the state for cultural, religious, or ceremonial purposes in which there is intimate human contact with the water, including but not limited to ingestion or immersion, that could pose a significant health hazard." NMED should specify which numeric human health criteria from Subsection J of 20.6.900 NMAC apply to the primary contact use.

C. 20.6.4.11.G NMAC states, "Human health-organism only criteria in Subsection J of 20.6.4.900 NMAC apply to those waters with a designated, existing or attainable aquatic life use. When limited aquatic life is a designated use, the human health-organism only criteria apply only if adopted on a segment-specific basis." NMED should revise this language to acknowledge that waters designated with aquatic life uses other than limited aquatic life may be fishless, or support limited fish or shellfish, due to natural low flow conditions or physical habitat and would therefore not support a fish consumption use. 20.6.4.11.G NMAC also states, "The human health-organism only criteria for persistent toxic pollutants, as identified in Subsection J of 20.6.900 NMAC, also apply to all tributaries of waters with a designated, existing or attainable aquatic life use." NMED should revise this language as well to acknowledge that downstream waters may fully support a fish consumption use and meet HH-OO criterion, despite fish consumption not being an existing or attainable use in tributaries due to similar factors (*e.g.*, natural low-flow conditions, surface connectivity with downstream waters, and/or physical habitat).

LANL Comment 30

As described in **LANL Comment 27**, there are chemicals which are naturally elevated in surface waters under background conditions when human perturbations are relatively minimal. In addition to arsenic, described above, chemicals like aluminum and iron are also elevated in natural background; together these two elements comprise a large portion of the earth's crust (roughly 13%). That they will be eroded into streams and present in either a dissolved or particulate phase is virtually guaranteed under natural conditions.

Characterization of natural background conditions on the Pajarito Plateau has revealed that dissolved and total recoverable aluminum concentrations frequently exceed current and proposed WQC. Total recoverable aluminum is significantly correlated in surface water with suspended sediment load, indicating that erosion and particulate loading is a key driver of aluminum in Pajarito Plateau surface waters (and likely throughout New Mexico). Total (unfiltered) iron concentrations measured in samples collected at similarly undeveloped locations of the Pajarito Plateau exceeds the proposed iron criterion of 1,000 µg/L in most samples. These

background surface water data are all publicly available through the Intellus database website. Based on this information, we recommend that NMED reevaluate and revise the proposed criteria for naturally occurring "pollutants" like aluminum, iron, and arsenic (among others) to address the influence of background conditions. Furthermore, waters that are at background concentrations appropriate to the location should not be listed as impaired.

LANL Comment 31

NMED proposes to re-introduce dissolved aluminum criteria for waters outside pH 6.5 to 9 in Section 20.6.4.900 NMAC, stating:

> In the Criteria Applicable to Existing, Designated or Attainable Uses section (20.6.4.900(J)(1) NMAC), the Department proposes to re-establish the acute and chronic aquatic life criteria for dissolved aluminum. Hardness-based total aluminum research was conducted within a specific pH range, therefore hardness-based total recoverable aluminum criteria are proven to be protective within a certain pH range. Dissolved aluminum criteria are being re-established for waters outside the acceptable pH range until there is evidence to support their removal or replacement. (SOR ¶ 34)

NMED proposes to strike the existing language derived from EPA's amended technical support document (dated August 11, 2017) and reverting to the 2013 Triennial Review stating: "The EPA has disapproved the hardness-based equation for total recoverable aluminum in waters where the pH is less than 6.5 in the receiving stream for federal purposes of the Clean Water Act." The proposed new language indicates that the hardness-dependent criteria shall apply to total recoverable aluminum between pH 6.5 to 9 and that outside that range, dissolved criteria for 750 µg/L (acute) and 87 µg/L (chronic) for protection of aquatic life uses.

These changes would seem to address the long-standing differences in NMED's state water quality standards and those approved by the EPA for federal CWA purposes. Yet, the EPA's language to be stricken did not apply to waters above pH 9; thus, NMED is charting new territory without much evidence to support the change. Further, the dissolved aluminum criteria proposed are derived from the 1988 EPA 304(a) guidance document (EPA 1998) which proposed 750 µg/L and 87 µg/L within pH 6.5 to 9. The 1988 EPA 304(a) guidance states:

> This document addresses the toxicity of aluminum to freshwater organisms in waters in which the pH is between 6.5 and 9.0, because the water quality criterion for pH (U.S. EPA 1976) states that a pH range of 6.5 to 9.0 appears to adequately protect freshwater fishes and bottom-dwelling invertebrate fish food organisms from effects of the hydrogen ion.

Thus, the intended applicability of the 1988 EPA 304(a) guidance was within the range of pH amenable to aquatic life, however, NMED looks to apply it outside the range for which the underlying toxicology literature supported the 1988 EPA 304(a) guidance. The 1988 EPA 304(a) guidance also notes that "… ***numerous studies were not used in criteria development***

because pH was less-than 6.5 or greater than 9," because "***control mortality was too high in many tests reported***..." (emphasis added). Therefore, pH alone, absent other toxic pollutants, causes mortality in test organisms and thus the real cause of mortality when soluble aluminum salts are added may be impossible to discern.

During the 2013 Triennial Review, Amigos Bravos proposed a return the 1988 aluminum guidance, as NMED does now. At that time, NMED countered that dependent on other water quality factors, such as pH and hardness, the current aluminum criteria may be more protective of aquatic life than the 1988 EPA 304(a) guidance. In one study, NMED noted, where exposure to test organisms at pH>8 and low hardness, for which the control mortality was acceptable; "At the onset of mortality…New Mexico's hardness-based calculation affords more protection than a reversion to 1988 EPA aluminum guidance." (*See* 2013 Triennial Review, NMED Rebuttal Testimony at 10-45 through 11-45.)

This fact has not changed, and thus for low hardness waters above pH 9, (some New Mexico waters would qualify) a reversion to the 1988 EPA guidance means less protection than the current hardness-dependent criteria. It is unclear why NMED now proposes a reversion to older guidance, when less was known, and would risk less stringent criteria for waters outside pH 6.5 to 9. We recommend that NMED clearly identify its reasons for this reversal in its SOR.

Amigos Bravos' proposed reversion to dissolved aluminum criteria was not previously successful before the WQCC, who affirmed the hardness-dependent aluminum criteria they adopted in 2009. After the public hearing, NMED, and other petitioners and interested parties *(i.e.*, Chino Mines, Amigos Bravos, San Juan Water Commission, and Chevron Mining) submitted closing arguments, proposed reasons, and final proposed changes to the Standards. In its post hearing submittal, Amigos Bravos also withdrew its proposed changes to the Aluminum standards for aquatic life in 20.6.4.900 NMAC.

NMED should carefully review their "new" proposed changes to the aluminum criteria in light of their own findings during the 2013 Triennial Review, which included a list of New Mexico water bodies that would garner fewer protections under this proposed change.

LANL Comment 32

In 20.6.4.901 NMAC, NMED lists publication references. For the reference update for the WQMP-CPP, NMED proposes an update to the 2011 version. However, since the Public Comment Draft was released, the 2020 version of the WQMP-CPP was approved by the WQCC and EPA.

LANL Comment 33

While NMED had two public information sessions in mid-November 2020 on the Public Comment Draft, evaluation of the proposed amendments was preliminary at that time, as LANL was made aware of the Public Comment Draft for the first time in October. NMED indicated in

its November 2020 public meetings on the Public Comment Draft that it had conducted a lengthy, thorough "evaluation of history and supporting evidence" for each amendment proposed for the 2020 Triennial Review (NMED 2020, slide 24), but has not provided that history and supporting evidence. For transparency, we recommend that NMED provide an online or a central accessible location for review and consideration that information NMED evaluated to support the proposed changes.

Although we have endeavored to be as comprehensive as possible, it is challenging to provide meaningful comment on the Public Comment Draft without understanding the context for what NMED has actually considered and reviewed for each proposed change. We request that we meet with NMED and discuss these comments on NMED's Public Comment Draft.

Attachment 1- References

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EPA. 2003. Technical summary of information available on the bioaccumulation of arsenic in aquatic organisms. U.S. Environmental Protection Agency, Office of Water. Washington, DC. EPA/822/R-03/032.

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