Cadmium

2010 NMED					
Acute			Chronic		
m_A	b_A	CF	m_C	b_C	CF
0.8968	-3.5699	1.136672-[(ln hardness)(0.041838)]	0.7647	-4.218	1.101672-[(ln hardness)(0.041838)]

2016 EPA					
Acute			Chronic		
m_A	b_A	CF	m_C	b_C	CF
0.9789	-3.866	1.136672-[(ln hardness)(0.041838)]	0.7977	-3.909	1.101672-[(ln hardness)(0.041838)]

Comparison

Acute			Chronic		
Hardness	2010 NMED Acute	2016 EPA Acute	Hardness	2010 NMED Chronic	2016 EPA Chronic
25	0.51	0.49	25	0.17	0.25
30	0.59	0.58	30	0.19	0.29
40	0.76	0.76	40	0.23	0.36
50	0.91	0.94	50	0.28	0.43
60	1.07	1.11	60	0.31	0.49
70	1.22	1.29	70	0.35	0.55
80	1.37	1.46	80	0.39	0.61
90	1.51	1.63	90	0.42	0.66
100	1.65	1.79	100	0.45	0.72
200	2.98	3.43	200	0.75	1.21
220	3.23	3.75	220	0.80	1.30
300	4.21	5.00	300	1.00	1.64
400	5.38	6.54	400	1.22	2.03

Zinc

2010 NMED					
Acute			Chronic		
m_A	b_A	CF_a	m_C	b_C	CF_c
0.9094	0.9095	0.978	0.9094	0.6235	0.986

1995 EPA					
Acute			Chronic		
m_A	b_A	CF_a	m_C	b_C	CF_c
0.8473	0.884	0.978	0.8473	0.884	0.986

Comparison					
Acute			Chronic		
Hardness	2010 NMED	1995 EPA	Hardness	2010 NMED	1995 EPA
25	36	45	25	36	34
30	42	54	30	43	41
40	54	70	40	54	53
50	65	85	50	66	65
60	76	101	60	72	76
70	87	116	70	87	88
80	97	131	80	98	99
90	107	145	90	108	110
100	117	160	100	118	121
200	211	301	200	213	228
220	229	328	220	230	248
300	297	435	300	300	329
400	379	564	400	382	428

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE PROPOSED AMENDMENTS TO STANDARDS FOR INTERSTATE AND INTRASTRATE WATERS, 20.6.4 NMAC	WQCC No. 14-05(R)

JOINT STIPULATION REGARDING PROPOSED CHANGES TO 20.6.4.128 NMAC

Amigos Bravos, the U.S. Department of Energy, Los Alamos National Security LLC, and the New Mexico Environment Department ("parties"), by and through undersigned counsel, hereby submit this joint stipulation regarding proposed changes to 20.6.4.128 NMAC. In support of this stipulation, the parties state as follows:

1. Water quality standards for ephemeral and intermittent portions of watercourses on lands managed by the U.S. Department of Energy within Los Alamos National Laboratory boundaries are set forth in 20.6.4.128 NMAC. These waters are referred to as "Segment 128 waters."

2. Amigos Bravos proposed changes to 20.6.4.128 NMAC in its September 30, 2014 Proposed Changes and Statement of Basis, submitted to the Water Quality Control Commission as part of the Triennial Review (WQCC No. 14-05(R)).

3. Amigos Bravos, with this stipulation, and in exchange for the commitments made by the other parties in this stipulation, withdraws its proposed changes to 20.6.4.128 NMAC.

4. The U.S. Department of Energy and Los Alamos National Security LLC, with this stipulation, and in exchange for Amigos Bravos withdrawing its proposed changes to 20.6.4.128

NMED Exhibit 72

NMAC pursuant to this stipulation, agree to share by December 2015, with all parties to this stipulation, any new information, maps, or data obtained or developed since completion of the August 2007 "Use Attainability Analysis for Waters Located on Los Alamos National Laboratory as described in Sections 20.6.4.126 and 20.6.4.128 NMAC New Mexico Water Quality Standards July 17, 2005" that would assist in the identification of: (a) which Segment 128 waters are ephemeral and which are intermittent; (b) the existing uses of the Segment 128 waters; (c) the presence of macroinvertebrates or shellfish in the Segment 128 waters; and (d) any significant change to the chemical, physical, or biological integrity of the Segment 128 waters. NMED will also share any new information that it has in accord with Inspection of Public Records Act.

5. The parties agree to meet and confer regarding the appropriate level of water quality protections afforded to Segment 128 waters through a series of meetings to take place between January and July of 2016. To inform this dialogue, the parties recognize that additional data collection and analysis may be helpful or necessary.

6. The parties will endeavor to reach agreement regarding the appropriate level of water quality protections afforded to Segment 128 by September 2016. If the parties reach agreement, NMED agrees to petition the Water Quality Control Commission to propose changes to 20.6.4.128 NMAC expeditiously but in any case, no later than the next triennial review. The determination of when to submit the changes will be made at the discretion of NMED, in consultation with the other parties. Amigos Bravos, the U.S. Department of Energy, or Los Alamos National Security LLC may however, at their discretion, independently choose to petition the Water Quality Control Commission to propose the agreed-upon changes to 20.6.4.128 NMAC.

7. In submitting this joint stipulation, the parties, while endeavoring to reach a consensus agreement regarding the appropriate level of water quality protections afforded to Segment 128, do not waive any rights to independently propose, support, or oppose proposed changes to 20.6.4.128 NMAC at any time, including in future triennial reviews, or to otherwise propose, support, or oppose proposed changes to the level of water quality protections afforded to Segment 128 through other means.

Respectfully submitted this 9th day of October 2015.

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CERTIFICATE OF SERVICE

I certify that a copy of the foregoing pleading was serviced by regular mail and, where an email address is specified, by email, on October 9, 2015 to:

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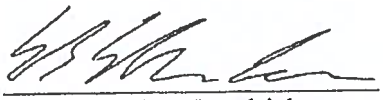

Erik Schlenker-Goodrich
Western Environmental Law Center

NMED
New Mexico Environment Department

Existing Use Analysis
for
Effluent Canyon, Upper S-Site Canyon and Two-Mile Canyon from Water Canyon upstream to its confluence with Upper Two-Mile Canyon

Prepared by:
Surface Water Quality Bureau

May 3, 2021

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Table of Contents

I. Introduction

The objective of the Clean Water Act ("CWA") is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. One of the goals established under the CWA to achieve this objective, is to ensure, wherever attainable water quality provides for the protection and propagation of fish, shellfish and wildlife (aquatic life) and provides for the ability to recreate in and on the water. The CWA implements the measures necessary to achieve this goal through 40 Code of Federal Regulations ("C.F.R."), which, in part, requires states to uphold these goals through the adoption of surface Water Quality Standards ("WQS"). In accordance with 40 C.F.R. § 131.6, these WQS contain, at a minimum, the designated uses for waterbodies, the surface water quality criteria to protect those uses, and an antidegradation policy to ensure the water quality is maintained. The State of New Mexico has codified its WQS under *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC) but recognizes that water quality protection is ongoing and protections for waters may change over time. The most common type of amendments to water quality protections are those associated with the established designated uses.

There are three general conditions to which a designated use may be amended:

1. In accordance with 40 C.F.R. § 131.10(g) and 20.6.4.15 NMAC, if a designated use, that is not an existing use, is not attainable due to one of the six factors identified under 40 C.F.R. § 131.10(g) it may be removed through a Use Attainability Analysis ("UAA"). The UAA must be conducted to demonstrate that the proposed designated use is not less stringent than the existing use, determine the factor preventing the attainment of the current use, and provide evidence supporting the highest attainable use; or
2. In accordance with 40 C.F.R. § 131.10(i), the state reviews and revises applicable WQS to reflect the uses actually attained should those be more stringent than the current designated uses; or
3. In accordance with 40 C.F.R. § 131.20, the state reviews applicable WQS to which there is new (not considered before) information that has become available. If such new information indicates that more stringent uses specified in Section 101(a)(2) of the CWA are attainable, the state revises its standards accordingly during the Triennial Review.

As discussed in this Existing Use Analysis ("EUA"), there is reasonable evidence that existing uses may be more stringent than the current designated use. Therefore, in accordance with 40 C.F.R. § 131.10(i), this EUA will assess the appropriate designated uses and associated criteria based on the existing uses for three non-perennial waters within lands managed by Los Alamos National Laboratory ("LANL") on the Pajarito Plateau in Los Alamos, New Mexico as described in 20.6.4.128 NMAC. In order to do so, this analysis includes the State's regulatory authority and procedures to amend a WQS, an evaluation of the proposed changes as it pertains to the State's antidegradation policy, the waters and designated uses being evaluated under this analysis, an evaluation of threatened and endangered species that may be impacted by amending the designated use, general site conditions, data that were used to establish the existing uses and whether more stringent designated uses are supported based on existing uses.

Throughout the document, some of the referenced regulatory citations have been provided in boxed text to aid with referencing.

II. Regulatory Authority and Framework

A. Authority

The goals and objectives of the CWA, as established in Section 101(a), are to restore and maintain the chemical, physical and biological integrity of the Nations waters; and wherever attainable, to protect for the propagation of fish, shellfish and wildlife, and provide for recreation in and on the water. The CWA requires states to adopt WQS under 40 C.F.R. § 131.4 to achieve these goals and objectives.

> ***CWA § 101(a)***
> *The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective, it is hereby declared that, consistent with the provisions of this Act—*
>
> *(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;*

> ***40 C.F.R. § 131.4***
> ***(a)*** *States (as defined in § 131.3) are responsible for reviewing, establishing, and revising water quality standards. As recognized by section 510 of the Clean Water Act, States may develop water quality standards more stringent than required by this regulation. Consistent with section 101(g) and 518(a) of the Clean Water Act, water quality standards shall not be construed to supersede or abrogate rights to quantities of water.*

The basic authority for water quality management in New Mexico is provided through the Water Quality Act (NMSA 1978, §§ 74-6-1 to 74-6-17). This law establishes the Water Quality Control Commission ("WQCC") and specifies its duties and powers. The WQCC is the state water pollution control agency for all purposes of the federal Clean Water Act (NMSA 1978, § 74-6-3(E)). Under Section 74-6-4(D), the Water Quality Act requires the WQCC to adopt WQS based on credible scientific data and reliable evidence. New Mexico's *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC) establish surface WQS that consist of designated uses for surface waters of the State, the water quality criteria necessary to protect the designated uses, and an antidegradation policy.

> ***74-6-4 NMSA 1978 Duties and powers of commission.***
> *The commission:*
> *D. shall adopt water quality standards for surface and ground waters of the state based on credible scientific data and other evidence appropriate under the Water Quality Act. The standards shall include narrative standards and, as appropriate, the designated uses of the waters and the water quality criteria necessary to protect such uses. The standards shall at a minimum protect the public health or welfare, enhance the quality of water and serve the purposes of the Water Quality Act. In making standards, the commission shall give weight it deems appropriate to all facts and circumstances, including the use and value of the water for water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial and other purposes;*

The WQCC has the authority to delegate responsibility for administering its regulations to constituent agencies to assure adequate coverage and prevent duplication of effort (NMSA 1978, § 74-6-3(F)). As such, the New Mexico Environment Department ("NMED") is the primary constituent agency responsible

for administering and enforcing all programs implemented by the state under the CWA. The WQCC must approve and adopt amendments to the State's WQS prior to NMED filing the amendments with State Records Center and Archives. Amendments become effective for State purposes under the Water Quality Act thirty days after filing with State Records (NMSA 1978, § 74-6-6(E)) or after publication in the New Mexico Register (NMSA 1978, § 14-4-5)), whichever comes later. In accordance with 40 C.F.R. 131.20, within thirty days of the final state action to adopt and certify the revised WQS, the State must submit the amendments and any supporting documentation to the U.S. Environmental Protection Agency ("EPA") for review and approval under the CWA.

> ***40 C.F.R. § 131.20*** *State review and revision of water quality standards.*
> ***(c) Submittal to EPA.*** *The State shall submit the results of the review, any supporting analysis for the use attainability analysis, the methodologies used for site-specific criteria development, any general policies applicable to water quality standards and any revisions of the standards to the Regional Administrator for review and approval, within 30 days of the final State action to adopt and certify the revised standard, or if no revisions are made as a result of the review, within 30 days of the completion of the review.*

B. Background for an Existing Use Analysis

Water quality standards must contain three key elements that dictate their regulatory function. These include establishing designated uses, criteria to protect for those uses and an antidegradation policy. These requirements uphold the objective of the CWA (Section 101 of the CWA) to "restore and maintain the chemical, physical and biological integrity of the Nation's waters".

> ***40 C.F.R. § 131.3 Definitions***
> ***(b) Criteria*** *are elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.*
> ***(f) Designated uses*** *are those uses specified in water quality standards for each water body or segment whether or not they are being attained.*
>
> ***40 C.F.R. § 131.12 Antidegradation policy and implementation methods.***
> *(a) The State shall develop and adopt a statewide antidegradation policy…*

According to 40 C.F.R. § 131.3(e), the definition of existing uses "are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards". A designated use may not be less stringent than an existing use.

> ***40 C.F.R. § 131.3 Definitions***
> ***(e) Existing uses*** *are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the* ***water quality standards****.*

> ***40 C.F.R. § 131.10 Designation of uses***
> ***(i)*** *Where existing* ***water quality standards*** *specify* ***designated uses*** *less than those which are presently being attained, the* ***State*** *shall revise its standards to reflect the uses actually being attained.*

40 C.F.R. § 131.20 State review and revision of water quality standards.
(a) State review. *The State shall from time to time, but at least once every 3 years, hold public hearings for the purpose of reviewing applicable water quality standards… The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly…*

If the designated use has criteria less stringent than the existing use, the State must amend the WQS to reflect the use actually attained. Unlike the requirements for removing or amending a designated use to one with less stringent criteria under 40 C.F.R. § 131.10(g), a Use Attainability Analysis ("UAA") is not required for revising standards to reflect an existing use. However, in the State of New Mexico designated uses are codified under rule (20.6.4 NMAC) and the State must undertake a rulemaking process to amend the WQS. NMED must provide supporting evidence that demonstrates compliance with regulatory elements to petition the Commission and provide EPA the reasoning to establish a more stringent designated use. An EUA standardizes the elements necessary for a WQS designated use amendment. Although neither federal nor State law or rule define the term "EUA", 40 C.F.R. § 131.10(i) and 20.6.4.10(B) NMAC establish the requirement to amend uses to be at least as stringent as existing uses.

40 C.F.R. § 131.10 Designation of uses
(g) *States may designate a use, or remove a use that is not an existing use, if the State conducts a use attainability analysis as specified in paragraph (j) of this section that demonstrates attaining the use is not feasible because of one of the six factors in this paragraph. If a State adopts a new or revised water quality standard based on a required use attainability analysis, the State shall also adopt the highest attainable use, as defined in § 131.3(m).*

40 C.F.R. § 131.3 Definitions
(m) *Highest attainable use is the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Act and attainable, based on the evaluation of the factor(s) in 40 C.F.R. § 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability. There is no required highest attainable use where the State demonstrates the relevant use specified in section 101(a)(2) of the Act and sub-categories of such a use are not attainable.*

Therefore, this analysis intends to provide the supporting evidence needed to determine if a designated use change is warranted based on existing uses.

III. Analysis Framework

A. Reasoning for Analysis

As part of the efforts made to determine the appropriate designated uses for classified ephemeral and intermittent waters within lands managed by U.S. Department of Energy ("DOE") within LANL as identified in 20.6.4.128 NMAC, Amigos Bravos, the U.S. DOE, Los Alamos National Security LLC, and NMED entered into a joint stipulation (WQCCb, 2015) on October 9, 2015. This agreement required the parties meet, share available data, and confer regarding the appropriate level of water quality protections for

ephemeral and intermittent waters classified under 20.6.4.128 NMAC. The stipulation requires NMED petition the WQCC on or before the next Triennial Review for amendments to which all parties concur. The lack of concurrence on these tributaries would not preclude any of the parties from filing independent petitions for amending the designated uses, as they saw appropriate, given the demonstration was prepared in accordance with 20.6.4.15 NMAC and filed with the Commission in accordance with 20.1.6 NMAC.

Following several years of discussions and data gathering, the three parties reached concurrence in December 2020 for increased aquatic life protections based predominately on hydrology. Therefore, this EUA only evaluates those tributaries in which the three parties concurred. These include Effluent Canyon, Two-Mile Canyon from its confluence with Pajarito Canyon to its confluence with Upper Two-Mile Canyon, and S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring. Based on the stipulated agreement restrictions, this analysis does not evaluate the appropriate designated uses for the other ephemeral and intermittent waters within LANL. These other waters, which also warrant evaluation, will be considered independently of this analysis.

B. Waterbodies Evaluated

For purposes of this analysis, and as part of the joint stipulation, there was only concurrence by all parties to proceed with a full designated use analysis based on existing uses for three tributaries within LANL. They include Effluent Canyon, the upper portion of S-site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring, and Two-Mile Canyon from Pajarito Canyon upstream to its confluence with Upper Two-Mile Canyon. All three of these tributaries are classified waters in 20.6.4.128 NMAC.

20.6.4.128 RIO GRANDE BASIN

Ephemeral and intermittent portions of watercourses within lands managed by U.S. department of energy (DOE) within LANL, 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. (Surface waters 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 of 20.6.4.900 NMAC (salmonids absent).*

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

C. Designated Uses Evaluated

Designated uses for livestock watering and wildlife habitat are not being evaluated under this analysis since they are designated uses for all waters of the state and are established as attainable for these waters. Therefore, NMED is only evaluating aquatic life and recreational uses under this analysis.

The current designated aquatic life use for Effluent Canyon, S-Site Canyon and Two-Mile Canyon is limited aquatic life, which has acute numeric criteria but does not have criteria for pH, dissolved oxygen, temperature, or chronic numeric criteria, with a segment-specific acute ammonia criterion.

The current designated recreational use for Effluent Canyon, S-Site Canyon and Two-Mile Canyon is secondary contact which has an *Escherichia coli* ("*E. coli*") bacteria monthly geometric mean criterion of 548 colony forming units ("cfu") per 100 milliliters ("mL") or most probable number ("MPN") per 100 mL, and a single sample criterion of 2,507 cfu per 100 mL or MPN per 100 mL.

Table III-1. *Tributaries located within the study area and their current designated uses with a notation on those evaluated under this analysis*.

WQS	Waterbody Description	Contact Use	Aquatic Life Use	Domestic Water Supply	Fish Culture, Public Water Supply, Industrial Water Supply	Irrigation and Irrigation Storage	Livestock watering	Wildlife habitat
20.6.4.128	Effluent Canyon	SC*	LAL*	-	-	-	Y	Y
20.6.4.128	S-Site Canyon	SC*	LAL*	-	-	-	Y	Y
20.6.4.128	Two-Mile Canyon	SC*	LAL*	-	-	-	Y	Y

"*" denotes that this designated use is evaluated under this analysis
"SC" denotes Secondary Contact designated recreational use for the listed waterbody
"LAL" denotes Limited Aquatic Life designated aquatic life use for the listed waterbody
"-" denotes not a designated use for the listed waterbody
"Y" denotes this as a designated use for the listed waterbody

D. Protection of Downstream Water Quality Standards

In accordance with 40 C.F.R. § 131.10(b), when states consider a designated use amendment, they must provide for the attainment and maintenance of the WQS of downstream waters.

Effluent Canyon is a tributary of Mortandad Canyon. Mortandad Canyon is presumed to be a non-perennial water within LANL and therefore classified under 20.6.4.128 NMAC. As already stated, the designated aquatic and recreational uses in 20.6.4.128 NMAC include limited aquatic life use and secondary contact recreational use. Mortandad Canyon traverses off lands managed by the DOE within LANL before it transitions to Pueblo de San Ildefonso waters. The Pueblo de San Ildefonso does not have "Treatment in a similar manner As a State" ("TAS") through EPA but has a water quality monitoring program that assesses against the state's defined designated uses under 20.6.4 NMAC. For Mortandad Canyon not within LANL, the designated aquatic and recreational uses in 20.6.4.98 NMAC include marginal warmwater aquatic life use and primary contact recreational use. Mortandad Canyon then terminates at the confluence with the Rio Grande in Santa Fe county. The Rio Grande, at this location is classified in 20.6.4.114 NMAC and has both warmwater and marginal coldwater aquatic life designated uses and a primary contact recreational use.

S-Site Canyon is a tributary to Water Canyon. Water Canyon, at its confluence with S-Site Canyon, is currently presumed to be a non-perennial water within LANL and therefore classified under 20.6.4.128 NMAC. Water Canyon traverses across lands managed by the DOE within LANL until just before its termination at its confluence with the Rio Grande in Santa Fe county. The portion of Water Canyon not within LANL is currently presumed to be an unclassified non-perennial water under 20.6.4.98 NMAC, which has a marginal warmwater aquatic life use and a primary contact recreational use. The Rio Grande at this location is classified under 20.6.4.114 NMAC, which has both warmwater and marginal coldwater aquatic life designated uses and a primary contact recreational use.

Two-Mile Canyon is a tributary to Pajarito Canyon. Pajarito Canyon, at its confluence with Two-Mile Canyon, is currently presumed to be a non-perennial water within LANL and therefore classified under 20.6.4.128 NMAC. Pajarito Canyon then traverses out of lands managed by the DOE within LANL as it bisects the town of White Rock. Outside of LANL, Pajarito Canyon has protections for unclassified non-perennial waters under 20.6.4.98 NMAC with a marginal warmwater aquatic life use and a primary contact recreational use. Pajarito Canyon then terminates at its confluence with the Rio Grande, in Los Alamos County. The Rio Grande, at this location, is classified under 20.6.4.114 NMAC, which has both warmwater and marginal coldwater aquatic life designated uses and a primary contact recreational use.

Based on the evidence presented in this review, a more stringent aquatic life designated use, as evaluated in this EUA, would not cause water quality degradation in downstream waters.

IV. Antidegradation Evaluation

A. Regulatory Background

In accordance with 40 C.F.R. § 131.12, states must develop and adopt a statewide antidegradation policy, which shall include protection for various levels of water quality. In addition, states must develop methods for implementing the antidegradation policy. New Mexico's antidegradation policy, codified under 20.6.4.8 NMAC, defines three tiers of protection against degradation. These tiers include protections for existing uses ("Tier 1"), protections for high quality waters that exceed levels necessary to support aquatic life, wildlife and recreational uses ("Tier 2"), and protections for waters designated as Outstanding National Resource Waters ("Tier 3"). The implementation procedure for the State's antidegradation policy is integrated as a part of the state's Water Quality Management Plan/Continuing Planning Process (WQMP/CPP), which is approved by both the WQCC and EPA.

40 C.F.R. § 131.12 Antidegradation policy and implementation methods.
(a) *The State shall develop and adopt a statewide antidegradation policy.*

20.6.4.8 NMAC – Antidegradation Policy and Implementation Plan
A. Antidegradation Policy: *This antidegradation policy applies to all surface waters of the state.*
(1) *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected in all surface waters of the state.*
(2) *Where the quality of a surface water of the state exceeds levels necessary to support the propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the commission finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic and social development in the area in which the water is located. In allowing such degradation or lower water quality, the state shall assure water quality adequate to protect existing uses fully. Further, the state shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable BMPs for nonpoint source control. Additionally, the state shall encourage the use of watershed planning as a further means to protect surface waters of the state.*
(3) *No degradation shall be allowed in waters designated by the commission as outstanding national resource waters (ONRWs), except as provided in Subparagraphs (a) through (e) of this paragraph and in Paragraph (4) of this Subsection A.*

20.6.4.8 NMAC – Antidegradation Policy and Implementation Plan

B. Implementation Plan: *The department, acting under authority delegated by the commission, implements the water quality standards, including the antidegradation policy, by describing specific methods and procedures in the continuing planning process and by establishing and maintaining controls on the discharge of pollutants to surface waters of the state. The steps summarized in the following paragraphs, which may not all be applicable in every water pollution control action, list the implementation activities of the department. These implementation activities are supplemented by detailed antidegradation review procedures developed under the state's continuing planning process.*

NMED evaluated information regarding designated Outstanding National Resource Water ("ONRWs") and existing uses for Effluent Canyon, the upper portion of S-site Canyon, and Two-Mile Canyon from Pajarito Canyon upstream to the confluence with Upper Two-Mile Canyon to determine if any proposed amendments would conflict with the state's antidegradation policy, as discussed below.

B. Outstanding National Resource Waters

An ONRW is a designation granted by the WQCC for waters that have a particular benefit to the State. These designated waters are listed under 20.6.4.9(D) NMAC and are protected from degradation in accordance with 20.6.4.8(3) NMAC.

In order to evaluate changes to a designated use, NMED must determine whether the waterbody is designated as an ONRW. The Surface Water Quality Bureau ("SWQB") conducted a review of ONRWs identified under 20.6.4.9(D) NMAC and compared these with the waters evaluated under this analysis. The evaluation determined that none of the waters considered under this analysis are listed as an ONRW. Therefore, no degradation of an ONRW will occur as a result of a more stringent designated use.

C. Existing use

An "Existing Use" is defined equally across NMAC, 40 C.F.R. § 131.3, and the CWA as a use that is actually attained in a surface water on or after November 28, 1975, whether or not it is a designated use and whether or not it is currently being attained. An existing use represents the highest quality of water attained and therefore provides the data required to evaluate both existing instream uses and determination of water quality that exceeds levels necessary to support aquatic life, wildlife, and recreational uses as required under the antidegradation policy.

Since the goal of this EUA is to evaluate and amend, as appropriate, the aquatic life designated use to reflect a more stringent existing use, no degradation of a waterbody will occur as a result of the WQS amendment to a more stringent use. The findings of the existing uses for waters evaluated under this EUA can be found in detail under Section VII. Note that this EUA is limited in scope and only evaluates the existing uses, based on available information, for Effluent Canyon, S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring, and Two-Mile Canyon from its confluence with Pajarito Canyon to Upper Two-Mile Canyon because the three parties only reached concurrence for these three waterbodies, as described.

V. Threatened and Endangered Species Review

A. Regulatory background

In accordance with Section 7(a)(2) of the Endangered Species Act ("ESA"), EPA shall consult with the U.S. Fish and Wildlife Service to ensure that any action authorized by the EPA is not likely to jeopardize the

continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species. If EPA believes that a threatened or endangered species may be affected or jeopardized by implementing a WQS change, then the Federal agencies, through ESA consultation, shall ensure that the appropriate actions are implemented (ESA 2019). In order to assist EPA with evaluation, this EUA includes a preliminary screening of listed threatened and endangered species within the larger LANL area.

Section 7(a) of the ESA
FEDERAL AGENCY ACTIONS AND CONSULTATIONS

(1) The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act.

(2) Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an agency action) is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available.

B. Evaluation of Threatened and Endangered Species

This EUA includes a review of U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) project planning tool (https://ecos.fws.gov/ipac/) to determine if the listed waterbodies in this EUA overlap with listed species or critical habitat (when applicable). According to the IPaC planning tool, threatened and endangered species for the geographical area comprising LANL include:

1. Federally listed threatened species:
    a. Mexican Spotted Owl (*Stix occidentalis lucida*)
    b. Yellow-billed Cuckoo (*Cozzyzus americanus*)
2. Federally listed endangered species:
    a. New Mexico Meadow Jumping Mouse *(Zapus hudsonius luteus)*
    b. Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
    c. Jemez Mountain Salamander (*Plethodon neomexicanus*)
    d. Rio Grande Silvery Minnow (*Hybognathus amarus*)
3. Area federally delineated as critical habitat for the following species:
    a. Jemez Mountain Salamander (*Plethodon neomexicanus*)
    b. Mexican Spotted Owl (*Stix occidentalis lucida*)

Appendix B of this document contains a figure depicting the area evaluated under IPaC and describes the defined area.

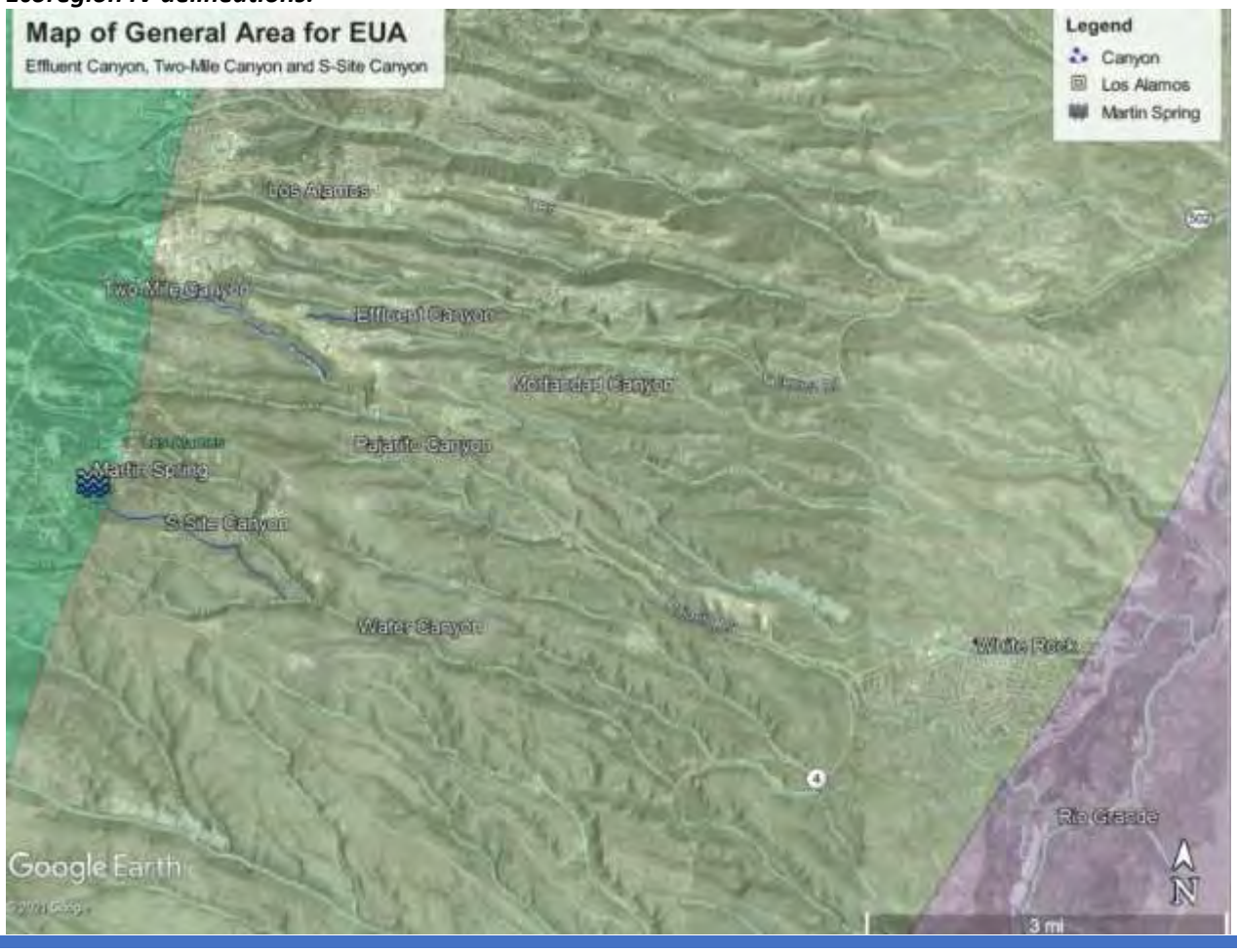
The proposed change in WQS would not jeopardize any threatened and endangered species' continued existence nor result in the destruction or adverse modification of critical habitat because this evaluation is considering designated uses that would be more stringent for intermittent waters currently classified under 20.6.4.128 NMAC. This increased protection would not negatively affect or degrade habitat but would provide enhanced protections to the waterbodies and those species dependent on them. This threatened and endangered species evaluation is limited to the existing use analysis for Effluent Canyon, S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring, and Two-Mile Canyon from its confluence with Pajarito Canyon to Upper Two-Mile Canyon. Existing use analyses for other waterbodies within LANL must reevaluate impacts to threatened and endangered species.

VI. Site Conditions

A. Geographical location

The Pajarito Plateau, which in part, includes Effluent Canyon, S-site Canyon and Two-Mile Canyon from Pajarito Canyon upstream to the confluence with Upper Two-Mile Canyon, refers to the area east of the Valle Caldera and west of the Rio Grande in Los Alamos County, New Mexico, approximately 35 miles northwest of Santa Fe. Figure VI-1 provides the geospatial locations of the waterbodies evaluated in this EUA.

Figure VI-1. ***Map of general area depicting the tributaries being evaluated under this EUA and EPA's Ecoregion IV delineations.***



B. Physiographic and Ecological Conditions

The Pajarito Plateau was formed through volcanic flows and erosion. Characteristic of a plateau, it consists of steep fingerlike canyons that have an elevational profile of over 1,000 feet that lead up to a relatively flat elevational surface of approximately 7,320 feet. The waters evaluated under this work plan drain in a dendritic pattern from the east rim of the Valle Caldera southeast towards the Rio Grande. Effluent canyon is approximately 0.50 miles long from its confluence with Mortandad canyon to is origin at TA-16. S-site canyon is approximately 2 miles long from its confluence with Water canyon to its origin at Martin spring in TA-33. Two-Mile canyon is approximately 2 miles long from its confluence with Pajarito canyon to Upper Two-Mile canyon. The waters within LANL are located in the upper reaches of the Rio Grande-Santa Fe Sub-basin 8-digit Hydrologic Unit Code ("HUC"), which encompasses 4,847 Square kilometers (1,197,826 acres) and includes the Canada Ancha-Rio Grande watershed (10-digit HUC). The elevation, aspect, and slope of these physiographic features influence the hydrology of the area, which in turn has a direct effect on aquatic life.

The Pajarito Plateau is within the level IV ecological regions 21d, 21g, 21h and transitions to ecological regions 22g and 22h where tributaries from the Pajarito Plateau converge with the Rio Grande (Griffin et al, 2006). Ecological regions (otherwise referred to as "Ecoregions") denote areas of general similarity in the type, quality, and quantity of environmental resources. Ecoregions serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. In recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance (Omernik, 1995). For purposes of this EUA, the physiographic and ecological conditions of the Pajarito Plateau influence but do not determine attainable uses and may only be used as supporting evidence to determine the existing use.

C. Land Use and Anthropogenic History

Historically, the Pajarito Plateau area was inhabited and utilized by local indigenous tribes, as noted in the abundant archaeological evidence throughout the region. Other than a few noted homesteaders and a boys' school founded by Ashley Pond in 1917, the area remained relatively undeveloped until the establishment of LANL in 1942 (Machen, McGehee and Hoard, 2013). As provided on their website (https://www.lanl.gov/about/facts-figures/index.php), LANL is a DOE facility that operates on approximately 40 square miles of DOE-owned property on the Pajarito Plateau, with more than 1,000 buildings, 13 nuclear facilities, and a power plant in 47 technical areas, connected by 268 miles of roads, 100 miles of which are paved. Similar to the physiographic and ecological conditions, the land use and anthropogenic history influences the attainable uses of a tributary; however, the land use and anthropogenic history do not alter the existing uses. For purposes of this EUA, the land use and anthropogenic history are mentioned for informational purposes only and will not be used in the determination of the aquatic life existing use.

D. Urban Areas

Anthropogenic activities can affect water quality due to a variety of factors including, but not limited to, increased velocity as a result of sheet-flow run-off from impervious surfaces, increased erosion in some areas and desertification in others due to altered flow patterns (Levick et al. 2008), increased volumes from storm water systems that alter flow regimes, and decreased permeability and increased mobilization of pollutants. Therefore, an evaluation of water quality changes must consider anthropogenic activities.

SWQB reviewed the U.S. Census Bureau's Master Address File / Topologically Integrated Geographic Encoding and Referencing ("MAF/TIGER") Database ("MTDB") TIGER/Line shapefile to determine if any non-perennial waters under analysis run through or are adjacent to an Urban Area designation.

Table VI-1 identifies the presumed non-perennial tributaries located on the Pajarito Plateau that flow, at least partially, through a designated Urban Area.

Table VI-1. *Summary of presumed non-perennial tributaries that run through an urban area.*

WQS	Urban Area	Waterbodies
20.6.4.128	Los Alamos, NM	Los Alamos Canyon, DP Canyon
20.6.4.128	White Rock, NM	Mortandad Canyon

Although all three tributaries being evaluated under this analysis transect through LANL, none transect the adjacent urban areas of Los Alamos or White Rock. According to the U.S. Census Bureau, the town of Los Alamos, the county seat for Los Alamos County, has a population of 12,019 (U.S. Census Bureau, 2010), while White Rock has a population of 5,725 (U.S. Census Bureau, 2010b). Although not an urban area, as reported on their website (https://www.lanl.gov/about/facts-figures/index.php), LANL is northern New Mexico's largest employer, second only to the State of New Mexico with 12,752 employees, including its contractors, students and post-doctoral researchers. Most employees reside outside of Los Alamos.

Since the waterbodies studied in this EUA analysis are not located within or flow through designated Urban Areas, the effects of urban areas are not relevant to this analysis. Thus, this EAU will not consider urban areas as supporting evidence for existing uses.

The CWA requires states establish the highest attainable use for a water, which may not be less stringent than the existing use. This EUA evaluates the existing uses; therefore, the potential anthropogenic impacts on water quality are not being evaluated in any depth as they would not alter the determination of an existing use or the amendment of a designated use to be at least as stringent as the existing use.

E. National Pollutant Discharge Elimination System and Stormwater General Permits

The Pajarito Plateau, and LANL in particular, has two NPDES permits with outfalls discharging to several of the tributaries being evaluated under this EUA (Table VII-2). Since consistent discharges from a permitted facility could provide more permanence of stream flow, this condition could support more sensitive populations of aquatic life. For those waterbodies to which consistent discharges under an NPDES permit occur, the hydrologic conditions must be considered in determining the hydrologic regime.

Table VI-2. *Summary of NPDES permits discharging to non-perennial tributaries.*

WQS	FACILITY NAME	PERMIT NUMBER	Waterbody
20.6.4.126	Los Alamos National Laboratory (Industrial Outfalls)	NM0028355	Perennial portions of Sandia in 20.6.4.126 NMAC
20.6.4.128			Mortandad canyon, Canada del Buey, Los Alamos canyon, Ephemeral portion of Sandia canyon, Ten Site canyon and Canon de Valle

WQS	FACILITY NAME	PERMIT NUMBER	Waterbody
20.6.4.98	Los Alamos National Laboratory/Storm water	NM0030759	Rendija canyon, Bayo canyon,
20.6.4.128			Mortandad canyon, Canada del Buey, Los Alamos canyon, DP canyon, Sandia canyon, Ten Site canyon, Canyon de Valle, Water canyon, Ancho canyon, Chaquehui canyon, Fence canyon, Pajarito canyon, Two-Mile canyon, Three-Mile canyon, Potrillo canyon and Pueblo canyon

Both permits NM0028355 and NM0030759 discharge to the waters under review for this EUA.

Permit number NM030759 authorizes stormwater discharge from areas within LANL to various tributaries including **Mortandad** (Effluent canyon) and **Two-Mile canyon**. Due to the episodic nature of this discharge, it will not be evaluated as part of the EUA.

There are two outfalls associated with discharges to **Effluent Canyon** (identified as Mortandad canyon in NPDES Permit No. NM0028355). These include treated effluent discharges from LANL's Radioactive Liquid Waste Treatment Facility from Technical Area ("TA") 50 to Outfall 051, physically located in Effluent canyon in TA-26; and storm water, cooling tower blowdown, and "other" wastewater from Outfall 03A181, physically located in TA-11. Hydrology protocol surveys and streamfow gaging data would provide evidence of any sustained discharges from these outfalls.

There is one outfall associated with discharges to **Two-Mile canyon**. This outfall includes discharge from TA-45 to Outfall 03A025, which is not identified under LANL's current permit (EPA, 2015) and may no longer be active. Hydrology protocol surveys and gaging station data would capture evidence of sustained discharges from this outfall.

There are two outfalls associated with discharges to **S-Site canyon**. These discharges include TA-33 to Outfalls 03A130 and 05A097, which are not identified under LANL's current permit (EPA, 2015) and may no longer be active. Hydrology protocol surveys and gaging station data would capture evidence of sustained discharges from this outfall.

F. Diversions and Impoundments

Impoundments can create low-flow conditions, disrupt natural surface flow and sediment transport, interfere with natural geomorphic processes, alter water temperatures, and fragment the natural stream systems (Levick et al. 2008). The impoundments within the study area were limited to gradient control structures which do not retain significant flows, road crossing culverts, sediment catchment basins to reduce sediment and pollutant transport while allowing for flow of water within the channel and a single large scale water retainment structure across Pajarito Canyon just below its confluence with Two-Mile Canyon to minimize sediment and contaminant transport. Surveys determined that with the exception of the large structure across Pajarito Canyon, none of the structures prevented flow of water and therefore are not of reasonable concern to evaluating the existing uses for Effluent Canyon, the upper

portion of S-site Canyon and Two-Mile Canyon from Pajarito Canyon upstream to its confluence with Upper Two-Mile Canyon.

An evaluation of surface water diversions was conducted to determine if hydrologic conditions were a result of anthropogenic activities that would prevent attainment of a more stringent designated use. According to the Office of the State Engineer ("OSE") Water Rights Reporting System Points of Diversion, the areas in and around Effluent canyon, S-Site canyon and Two-Mile canyon have several points of diversion. These are predominately ground water diversions and have been determined to be insignificant for the establishment of more stringent designated uses. Thus, specifics concerning diversions and impoundments were not expanded upon for use as supporting evidence in consideration of an EUA.

Table VI-3. List of points of diversion as identified through the New Mexico Office of the State Engineer's Water Rights Reporting System.

POD ID	Associated Canyon	*Type-Depth	Use	**Status	Diversion	Owner
RG 95966	Two-Mile (Upper)	GW-500'	Exploration	Active	0	Pojoaque Valley School District
RG 91700	Two-Mile (Upper)	GW-31'	Monitoring	Inactive	0	US DOE LANL
RG 91698	Two-Mile (Upper)	GW-32'	Monitoring	Inactive	0	US DOE LANL
RG 92969	Two-Mile	SW-0'	Monitoring	Inactive	0	US DOE LANL
RG 92230	Two-Mile	GW-1,418'	Monitoring	Active	0	US DOE LANL
RG 95504	S-Site	GW-N/A	Monitoring	Pending	0	US DOE LANL
RG 92969	Effluent	SW-0'	Monitoring	Inactive	0	US DOE LANL
RG 95365	Effluent	GW-825'	Plugging Plan	-	0	US DOE LANL

*Groundwater "GW", Surface Water "SW"; depth in feet (or 0' for a surface water diversion)
** Identified as "Plugged" or "PLG" on the OSE Water Rights Summary

VII. Existing Use Evaluation

Since existing uses are based on the highest quality of water needed to support a use, this EUA evaluates water quality data to determine the existing use. Water quality data used to determine the existing aquatic life uses were collected under ambient, baseflow conditions and not the result of a direct and immediate result of precipitation. Based on the findings from discussions between the three parties to the Joint Stipulation concluding in December 2020, this analysis is limited in scope and only evaluates the existing uses, based on available information at the time, for:

- Effluent Canyon,
- S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring and
- Two-Mile Canyon from its confluence with Pajarito Canyon to Upper Two-Mile Canyon.

Data used to determine the existing recreational and aquatic life uses are provided in **Appendix A** of this analysis.

This EUA evaluates the following water quality data to establish existing uses:

Criteria I. The hydrologic condition establishes the minimum level of protection for aquatic life. Should there be evidence of intermittent conditions or persistent flow (spanning more than 96 hours), the existing use is, at a minimum, that in which aquatic life are protected against chronic exposure to pollutants.

Criteria II. The maximum water temperatures recorded during summer months demonstrate uses that cannot be supported.

Criteria III. The pH range provides evidence of ambient water quality conditions for a particular waterbody section to establish both recreational and aquatic life existing uses.

Criteria IV. Dissolved Oxygen ("DO") provides evidence of ambient water quality conditions for a particular section of a waterbody to support the establishment of existing uses.

Criteria V. Benthic macroinvertebrates are, in part, an indicator of the hydrologic, biologic, and chemical conditions of a tributary. For purposes of this analysis, the presence or absence of benthic macroinvertebrate data will be used in a unilateral fashion. The presence of benthic macroinvertebrates indicates the persistence of water over periods long enough to support lifecycles of aquatic life. However, the absence of benthic macroinvertebrates does not assert, in and of itself, that water is not present for periods long enough to support aquatic life. Other conditions may cause a lack of benthic macroinvertebrates beyond just the absence of water.

Criteria VI. Other numeric aquatic life criteria, as listed in 20.6.4.900(I) through (M), are assumed to be attainable for establishing the existing use unless determined that natural sources are preventing attainment, which is beyond the scope and resources for this analysis. No further analysis of numeric criteria beyond pH, DO, and temperature was conducted for existing aquatic life uses.

Criteria VII. *Escherichia coli* (*E. coli*) is the predominant criteria for recreational uses. However, no *E. coli* data were found for purposes of this analysis. Therefore, the existing recreational use, based on *E. coli* was found to be indeterminate at this time. No further analysis of *E. coli* was conducted as it pertained to existing recreational uses. Until further data are available, the existing recreational use is assumed to be at least secondary contact.

A. Hydrologic Condition

The hydrologic condition was determined through Hydrology Protocol surveys, conducted within normal meteorological conditions. This analysis uses available stream and alluvial well hydrographs, confirmed with climatological data, to supplement the Hydrology Protocol determination of hydrologic condition.

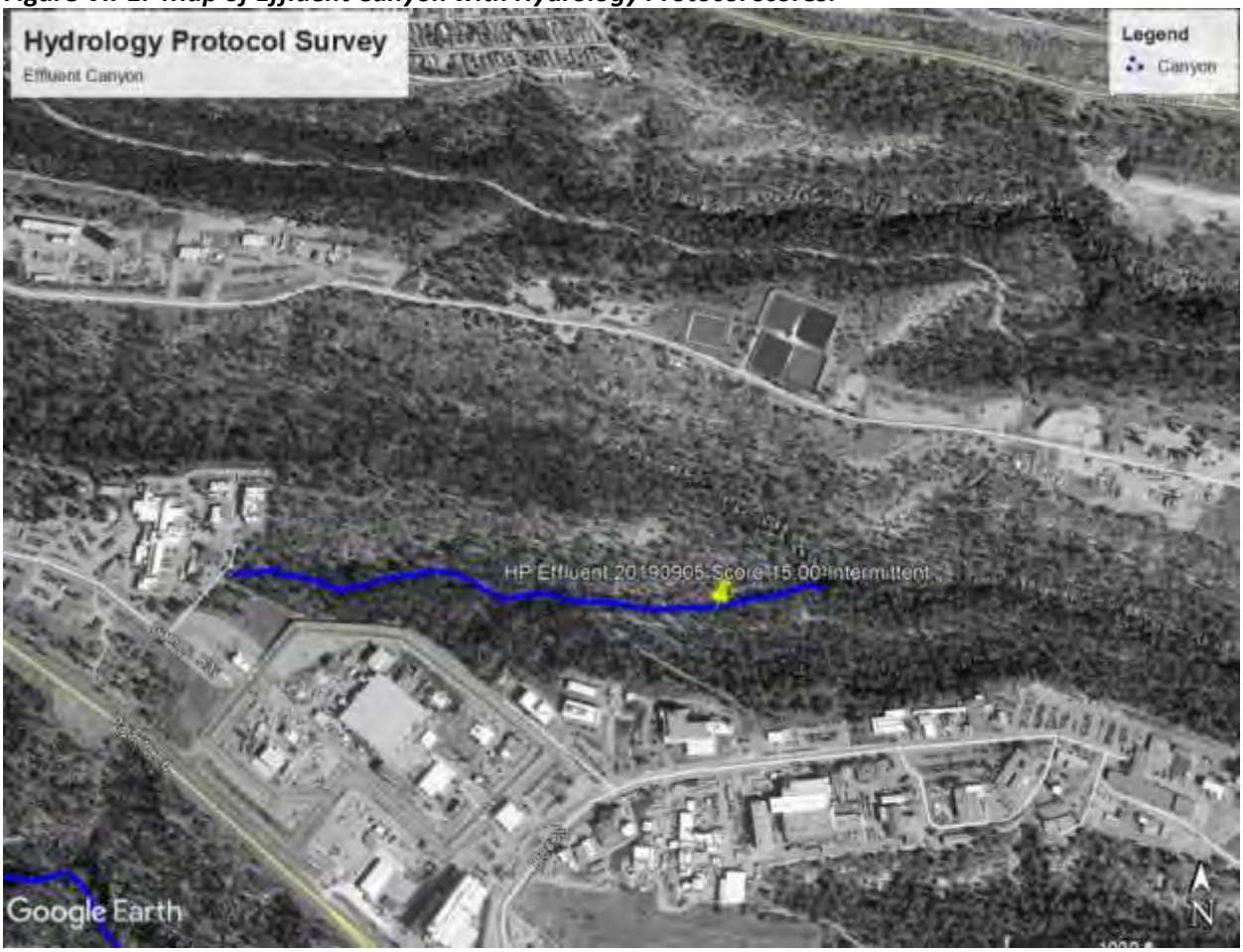
Representatives from both LANL and NMED conducted Hydrology Protocol surveys of the referenced waterbodies in 2019. The surveys were conducted when the standardized precipitation index was within a range of -1.5 to 1.5, indicating normal or near-normal meteorological conditions, ideal for validation of survey findings. SWQB validated the survey results with field notes recorded at the time of the Hydrology Protocol surveys.

SWQB extracted streamflow data from LANL's Intellus database for use as supporting information for the presence and permanence of water. This data was collected by LANL through instantaneous measurements (usually with water quality data collection activities) or through continuous monitoring in both automated stream and alluvial well samplers, using LANL's Interim Facility-Wide Groundwater Monitoring Plans ("IFGMPs"). This data was compared with historical weather data, collected by the National Oceanic Atmospheric Administration ("NOAA") for Los Alamos County between September 1, 2005 and July 1, 2007, to confirm that streamflow was not in direct response to significant precipitation events. In addition to streamflow data, LANL provided hydrographs for several gage stations within S-Site Canyon (Martin Spring). It should be noted that although the presence of streamflow data supports the persistence of water, the lack of streamflow data does not demonstrate, in and of itself, conditions are not sufficient to support aquatic life.

Effluent Canyon was surveyed using the Hydrology Protocol method below outfall 051 and below the grade control (Figure VII-1) on September 5, 2019 when the 12-month standardized precipitation index for Los Alamos County from October 1, 2018 through September 30, 2019, was between 0 and 1; indicating normal to slightly above normal precipitation, ideal for the use of the survey methodology. The Hydrology Protocol survey for Effluent Canyon scored 15.00, indicating intermittent conditions.

Streamflow data, as captured by automated stream gages (E1-W and E1-E), were limited but provide some data demonstrating measurable seasonal flow in the fall and spring not directly in response to precipitation events; thus, supporting the finding of the Hydrology Protocol survey that Effluent Canyon has an intermittent hydrologic regime**.** Due to sustained periods of water, the existing use is, at a minimum, that which protects aquatic life from chronic exposure to pollutants. **This intermittent hydrologic regime establishes that Effluent Canyon, from its confluence with Mortandad Canyon to its headwaters, has an existing aquatic life use of at least marginal warmwater.**

Figure VII-1. ***Map of Effluent Canyon with Hydrology Protocol scores.***



S-Site Canyon (Martin Spring) was surveyed three times (Figure VII-2) using the Hydrology Protocol method. Two surveys were conducted on August 29, 2019, one at the monitoring well MSC-16-06293, which scored 8.00 (ephemeral) and one above the monitoring well, which scored 16.00 (intermittent). The standardized precipitation index for Los Alamos County from September 1, 2018 through August 31, 2019 was between 0 and 1; indicating normal to slightly above normal precipitation, ideal for the use of the survey methodology. These two survey points are within 300 meters of each other. The third survey, conducted on October 17, 2019 in S-site Canyon just before its confluence with Water Canyon, scored 9.00 (intermittent). The standardized precipitation index for Los Alamos County from November 1, 2018 through October 31, 2019 was between 0 and -1; indicating normal to slightly below normal precipitation, ideal for using the survey methodology.

The presence of surface water was demonstrated from hydrographs in three alluvial well gages along S-Site Canyon. The alluvial well gages, MSC-16-06293, MSC-16-06294 and MSC-16-06295 are located approximately 340 meters (m), 1,000 m and 1,300 m downstream of Martin Spring, respectively. For MSC-16-06295, the alluvial well furthest downstream from Martin Spring, the groundwater hydrograph, provided by LANL, shows groundwater elevation changes consistent with seasonal variation from approximately 2005 to approximately 2014. Elevation of groundwater regularly rises to an elevation above ground level several times a year, likely resulting in intermittent flow in the lower elevation channel.

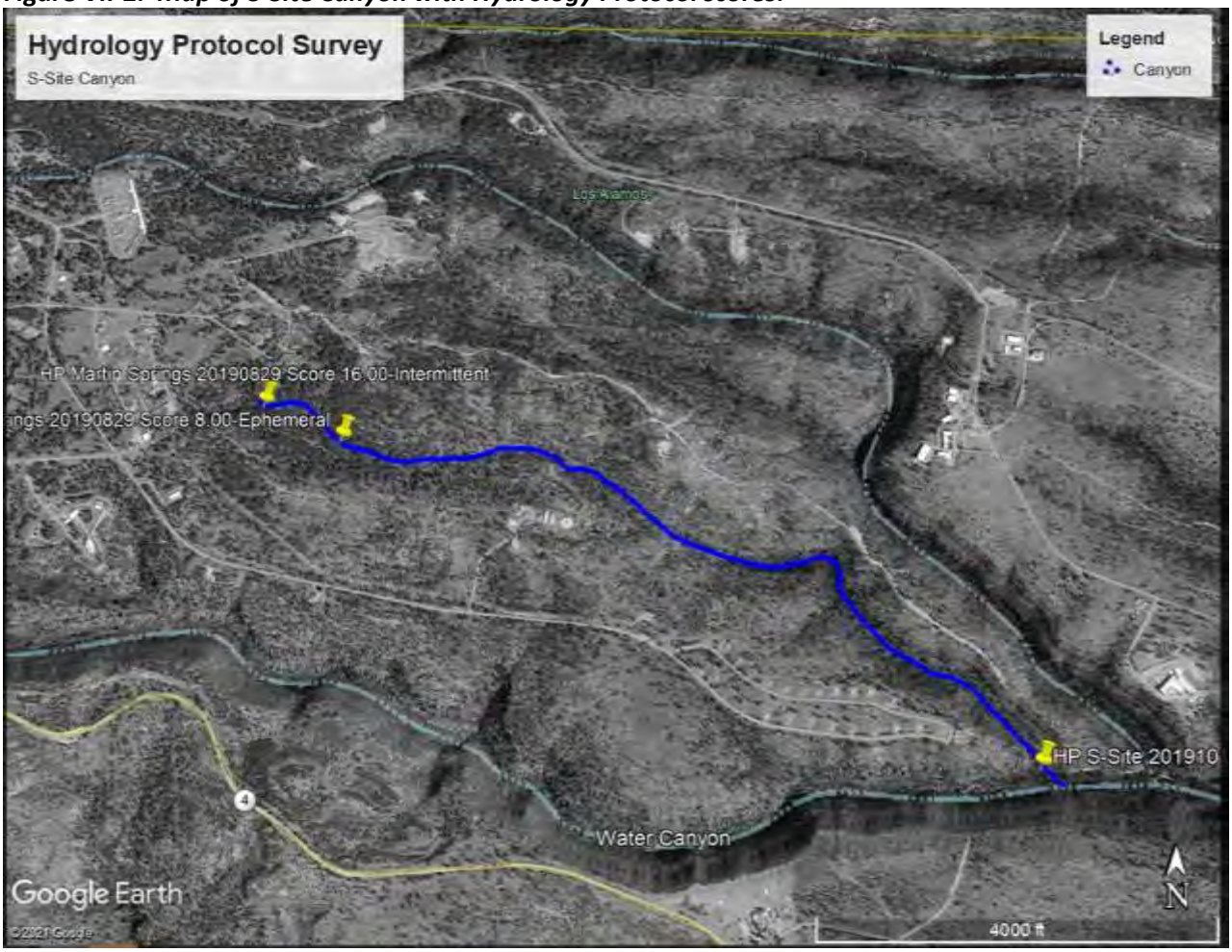
MSC-16-06294 also shows seasonal fluctuation in groundwater depth to levels just around a foot below ground elevation, which would likely result in surface water useable by aquatic life. However, based on the limited scope of this EUA, data for S-Site Canyon was only evaluated from alluvial monitoring well MSC 16-06293 upstream to Martin Spring. It should be noted that the alluvial well data for S-Site Canyon downstream of monitoring well MSC 16-06293 may be evaluated as part of a separate analysis for the lower reach of this tributary.

The data from alluvial monitoring well MSC-16-06293 indicate seasonal fluctuation in groundwater depth to levels just around a foot below ground elevation. The monitoring well, located above and outside the stream channel, indicates that seasonal surface water flows may be likely in the channel at this location, supporting the findings from the Hydrology Protocol surveys. Since groundwater is generally less responsive to direct precipitation, water levels shown in hydrographs are likely not due to a specific precipitation event.

Although the data from the hydrographs were qualitative, they illustrate general surface/subsurface interactions occurring within S-Site Canyon. Information indicates that seasonal levels in groundwater fluctuate regularly throughout S-Site Canyon to elevations at or above ground surface, likely resulting in surface water sufficient enough to support aquatic life at least from alluvial monitoring well MSC 16-06293 to Martin Spring. Therefore, S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring has an intermittent hydrologic regime. Due to sustained periods of water, the existing use is, at a minimum, that which protects aquatic life from chronic exposure to pollutants. **This intermittent hydrologic regime establishes that S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring has an existing aquatic life use of at least marginal warmwater.**

Although evidence was available at the time of this analysis, the hydrologic regime and existing use for S-Site Canyon from its confluence with Water Canyon to MSC 16-06293 was not evaluated as part of this EUA, based on lack of consensus as required under the stipulated agreement. Further analysis of the existing use for S-Site Canyon is warranted as part of a future investigation.

Figure VII-2. ***Map of S-Site Canyon with Hydrology Protocol scores.***



<u>Two-Mile Canyon</u> was surveyed in four locations using the Hydrology Protocol on September 12, 2019. These surveys occurred along the approximately two-mile stretch from the confluence of Two-mile Canyon with Pajarito Canyon to the convergence of Upper Two-Mile Canyon and Two-Mile Canyon (Figure VII-3). The 12-month standardized precipitation index for Los Alamos County from October 1, 2018 through September 30, 2019, was between 0 and 1; indicating normal to slightly above normal precipitation, ideal for using the survey methodology. Three of the surveys along this section of Two-Mile Canyon scored intermittent (18.00, 19.00 and 10.50), and one (identified as below TA-59) scored perennial (20.50).

The survey that scored 20.50 was conducted approximately 400 m upstream from "Two-Mile below TA-59" and approximately 500 m downstream from Two-Mile Canyon's confluence with Upper Two-Mile Canyon and, in accordance with the Hydrology Protocol survey methodology, is considered perennial until there is supporting evidence demonstrating it to be intermittent.

The survey that was conducted near E244, was the lowest score within Two-Mile Canyon but still scored within the intermittent range. This survey site was approximately 160 m from Two-Mile Canyon's

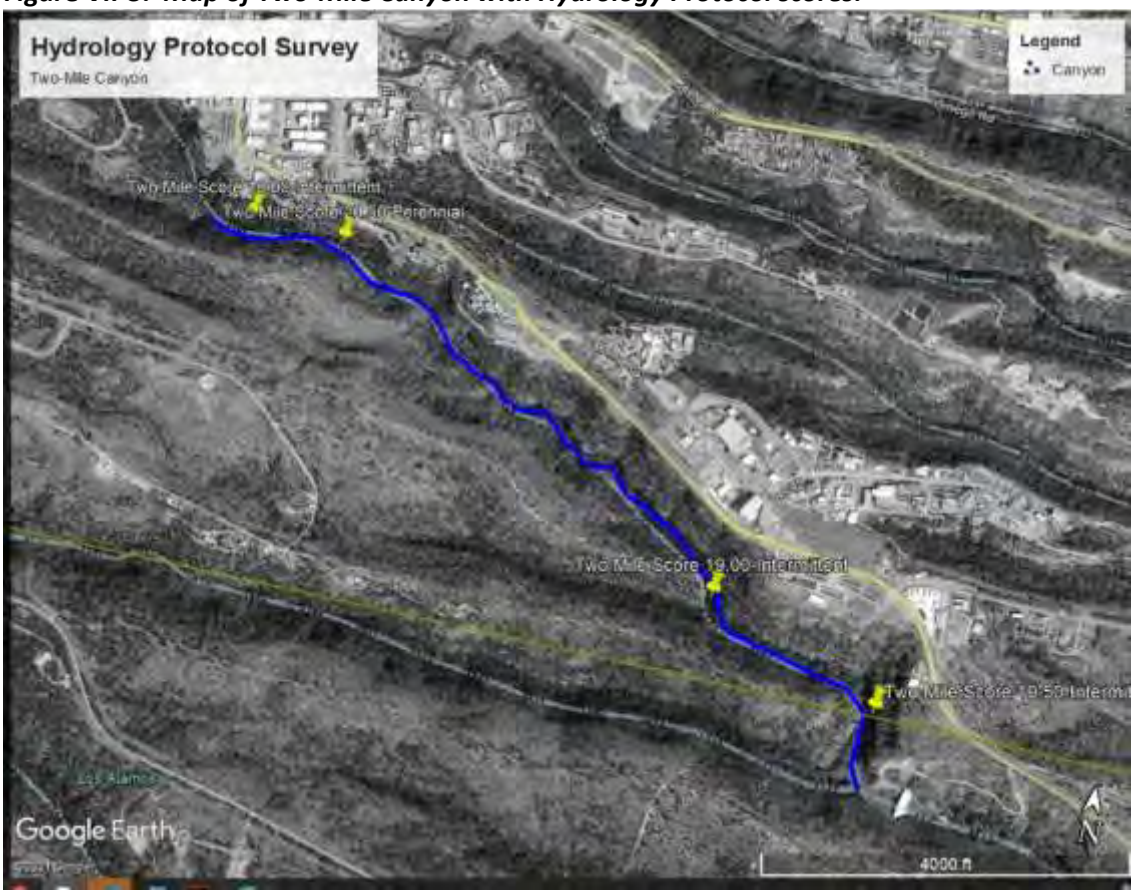
confluence with Pajarito and is believed to be representative of the reach down to the confluence with Pajarito Canyon.

Although there is some fluctuation throughout Two-Mile Canyon from its confluence with Pajarito Canyon to its confluence with Upper Two-Mile Canyon, overall, the entire reach is consistently intermittent.

Stream flow data was limited to two instantaneous measurements in April 2016 in Two-Mile Canyon (below TA-59). No hydrograph data was provided by LANL. Although streamflow data would have been supportive for determination, it is not required and does not influence the determination that Two-Mile Canyon from its confluence with Pajarito Canyon to its confluence with Upper Two-Mile Canyon has an intermittent hydrologic regime. Due to sustained periods of water, the existing use is, at a minimum that which protects aquatic life from chronic exposure to pollutants. **This intermittent hydrologic regime establishes that Two-Mile Canyon from its confluence with Pajarito Canyon to its confluence with Upper Two Canyon has an existing aquatic life use of at least marginal warmwater.**

Although evidence was available at the time of this analysis, the hydrologic regime and existing use for Two-Mile Canyon from its confluence with Upper Two-Mile Canyon to its headwaters was not evaluated as part of this EUA, based on lack of consensus as required under the stipulated agreement. Further analysis of the existing use for Two-Mile Canyon is warranted as part of a future investigation.

Figure VII-3. ***Map of Two-Mile Canyon with Hydrology Protocol scores.***



B. Temperature

Ambient water temperature is one of the criteria necessary to support aquatic life and can be a limiting factor given species temperature tolerance ranges. Most of the state's criteria for designated aquatic life uses include both a maximum temperature (Tmax) criterion, which is an acute exposure, as well as longer sustained temperature (4T3 or 6T3), which represents a chronic exposure. In order to accurately capture a "Tmax", "4T3" or "6T3", as defined under 20.6.4 NMAC, long-term deployment of a temperature data logger is required. However, instantaneous measurements can provide information on what temperatures are not attainable. Water temperature data was obtained from a query through Intellus from 1975-2021 for the temperature at all sites. Data is collected by LANL using LANL's IFGMPs.

Effluent Canyon did not have any direct water temperature measurements, but data collected from Mortandad Canyon below Effluent Canyon from 1997 to 2002 provided general information on stream temperature attainability for the microclimate affiliated with Effluent Canyon. The temperature data for Mortandad Canyon below Effluent Canyon (or E200) included 15 data points with a range from 1°C on March 2, 2007 at 11:07 am to 22.8°C on August 22, 2007 at 1:35 pm.

Since it is generally the maximum summer temperature that is of most concern for determining an existing use, and ambient air temperature is a driver of ambient water temperature, where groundwater inputs are minimal, a subset of ambient water temperature data for June, July and August was extracted from the dataset. This summertime subset included seven data points with a range of 12.3°C on June 3, 1997 at 9:00 am to 22.8°C on August 22, 2007. The median temperature was 16.3 °C with a standard deviation of 3.39 °C.

SWQB did not use the Bureau's Air-Water Temperature Correlation Model to model ambient maximum water temperatures because the model is not designed to evaluate this type of waterbody (i.e., non-perennial, known ground water influences, high gradient/steep canyon).

Since temperature grab data cannot be demonstrated to cover the warmest water temperatures of the year or particular day, it cannot be used to determine the maximum temperatures supporting an existing use. However, none of the reported temperatures exceed the temperature criteria for a marginal warmwater aquatic life use; therefore, **Effluent Canyon, based on an evaluation of temperature data from Mortandad Canyon, has an existing aquatic life use of at least marginal warmwater.**

S-Site Canyon (Martin Spring) had 53 sampling events with associated water temperature measurements. There were three identified sampling locations within the dataset; "Martin Lower SW filt samp port", "Martin Spring" and "Martin Upper SW Filt Samp Port." The latitude and longitude for all three sampling locations is at or near Martin Spring, and likely not equilibrated with the ambient air. However, the temperature data can provide information regarding water quality at or near Martin Spring.

The dataset, as extracted from Intellus, spanned from 1995 to 2020 with water temperature ranges from 5.5 °C on March 29, 2006 at 11:15 am to 18.7 °C on August 29, 2017 at 1:10 pm.

As described for Effluent Canyon, the dataset was filtered to assess water temperature for the summer months of June, July and August. The extracted dataset included 18 data points with a range of 10.4 °C on July 21, 1995 to 18.7 °C on August 29, 2017 at 1:10 pm. The median temperature was 12.8 °C with a standard deviation of 2.4 °C.

SWQB did not use the Bureau's Air-Water Temperature Correlation Model to model ambient maximum water temperatures because the model is not designed to evaluate this type of waterbody (i.e., non-perennial, known ground water influences, high gradient/steep canyon).

Since temperature grab data cannot be demonstrated to cover the warmest water temperatures of the year or particular day, it cannot be used to determine the maximum temperatures supporting an existing use. However, none of the reported temperatures exceed the temperature criteria for a marginal warmwater aquatic life use; therefore, **S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring, based on an evaluation of water temperatures from S-Site Canyon, has an existing aquatic life use of at least marginal warmwater.**

In addition, data collection activities support evidence found in the hydrology protocol surveys that the presence of water extends beyond periods of precipitation, further supporting the finding that intermittent hydrology exists.

Two-Mile Canyon had 23 data sampling events with associated water temperature measurement. There were three identified sampling locations within the dataset; "Two-Mile Canyon below TA-59", "Two-Mile above Pajarito" and "Two-Mile above Pajarito E244"; the latter two having the same longitude and latitude described for Two-Mile Canyon above Pajarito at E244. The overall range for the dataset spanned from 0.29 °C on December 19, 2008 at 11:00 am to 19.2 °C on June 27, 2007 at 2:52 pm. Because there is almost a 1.5 mile distance between the two sampling locations they were analyzed independently.

For Two-Mile below TA-59, there are 14 data points with a range between 0.29 °C on December 19, 2008 at 11:00 am to 19.2 °C on June 27, 2007 at 2:52 pm. As described for S-Site Canyon and Effluent Canyon, the dataset was filtered and evaluated for just the summer months of June, July and August, to which there were four data points between 2006 and 2010. The range spanned from 13.7 °C on August 25, 2006 at 9:30 am to 19.2 °C on June 27, 2007 at 2:52 pm with a median of 17.1 °C and a standard deviation of 2.3 °C.

For Two-Mile above Pajarito at E244, there are 9 data points with a range between 2 °C on December 17, 2007 at 11:40 am to 17.2 °C on June 27, 2007 at 11:45 am. As described for S-Site Canyon and Effluent Canyon, the dataset was filtered and evaluated for just the summer months of June, July and August, to which there were four data points between 1998 and 2010. The range spanned from 14.1 °C on August 29, 2006 at 8:40 am to 17.2 °C on June 27, 2007 at 11:45 am with a median of 15.38 °C and a standard deviation of 1.51 °C.

SWQB did not use the Bureau's Air-Water Temperature Correlation Model to model ambient maximum water temperatures because the model is not designed to evaluate this type of waterbody (i.e., non-perennial, known ground water influences, high gradient/steep canyon).

Since temperature grab data cannot be demonstrated to cover the warmest water temperatures of the year or particular day, it cannot be used to determine the maximum temperatures supporting an existing use. However, none of the reported temperatures exceed the temperature criteria for a marginal warmwater aquatic life use; therefore, **Two-Mile Canyon from Pajarito Canyon to Upper Two-Mile**

Canyon, based on an evaluation of water temperatures from Two-Mile Canyon, has an existing aquatic life use of at least marginal warmwater.

In addition, data collection provides indication that water is present, further supporting the finding that intermittent hydrology exists

C. pH

For data associated with Effluent Canyon, S-Site Canyon and Two-Mile Canyon, the circumneutral range for pH will be used to determine the existing use for each of the Canyons.

Effluent Canyon did not have any direct pH measurements, but data collected from Mortandad Canyon below Effluent Canyon from 1997 to 2002 provided general information on stream pH range attainable for Effluent Canyon. It was verified with the provided latitude and longitude that "Mortandad below Effluent Canyon" and "Mortandad below Effluent E200" are in the same geographic location and were therefore analyzed as one dataset.

There were 26 data points between 1997 and 2009 with a pH range from 5.63 Standard Units ("SU") to 8.79 SU, a median of 7.15 SU and a standard deviation of 0.62 SU. Twenty-four out of the 26 measurements (92%) were within the pH range criterion for designated aquatic life uses, with the exception of limited aquatic life, which has no pH range. This range indicates Mortandad Canyon has an existing aquatic life use of at least marginal warmwater. Given flow to Mortandad Canyon is in part from Effluent Canyon, **Effluent Canyon, based on an evaluation of pH data from Mortandad Canyon, has an existing aquatic life use of at least marginal warmwater and an existing primary contact recreational use.**

S-Site Canyon (Martin Spring) had 53 sampling events between 1995 and 2020 associated water pH measurements. There were three identified sampling locations within the dataset; "Martin Lower SW filt samp port", "Martin Spring" and "Martin Upper SW Filt Samp Port." The latitude and longitude for all three sampling locations is at or near Martin Spring, therefore the data were analyzed as one dataset.

The dataset had a pH range between 5.69 SU and 7.79 SU with a median of 6.95 SU and a standard deviation of 0.39 SU. Fourty-seven out of the 53 measurements (89%) were within the pH range criterion for designated aquatic life uses, with the exception of limited aquatic life, which has no pH range. **This range indicates that S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring, based on an evaluation of pH data, has an existing aquatic life use of at least marginal warmwater and an existing primary contact recreational use.**

Two-Mile Canyon There were three identified sampling locations within the dataset; "Two-Mile Canyon below TA-59", Two-Mile above Pajarito" and "Two-Mile above Pajarito E244"; the latter two having the same longitude and latitude and being described here as Two-Mile Canyon above Pajarito at E244. Because there is almost a 1.5 mile distance between the two sampling locations, they were analyzed independently.

Two-Mile above Pajarito at E244 had 26 data points between 1998 and 2010 with a pH range between 6.11 SU and 7.7 SU, a median of 7.01 SU and a standard deviation of 0.35 SU. Twenty-three out of the 26 measurements (88%) were within the pH range criterion for designated aquatic life uses, with the

exception of limited aquatic life which has no pH range. This range indicates Two-Mile Canyon above Pajarito has an existing aquatic life use of at least marginal warmwater.

Two-Mile below TA-59 had 14 data points between 2006 and 2019 with a pH range between 6.07 SU and 7.84 SU with a median of 7.15 SU and a standard deviation of 0.42 SU. Thirteen out of the 14 measurements (93%) were within the pH range criterion for designated aquatic life uses, with the exception of limited aquatic life, which has no pH range. This range indicates Two-Mile Canyon below TA-59 has an existing aquatic life use of at least marginal warmwater.

Since findings from both Two-Mile Canyon above Pajarito Canyon at E244 and Two-Mile Canyon below TA-59 are consistent, it can be asserted that **Two-Mile Canyon from Pajarito Canyon to Upper Two-Mile Canyon has an existing aquatic life use, based on an evaluation of pH data, of at least marginal warmwater and an existing primary contact recreational use**.

D. Dissolved Oxygen

For data associated with Effluent Canyon, S-Site Canyon and Two-Mile Canyon, the range and highest concentration of DO will be evaluated to demonstrate the highest concentration each tributary has been able to attain.

Effluent Canyon did not have any direct DO measurements. Still, data collected from Mortandad Canyon below Effluent Canyon provided general information on DO that would be expected to be attainable for Effluent Canyon as well, given there are no identifiable conditions to make Effluent Canyon significantly different from Mortandad Canyon. It was verified with the provided latitude and longitude that "Mortandad below Effluent Canyon" and Mortandad below Effluent E200" are at the same geographic location and were therefore analyzed as one dataset.

There were 10 data points between 1997 and 2009 with a DO ranging from 2.08 miligrams per liter ("mg/L") to 175.7 mg/L.

There were several measurements, that although marked to be useable by LANL appear to be erroneous given that 100% saturation of oxygen in water at 7,320 feet above sea level and 25°C (75°F) would be just over 6 mg/L, as determined through the use of a DO conversion calculator (https://www.waterontheweb.org/). SWQB evaluated the validity of all DO values, as described below.

The sample taken on October 27, 2006 had a DO concentration of 175.7 mg/L, which is equivalent to 100% saturation when ambient air temperatures are below -40.4°C (-40.5°F). This is highly unlikely given the average low for October in Los Alamos County according to Climate-Data.org is 1.8°C (35.2°F) and it is highly unlikey a water temperature significantly less than 0 °C would be measured (it would be ice) Therefore, SWQB considered this data point an outlier and removed it from the dataset used for this analysis. The other nine data points represented values within expected ranges and were considered useable for this analysis.

Of the data points not considered outliers, the range was between 2.08 mg/L to 11.93 mg/L with a median of 5.98 mg/L and standard deviation of 3.19 mg/L, indicating high variability for DO. It is acknowledged that measurements for DO can fluctuate greatly based on calibration techniques, sensor function and barometric pressure. Even with the high variability, five out of the nine measurements (56%) had a DO

concentration greater than 5 mg/L; however, these data points are not indicative of the naturally occurring diel DO cycle. Given flow to Mortandad Canyon is in part from Effluent Canyon, **Effluent Canyon, based on DO, has an existing aquatic life use of at least marginal warmwater.**

S-Site Canyon (Martin Spring) had 45 sampling events between 2005 and 2020 associated water DO measurements. There were three identified sampling locations within the dataset; "Martin Lower SW filt samp port", "Martin Spring" and "Martin Upper SW Filt Samp Port." The latitude and longitude for all three sampling locations is at or near Martin Spring, therefore the data were analyzed as one dataset.

The dataset had a DO range between 2.9 mg/L to 69.51 mg/L. There were several measurements, that although marked to be useable by LANL appear to be erroneous given that 100% saturation of oxygen in water at 7,320' and 25°C (75°F) would be just over 6 mg/L, as determined through the use of a DO conversion calculator (https://www.waterontheweb.org/). SWQB evaluated the validity of all DO values, as described below.

For July, the average temperature, according to Climate-Data.org, is 19.5°C (67.2°F), which corresponds to an estimated DO concentration of 6.94 mg/L at 100% saturation and 7,320 feet above sea level. Data collected on July 28, 2006 are all an order of magnitude greater than the estimated maximum concentration and were considered outliers and not used for the analysis.

Given the average temperature for March is 2.2°C (36°F) for Los Alamos County, as obtained from Climate-Data.org, the corresponding DO concentration at 100% saturation is 10.46 mg/L. In addition, given an average low of -4.5°C (23.9°F), the corresponding DO concentration at 100% saturation is 12.75 mg/L. The sample taken on March 24, 2009 had a measured DO concentration of 14 mg/L, which would be the estimated DO concentration at 100% saturation when the temperature is approximately -7.8°C (18°F). Although possible, a water temperature of -7.8°C (18°F) is highly improbable; therefore, this data point was considered an outlier and not used for the analysis.

Of the 41 useable data points, the range was between 2.9 mg/L and 9.62 mg/L with a median of 7.47 mg/L and a standard deviation of 1.55 mg/L. Thirty-six out of the 41 useable measurements (90%) had a DO concentration greater than 6.0; however, these data points are not indicative of the naturally occurring diel DO cycle. The data indicate that **S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring**, **based on DO**, **has an existing aquatic life use of at least marginal warmwater**.

Two-Mile Canyon had 22 data sampling events between 2006 and 2019 with water DO measurements. There were two identified sampling locations within the dataset; "Two Mile Canyon below TA-59" and "Twomile above Pajarito." Because there is almost a 1.5 mile distance between the two data points they were analyzed independently.

Two-Mile above Pajarito at E244 had 10 data points between 2006 and 2010 with a DO range between 6.6 mg/L and 140 mg/L. The validity of the DO measurement taken August 29, 2006 was estimated using average elevation of 7,320' and average temperature of 17.8°C (64.1°F) as obtained from Climate-Data.org. The DO measurement of 140 mg/L is approximately 20 times the estimated 100% saturation concentration of 7.21 mg/L. Therefore, this data point was determined to be an outlier and not used for his analysis. The other 9 data points were considered useable for this analysis.

The nine useable data points for DO at Two-Mile above Pajarito at E244 ranged from 6.6 mg/L to 11.5 mg/L with a median of 8.64 mg/L and a standard deviation of 1.65 mg/L. All nine measurements (100%) had a DO concentration of 6 mg/L or greater, however these data points are not indicative of the diel DO cycle necessary for support of aquatic life. The data, at best, indicate that **Two-Mile Canyon above Pajarito at E244, based on DO, has an existing aquatic life use of at least marginal warmwater.**

Two-Mile below TA-59 had 14 data points between 2006 and 2019 with a DO range between 16.85 mg/L and 3.74 mg/L. The validity of the DO measurement taken December 19, 2008 was estimated using average elevation of 7,320 feet above sea level and average temperature of -3.7°C (25.4°F) as obtained from Climate-Data.org. The DO measurement of 16.85 mg/L was well above an estimated 100% saturation concentration of 12.44 mg/L. Therefore, this data point was determined to be an outlier and not used for his analysis. The other 13 data points were considered useable for this analysis.

The 13 useable data points for DO at Two-Mile below TA-59 ranged from 3.74 mg/L to 10.12 mg/L with a median of 7.62 mg/L and a standard deviation of 2.07 mg/L. Ten out of the 13 measurements (77%) had a DO concentration of 6 mg/L or greater; however, these data points are not indicative of the naturally occurring diel DO cycle. The data indicate that **Two-Mile Canyon below TA-59, based on DO, has an existing aquatic life use of at least marginal warmwater.**

E. Aquatic Life

The presence/absence of benthic macroinvertebrates extrapolated from the Level 1 and Level 2 Hydrology Protocol surveys was used to support the determination for existing uses of at least marginal warmwater aquatic life. The absence of benthic macroinvertebrates is indeterminate for establishing an existing use given various factors affecting the presence and bias in observational findings.

Effluent Canyon

One Level 1 Hydrology Protocol survey was conducted by representatives from both LANL and SWQB on September 5, 2019 in Effluent Canyon "below 051 Outfall." Benthic macroinvertebrates (hairworms and water mites) were observed but only through extensive searching in a predominately dry channel with standing pools and saturated substrate.

One Level 2 Hydrology Protocol survey conducted by representatives from LANL on October 22, 2019 in Effluent Canyon "below 051 Outfall" indicates presence of benthic macroinvertebrates, supporting the findings from the Level 1 survey.

Effluent Canyon, based on the presence of benthic macroinvertebrates, has an existing aquatic life use of at least marginal warmwater.

S-Site Canyon

Two Level 1 Hydrology Protocol surveys were conducted by representatives from both LANL and SWQB on August 29, 2019 in S-Site Canyon "at MSC 16-06293" and "below Martin Springs." At the time of the survey for "Martin Spring at MSC 16-06293", the channel had no standing water and no macroinvertebrates were observed. However, at the location "below Martin Spring" benthic macroinvertebrates (mayfly, mosquito larvae and water beetle) were observed with little difficulty but not throughout the reach, which consisted of standing pools and saturated substrate.

One Level 2 Hydrology Protocol survey "below Martin Spring" conducted by representatives from LANL on October 17, 2019 indicates the presence of benthic macroinvertebrates (Order: Trichoptera), supporting the findings from the Level 1 survey.

Another Level 1 Hydrology Protocol survey was conducted in S-Site Canyon by representatives from both LANL and SWQB on October 17, 2019, near the confluence with Water Canyon, upstream of E261. At the time of the survey the channel had no standing water and no macroinvertebrates were observed.

S-Site Canyon from monitoring well MSC 16-06293 upstream to Martin Spring, based on the presence of benthic macroinvertebrates, has an existing aquatic life use of at least marginal warmwater.

Two-Mile Canyon

Four Level 1 Hydrology Protocol surveys were conducted by representatives from both LANL and SWQB on September 12, 2019 along Two-Mile Canyon from its confluence with Pajarito Canyon to the confluence with Upper Two-Mile Canyon. Benthic macroinvertebrates were observed in three of the four survey sites. Only the survey site just above Pajarito Canyon at E244, which was dry at the time of the survey, resulted in no observed benthic macroinvertebrates. **Two-Mile Canyon, based on the presence of benthic macroinvertebrates, has an existing aquatic life use of at least marginal warmwater.**

Table. VII-1. *Summary of existing uses for Effluent Canyon, S-Site Canyon from monitoring well MSC 16-06293 upstream to Martin Spring and Two-Mile Canyon from its confluence with Pajarito to Upper Two-Mile Canyon.*

Parameter	Effluent Canyon	S-Site Canyon (Martin Spring)	Two-Mile Canyon
Hydrology	≥ Marginal Warmwater	≥ Marginal Warmwater	≥ Marginal Warmwater
Temperature	≥ Marginal Warmwater	≥ Marginal Warmwater	≥ Marginal Warmwater
pH	≥ Marginal Warmwater	≥ Marginal Warmwater	≥ Marginal Warmwater
Dissolved Oxygen	≥ Marginal Warmwater	≥ Marginal Warmwater	≥ Marginal Warmwater
Aquatic Life	≥ Marginal Warmwater	≥ Marginal Warmwater	≥ Marginal Warmwater
Other Numeric Criteria	Not assessed	Not assessed	Not assessed
E. coli	Not assessed	Not assessed	Not assessed

F. Findings

A EUA is conducted to analyze the appropriate designated use based on the existing use. For this analysis, NMED evaluated the existing uses for Effluent Canyon, S-Site Canyon and Two-Mile Canyon, within LANL.

- There is regulatory authority under 40 C.F.R. § 131.10(i) to conduct an analysis and amend the designated uses to be at least the existing uses.
- There is regulatory authority under 40 C.F.R. § 131.20 to conduct a review and analysis, and amend the designated uses if more stringent uses specified in CWA § 101(a)(2) are attainable.
- Based on the findings from discussions concluding in December 2020, which were conducted as part of a Joint Stipulation between LANL, Amigos Bravos and NMED, this analysis was limited in scope to Effluent Canyon, S-Site Canyon from alluvial monitoring well MSC 16-06293 to Martin Spring, and Two-Mile Canyon from its confluence with Pajarito Canyon to Upper Two-Mile Canyon.

- Effluent Canyon, S-Site Canyon and Two-Mile Canyon currently have a designated limited aquatic life use and a secondary contact recreational use along with designated uses for livestock watering and wildlife habitat.
- Since livestock watering and wildlife habitat uses are designated uses for all waters of the state, these uses were not evaluated as part of this analysis.
- There was reasonable evidence that the existing aquatic life and recreational uses for these waters may be more stringent than the current designated uses.
- The analysis found that the waters in this analysis are not Outstanding National Resource Waters and amending the designated uses to be more stringent would not violate the State's antidegradation policy.
- The analysis determined that amending the designated use to a more stringent existing use will not violate the State's antidegradation policy.
- Amending the designated use to a more stringent existing use will not impact or degrade downstream waters.
- Amending the designated use to a more stringent existing use will not impose harm to threatened and endangered species documented within the area of Effluent Canyon, S-Site Canyon, and Two-Mile Canyon.
- There are no specific site conditions that would impact an existing use.
- Available *E. coli* data for Effluent Canyon, S-Site Canyon and Two-Mile Canyon is insufficient to demonstrate whether primary contact is the existing recreational use.
- Until such a time when additional information indicates that primary contact is the existing use, secondary contact will remain the recreational use for Effluent Canyon, S-Site Canyon and Two-Mile Canyon.
- Effluent, S-Site Canyon from MSC 16-06293 to Martin Spring, and Two-Mile Canyon from its confluence with Pajarito Canyon to Upper Two-Mile Canyon have intermittent hydrological regimes.
- The presence of water within these tributaries establishes that the existing aquatic life use is no less stringent than one that can protect for chronic exposure to pollutants.
- The current designated limited aquatic life use does not provide protection for chronic exposure; therefore, the existing aquatic life use is more stringent than the designated aquatic life use.
- The available temperature, pH, and DO data and the presence of benthic macroinvertebrates support the determination that Effluent Canyon has an existing aquatic life use of at least marginal warmwater.
- The available temperature, pH, and DO data and the presence of benthic macroinvertebrates support the deteremination that S-Site Canyon from monitoring well, MSC 16-06293 to Martin Spring has an existing aquatic life use of at least marginal warmwater.
- The available temperature, pH, an DO data and the presence of benthic macroinvertebrates support the determination that Two-Mile Canyon from its confluence with Pajarito Canyon to Upper Two-Mile Canyon has an existing aquatic life use of at least marginal warmwater.
- In accordance with 40 C.F.R. § 131.10(i), the existing use may not be less than the designated use. Therefore, the findings of this EUA support amending the designated aquatic life uses for Effluent Canyon, S-Site Canyon and Two-Mile Canyon to at least marginal warmwater.
- In accordance with 40 C.F.R. 131.20, through this EUA it has been demonstrated that more stringent (aquatic life) uses specified in CWA § 101(a)(2) are attainable. Therefore, the findings of this EUA support amending the designated aquatic life uses for Effluent Canyon, S-Site Canyon and Two-Mile Canyon to at least marginal warmwater.

- The findings of this analysis were based on available data at the time of analysis and do not preclude future analyses of existing uses.

This EUA demonstrates the existing aquatic life use for Effluent Canyon is at least marginal warmwater and the designated aquatic life use for this waterbody under 20.6.4 NMAC should be amended to be reflective of the existing use. The recreational use did not have sufficient evidence at this time to determine an existing use with more stringent criteria than secondary contact.

This EUA demonstrates the existing aquatic life use for S-Site Canyon from MSC-16-06293 upstream to Martin Spring is at least marginal warmwater and the designated aquatic life use for this waterbody under 20.6.4 NMAC should be amended to be reflective of the existing use. The recreational use did not have sufficient evidence at this time to determine an existing use with more stringent criteria than secondary contact.

This EUA demonstrates the existing aquatic life use for Two-Mile Canyon from Pajarito Canyon upstream to Upper Two-Mile Canyon is at least marginal warmwater and the designated aquatic life use for this waterbody under 20.6.4 NMAC should be amended to be reflective of the existing use. The recreational use did not have sufficient evidence at this time to determine an existing use with more stringent criteria than secondary contact.

Table VIII-1. *Selected sections non-perennial portions and highest attainable designated uses.*

Current WQS	Proposed WQS	Waterbody Description	Designated RU	Existing RU	Designated ALU	Existing ALU	LW	WH
20.6.4.128	20.6.4.140	Effluent Canyon from its confluence with Mortandad Canyon to its headwaters	SC	ID	LAL	MWW*	Y	Y
20.6.4.128	20.6.4.140	S-Site Canyon from monitoring well MSC 16-06293 upstream to Martin Spring	SC	ID	LAL	MWW*	Y	Y
20.6.4.128	20.6.4.140	Two-Mile Canyon from its confluence with Pajarito Canyon upstream to Upper Two-Mile Canyon	SC	ID	LAL	MWW*	Y	Y

"*" denotes a proposed amendment based on existing use
"RU" denotes designated recreational use
"SC" denotes secondary contact recreational use
"ID" denotes indeterminate
"LAL" denotes Limited aquatic life designated aquatic life use
"MWW*" denotes marginal warmwater designated aquatic life use
"LW" denotes livestock watering
"WH" denotes wildlife habitat
"Y" denotes this is proposed to remain as a designated use for the listed waterbody

VIII. Proposed Amendments to Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC)

The evidence presented in this EUA supports the designation of marginal warmwater aquatic life for Effluent Canyon, the upper reaches of S-Site Canyon and Two-Mile Canyon from its confluence with Pajarito to Upper Two-Mile Canyon. The designated uses for unclassified non-perennial waters are livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact, as listed under 20.6.4.98 NMAC. NMED recommends that the following referenced classified waters 20.6.4.101-20.6.4.899 NMAC be amended as follows:

20.6.4.128 RIO GRANDE BASIN: [-] Ephemeral and intermittent ~~watercourses~~waters within lands managed by U.S. department of energy (DOE) within LANL , 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 or 20.6.4.140 NMAC. (Surface waters 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).

[20.6.4.128 NMAC - N, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

[**NOTE:** This section was divided effective XX/XX/XXXX. The standards for some intermittent waters within LANL are in 20.6.4.140 NMAC.]

20.6.4.140 RIO GRANDE BASIN: Effluent canyon from Mortandad canyon to its headwaters, intermittent portions of S-Site canyon from monitoring well MSC 16-06293 to Martin spring, and intermittent portions of Two-Mile canyon from its confluence with Pajarito canyon to Upper Two-Mile canyon. (Surface waters within lands scheduled for transfer from DOE to tribal, state or local authorities are specifically excluded.)

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

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

[20.6.4.140 NMAC - N, XX/XX/XXXX]

IX. References

A. Federal and State Acts

- Federal Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq*. https://www.epa.gov/sites/production/files/2017-08/documents/federal-water-pollution-control-act-508full.pdf. (accessed March 3, 2021).

- Federal Endangered Species Act (ESA), 16 U.S.C. Code § 1531 *et seq*.

- New Mexico Water Quality Act, NMSA 1978, §§ 74-6-1 through 74-6-17 (2009). https://nmonesource.com/nmos/nmsa/en/item/4415/index.do#!fragment/zoupio-_Toc40794247/BQCwhgziBcwMYgK4DsDWszIQewE4BUBTADwBdoAvbRABwEtsBaAfX2zgBYAGAdgE4OAJg48AlABpk2UoQgBFRIVwBPaAHI14iHFzYANnoDCSNNACEyLYTC4ECpao1WbCAMp5SAIVUAlAKIAMn4AagCCAHKGfuKkYABG0KTsoqJAA. (accessed March 3, 2021).

B. Federal and State Regulations

- United States of America Code of Federal Regulations, Title 40-Protection of the Environment, Chapter I-Environmental Protection Agency, Subchapter D-Water Programs, Part 131-Water Quality Standards. 40 C.F.R. § 131, (2019). https://www.ecfr.gov/cgi-bin/text-idx?SID=1ad232e82435ddd65675d84e8dd604dd&mc=true&node=pt40.24.131&rgn=div5. (accessed March 3, 2021).

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Appendix A
Available Data Extracted for Determination of Existing Uses

A. Effluent canyon

1. Hydrology Protocol surveys (Level 1)

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 9/5/2019	Stream Name: Effluent Canyon	Latitude: 35°51'54" N
Evaluator(s): See Notes	Site ID: Below outfall [illegible]	Longitude: 106°17'52" W
TOTAL POINTS: 15	Assessment Unit: N/A	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours?
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover X clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover X clear/sunny	___ YES X NO [illegible] OTHER: Stream Modifications X YES ___ NO Diversions ___ YES X NO Discharges X YES ___ NO [illegible]

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.1. Water in Channel	[illegible]	[illegible]	[illegible]	Dry channel. No evidence of base flow was found.
	6	4	(2)	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	2	(1)	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	2	1	(0)
1.5. Differences in Vegetation [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	(1.5) 1	0
1.6. Absence of Rooted Upland Plants in Streambed	[illegible]	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg.	[illegible]
	3	(2)	1	0
SUBTOTAL (#1.1 – #1.6)				6.5

[illegible] EPHEMERAL. [illegible] PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. [illegible] continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.7. Sinuosity	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
1.8. Floodplain and Channel Dimensions	[illegible]	Ratio between 1.2 and 2.5. 1.76 [illegible]	[illegible]	
	3	(1.5)	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	[illegible]	[illegible]	[illegible]	There is no sequence exhibited.
	(3)	2	1	0
SUBTOTAL (#1.1 – #1.9)				13

[illegible] EPHEMERAL. [illegible] PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. [illegible] continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	Strong	Moderate	Weak/Poor	
1.10. Particle Size or Stream Substrate Sorting	[illegible]	[illegible]	[illegible]	
	3	(1.5)	0	
1.11. Hydric Soils	[illegible]	[illegible]		
	Present = 3	Absent = (0)		
1.12. Sediment on Plants and Debris	[illegible]	[illegible]	[illegible]	No sediment is present on plants or debris.
	1.5	1	(0.5)	0
TOTAL POINTS (#1.1 – #1.12)				15

SUPPLEMENTAL INDICATORS [illegible]		
1.13. Seeps and Springs [illegible]	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	Absent = (0)
1.14. Iron Oxidizing Bacteria/Fungi	[illegible]	[illegible]
	Present = 1.5	Absent = (0)
TOTAL plus SUPPLEMENTAL POINTS (#1.1 – #1.14)		15

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Right Bank	
4	Left Bank	
5	Overall Channel - Downstream	
6	[illegible] - [illegible]	

NOTES:

Evaluators: [illegible], [illegible], [illegible], [illegible], [illegible] Rodriguez

Stream modification: SEP Grade Control Structure

Findings - Downstream of outfall 051 - not currently discharging
* 21,345 gallons of effluent discharge from outfall on a single day in June 2019

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: ____________ Storet ID: ____________

Date: ____________ Crew: ____________

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm	N/A [illegible]			
Cobble	64 – 256	9/4/19			
Boulder	> 256 mm				
Bedrock	—				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects-depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankful Width)
9.23'	8.50'	.73'	1.46'	7.77'	6.4'	5.0'	1.28

**REFER to Figure 3 on page 19 for clarification

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:41:36 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0.25
9	2	2019	245	0
9	3	2019	246	0
9	4	2019	247	0

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:42:11 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0.16
9	2	2019	245	0
9	3	2019	246	0
9	4	2019	247	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:42:59 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0.04
9	2	2019	245	0
9	3	2019	246	0
9	4	2019	247	0

Data is for tower ta54.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:43:28 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0
9	2	2019	245	0.19
9	3	2019	246	0
9	4	2019	247	0

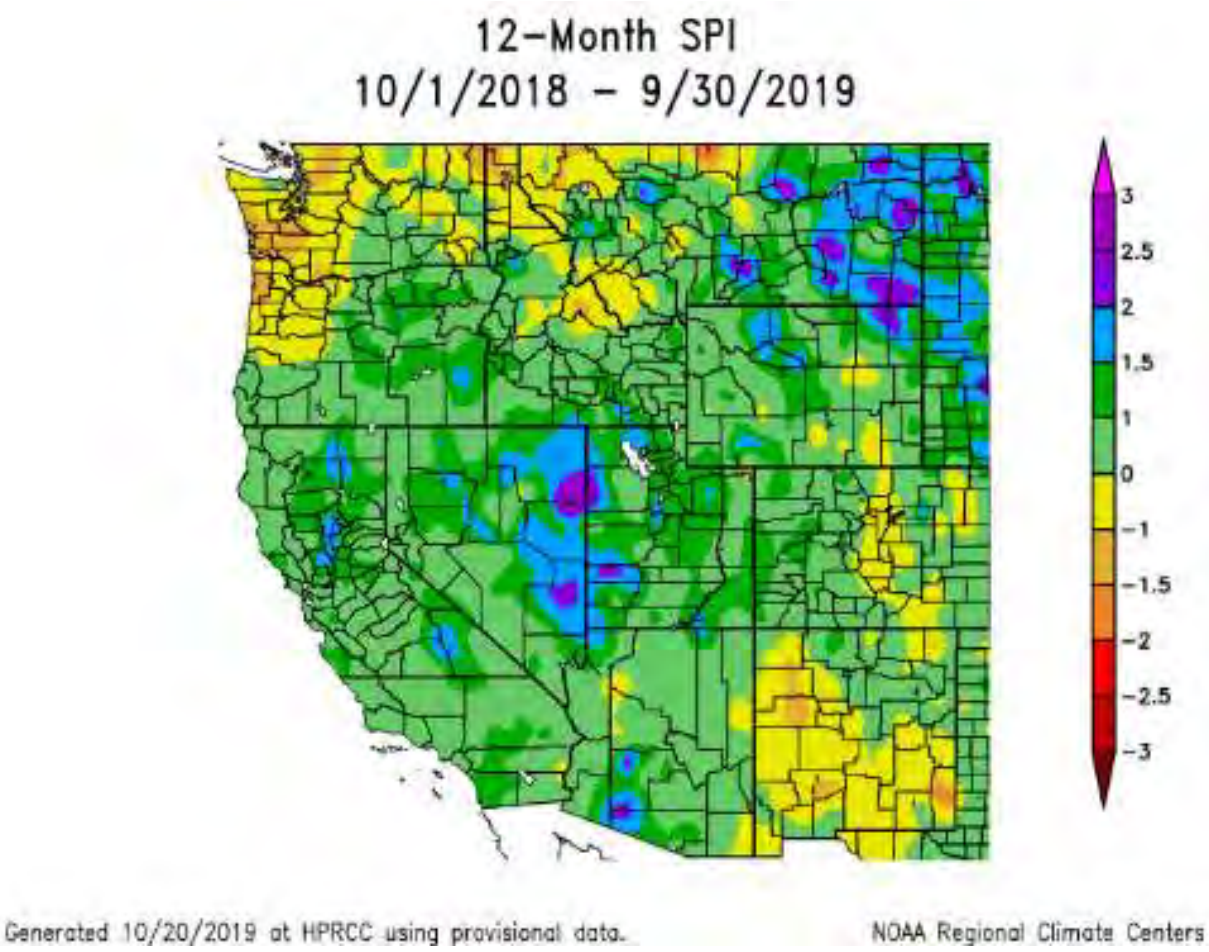

September 5, 2019
Effluent below outfall
051 + SEP Grade Control
Photo 1: Upstream
September 5, 2019
Effluent below outfall
051 + SEP Grade Control
Photo 2: D/S
September 5, 2019
Effluent below outfall
051 + SEP Grade Control
Photo 4: Left Bank


September 5, 2019
Effluent below outfall
051 + SEP Grade Control
Photo 5 - Downstream

2. 12- month SPI

High Plains Regional Climate Center - https://hprcc.unl.edu/maps.php?map=ACISClimateMaps

October 1, 2018 through September 30, 2019



3. Stream gage stations from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)
N3B	E-1W	Flow (in cfs)	09-07-2005	09:30	0.007	CFS	35.8650326	-106.2988345
N3B	E-1W	Flow (in cfs)	06-27-2006	09:00	0.01	CFS	35.8650326	-106.2988345
N3B	E-1W	Flow (in cfs)	10-19-2006	08:15	0.0008	CFS	35.8650326	-106.2988345
N3B	E-1W	Flow (in cfs)	03-01-2007	11:35	0.01	CFS	35.8650326	-106.2988345
N3B	E-1W	Flow (in cfs)	06-18-2007	12:40	0.01	CFS	35.8650326	-106.2988345

4. Stream hydrograph from LANL

No stream hydrographs were provided

5. Precipitation from NOAA

https://www.ncdc.noaa.gov/cdo-web/search

6. Alluvial hydrographs from LANL

No alluvial hydrographs were provided

7. Water temperature from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Month	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Mortandad below Effluent Canon	Temperature	08-22-2007	8	13:35	22.8	deg C	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	Temperature	07-30-2003	7	09:20	17.4	deg C	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	Temperature	08-20-2008	8	12:35	16.9	deg C	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	Temperature	06-09-2004	6	09:30	16.3	deg C	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	Temperature	08-18-2009	8	11:00	15.2	deg C	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	Temperature	06-28-2006	6	09:40	13.5	deg C	35.8654418	-106.2961255	Y
NMED	Mortandad below Effluent E200	Temperature	06-03-1997	6	09:00	12.3	C	35.865442	-106.296126	Y
					Median	16.30	deg C			

					Standard Deviation	3.39	deg C			

8. Water pH from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Mortandad below Effluent Canon	pH	06-22-2006	15:00	5.63	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	02-21-2008	13:10	6.5	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	03-02-2007	11:07	6.63	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	06-29-2006	16:10	6.68	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	06-11-2007	21:38	6.73	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	06-16-2007	15:13	6.89	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	08-25-2006	11:43	6.91	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	08-18-2009	11:00	6.92	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	08-19-2006	14:48	6.95	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	07-15-2005	15:20	6.97	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	08-20-2008	12:35	7.1	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	11-18-2008	14:07	7.1	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	03-23-2007	09:10	7.14	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	07-20-2005	15:01	7.16	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	05-03-2005	15:07	7.17	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	10-27-2006	09:10	7.22	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	06-28-2006	09:40	7.38	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	05-02-2007	00:48	7.4	SU	35.8654418	-106.2961255	Y
NMED	Mortandad below Effluent E200	pH	06-03-1997	09:00	7.52	SU	35.865442	-106.296126	Y
N3B	Mortandad below Effluent Canon	pH	08-22-2007	13:35	7.62	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	02-12-2009	15:00	7.78	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	06-09-2004	09:30	7.86	SU	35.8654418	-106.2961255	Y
NMED	Mortandad below Effluent E200	pH	04-18-2001	09:30	7.87	SU	35.865442	-106.296126	Y
N3B	Mortandad below Effluent Canon	pH	05-28-2002	16:00	7.98	SU	35.8654418	-106.2961255	Y

N3B	Mortandad below Effluent Canon	pH	07-30-2003	09:20	8.1	SU	35.8654418	-106.2961255	Y
N3B	Mortandad below Effluent Canon	pH	04-24-2005	07:47	8.79	SU	35.8654418	-106.2961255	Y
				Median	7.15	SU			
				Standard Deviation	0.62	SU			

9. Water Dissolved oxygen from Intellus

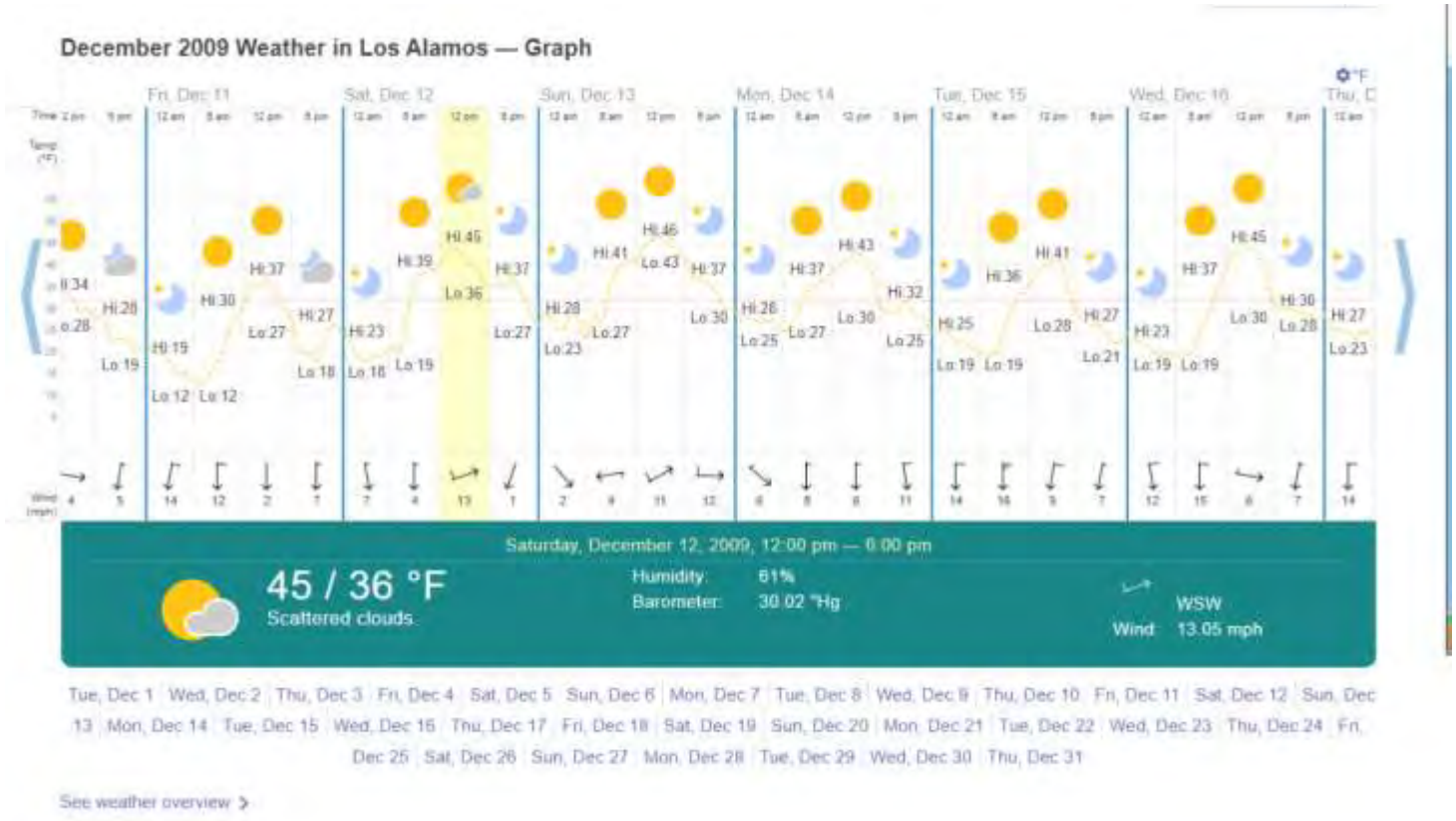
Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	10-27-2006	09:10	175.7	mg/L	35.8654418	-106.2961255	Y	Not used
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	02-12-2009	15:00	11.93	mg/L	35.8654418	-106.2961255	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	02-21-2008	13:10	8.84	mg/L	35.8654418	-106.2961255	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	11-18-2008	14:07	7.66	mg/L	35.8654418	-106.2961255	Y	
NMED	Mortandad below Effluent E200	Dissolved Oxygen	06-03-1997	09:00	7	mg/L	35.865442	-106.296126	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	03-02-2007	11:07	5.16	mg/L	35.8654418	-106.2961255	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	08-22-2007	13:35	4.87	mg/L	35.8654418	-106.2961255	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	08-20-2008	12:35	3.9	mg/L	35.8654418	-106.2961255	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	06-28-2006	09:40	2.43	mg/L	35.8654418	-106.2961255	Y	
N3B	Mortandad below Effluent Canon	Dissolved Oxygen	08-18-2009	11:00	2.08	mg/L	35.8654418	-106.2961255	Y	
				Median	5.98	mg/L				
				Standard Deviation	3.19	mg/L				

10. Weather data

December 12, 2009

Time and date

https://www.timeanddate.com/weather/@5476825/historic?month=08&year=2009



Average weather for Los Alamos

Climate-Data.org

https://en.climate-data.org/north-america/united-states-of-america/new-mexico/los-alamos-871784/

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	-4 °C (24.8) °F	-2.3 °C (27.8) °F	2.2 °C (35.9) °F	6.9 °C (44.4) °F	11.9 °C (53.5) °F	18.2 °C (64.7) °F	19.5 °C (67.2) °F	17.8 °C (64.1) °F	14.4 °C (57.9) °F	8.2 °C (46.7) °F	1.9 °C (35.4) °F	-3.7 °C (25.4) °F
Min. Temperature °C (°F)	-9.3 °C (15.2) °F	-8.1 °C (17.5) °F	-4.5 °C (23.9) °F	-0.8 °C (30.6) °F	3.6 °C (38.4) °F	9.2 °C (48.6) °F	12.4 °C (54.3) °F	11 °C (51.8) °F	7.4 °C (45.4) °F	1.8 °C (35.2) °F	-3.6 °C (25.6) °F	-8.5 °C (16.7) °F
Max. Temperature °C (°F)	3.9 °C (39) °F	5.5 °C (41.9) °F	10.4 °C (50.7) °F	15.2 °C (59.4) °F	20 °C (67.9) °F	26.1 °C (79) °F	26.4 °C (79.5) °F	24.6 °C (76.3) °F	21.6 °C (70.9) °F	15.9 °C (60.6) °F	9.6 °C (49.2) °F	3.7 °C (38.7) °F
Precipitation / Rainfall mm (in)	30 (1.2)	30 (1.2)	36 (1.4)	38 (1.5)	44 (1.7)	32 (1.3)	77 (3)	98 (3.9)	67 (2.6)	52 (2)	31 (1.2)	32 (1.3)
Humidity(%)	58%	54%	46%	36%	32%	28%	44%	51%	50%	50%	50%	58%
Rainy days (d)	4	5	5	6	6	5	10	12	7	5	4	4

11. *E. coli* in water from Intellus

No *E. coli* data found

B. S-Site canyon (Martin Spring)

1. Hydrology Protocol surveys (Level 1)

start: 2:00pm
end: 2:18pm

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 29Aug 2019	Stream Name: CdV @Martin Spring Cnyn (Martin Springs BMI 9-3-19)	Latitude: 35° 50' 31" N
Evaluator(s): Loftin, Schilling, Schendo, Armijo, Fullam	Site ID: below Martin Springs	Longitude: 106° 20' 10' W
TOTAL POINTS: 16.0 (Stream is at least intermittent if ≥ 1?)	Assessment Unit: N/A	Drought Index (12-mo. SPI Value): 0-1 (BMI 9-3-19)

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours?
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) 90 %cloud cover ___ clear/sunny	___ storm (heavy rain) ___ rain (steady rain) X showers (intermittent) ___ %cloud cover ___ clear/sunny 8/27 0.14" @TA-06	___ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications ___ YES X NO Diversions ___ YES X NO Discharges ___ YES X NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found.
	6	4	(2) circled	0
1.2. Fish	Found easily and consistently throughout the reach	Found with little difficulty but not consistently throughout the reach	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0) circled
1.3. Benthic Macroinvertebrates (mayfly, mosquito, water beetle)	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	(2) circled	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach	Found with little difficulty but not consistently throughout the reach	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	(2) circled	1	0
1.5. Differences in Vegetation (rushes, grasses, roses, Ponderosa, gamble oak, thistle – differ between reach + uplands)	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	2	(1.5) circled	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg	There are a few rooted upland plants present within the streambed/thalweg	Rooted upland plants are consistently dispersed throughout the streambed/thalweg	Rooted upland plants are prevalent within the streambed/thalweg
	3	(2) circled	1	0
SUBTOTAL (#1.1 – #1.6)				9.5

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

573 LA-UR-20-20785

CdV @ Martin Spring Cnyn 3 below

LEVEL 1 INDICATORS	STREAM CONDITION (Martin Springs): Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	2	(1) circled	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods. (2.22)	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	(1.5) circled	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	3	2	(1) circled	0
SUBTOTAL (#1.1 – #1.9)				13.0

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	Strong	Moderate	Weak	Poor
1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel. (no sorting)	
	3	1.5	(0) circled	
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are not found within the study reach.	
	Present = 3		(Absent = 0) circled	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	(1.5) circled	1	0.5	0
TOTAL POINTS (#1.1 – #1.12)				14.5

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to compute TOTAL.

1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	(Present = 1.5) circled	Absent = 0
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	(Absent = 0) circled
TOTAL plus SUPPLEMENTAL POINTS (#1.1 – #1.14)		16.0

574 LA-UR-20-20785

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	upstream	Photos by S. Loftin
2	~~left bank~~ downstream	"
3	~~right bank~~ left bank	"
4	right bank	"
5	upstream	"
6	Benthics	

NOTES:

Flagging noted w/ purple gloves

575 LA-UR-20-20785

CVC Martin Spring Cryn 3
below Martin Spring

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: _____ Storet ID: _____

Date: _____ Crew: _____

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm				
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	---				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**

Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
8.8 ft.	8.56ft	0.24ft	0.48ft	8.32ft	2.45m	1.1m	2.22 m

**REFER to Figure 3 on page 19 for clarification

576 LA-UR-20-20785

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:37:40 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.14
8	28	2019	240	0

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:38:14 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.05
8	28	2019	240	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:38:57 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.02
8	28	2019	240	0

Data is for tower ncom.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:41:29 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.01
8	28	2019	240	0


29 AUG 2019
Martin Spgs Cyn
Below MARTIN SPRINGS
Photo 1 : Upstream


29 AUG 2019
Martin Segs Cyn
Below MARTIN SPRINGS
Photo 2: Downstream


29 AUG 2019
Martin Spgs Cyn
Below MARTIN SPRINGS
Photo 4: Right Bank


29 AUG 2019
Martin Spgs Cyn
Below MARTIN SPRINGS
Photo 3: Left Bank


29 AUG 2019
Martin Spg> Cyn
Below MARTIN SPRINGS
Photo 5: Upstream

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 8-29-2019	Stream Name: Martha Spring	Latitude: 35° 50' ~~29.7~~ 26.952" N
Evaluator(s): * See Notes	Site ID: At MSC 16-06293	Longitude: 106° ~~20~~ 19' ~~8~~ 59.016" W
TOTAL POINTS: (Stream is at least intermittent if ≥ 12) 8	Assessment Unit: N/A	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	
	__ storm (heavy rain) __ rain (steady rain) __ showers (intermittent) 70 %cloud cover __ clear/sunny	__ storm (heavy rain) __ rain (steady rain) X showers (intermittent) __ %cloud cover __ clear/sunny TA-6 Rain Gage - .14" on 8/27/2019	Has there been a heavy rain in the last 48 hours? __ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event OTHER: Stream Modifications __ YES X NO Diversions __ YES X NO Discharges __ YES X NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found. No standing water
	6	4	2	(1) 0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	2	1	(0)
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	2	1	(0)
1.5. Differences in Vegetation No distinct riparian corridor (patchy)	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distict riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	2	1 (1.5)	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg.	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg.	Rooted upland plants are prevalent within the streambed/thalweg.
	3	2	(1)	0
			SUBTOTAL (#1.1 – #1.6)	3.5

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections	Ratio < 1.4. Stream has good sinuosity with some straight sections	Ratio < 1.2. Stream has very few bends and mostly straight sections	Ratio = 1.0. Stream is completely straight with no bends
	3	2	(1)	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. 1.83 Stream is moderately confined. Floodplain is present, but may only be active during larger floods.		Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.
	3	(1.5)		0
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	3	2	(1)	0
			SUBTOTAL (#1.1 – #1.9)	7

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

Some sorting in channel - not a lot of large particles 1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.
	3	1.5 (1)	0
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are not found within the study reach.
	Present = 3		Absent = (0)

1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	0.5	(0)
			TOTAL POINTS (#1.1 – #1.12)	8

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to compute TOTAL.		
1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	Absent = (0)
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	Absent = (0)
	TOTAL *plus* SUPPLEMENTAL POINTS (#1.1 – #1.14)	8

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Left Bank	
4	Right Bank	
5	Channel Upstream towards well	

NOTES:

Evaluators: Sam Loftin, Marcus Shands, Brad Schilling, Kiera Arroyo, Jennifer Fullgin

GPS coordinates are approximate.

562 LA-UR-20-20785

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: _____ Storet ID: _____

Date: _____ Crew: _____

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm	N/A Bmi 9-3-19			
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	---				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
8.15'	7.67'	.48'	.96'	7.19'	3.51 m	1.92m	1.83

**REFER to Figure 3 on page 19 for clarification

563 LA-UR-20-20785

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:37:40 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.14
8	28	2019	240	0

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:38:14 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.05
8	28	2019	240	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:38:57 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.02
8	28	2019	240	0

Data is for tower ncom.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Aug 29 06:41:29 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	24	2019	236	0
8	25	2019	237	0
8	26	2019	238	0
8	27	2019	239	0.01
8	28	2019	240	0


29 AUG 2019
Martin Spgs Cyn 3
at MSC16-06293
Photo 1: Upstream


29 AUG 2019

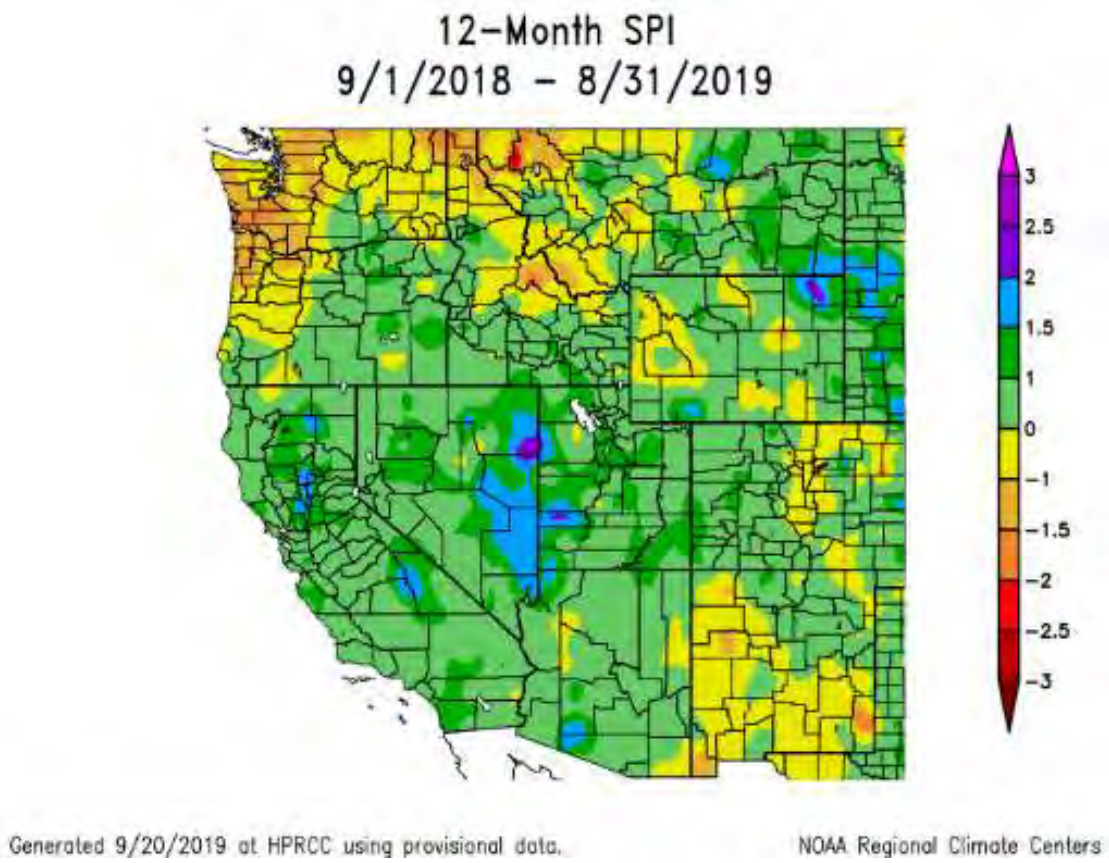

29 AUG 2019
Martin Spgs Cyn 3
at MSC16-06293
Photo 4: Right Bank


29 AUG 2019
Martin Spgs Cyn 3
at MSC16-06293
Photo3: Left Bank

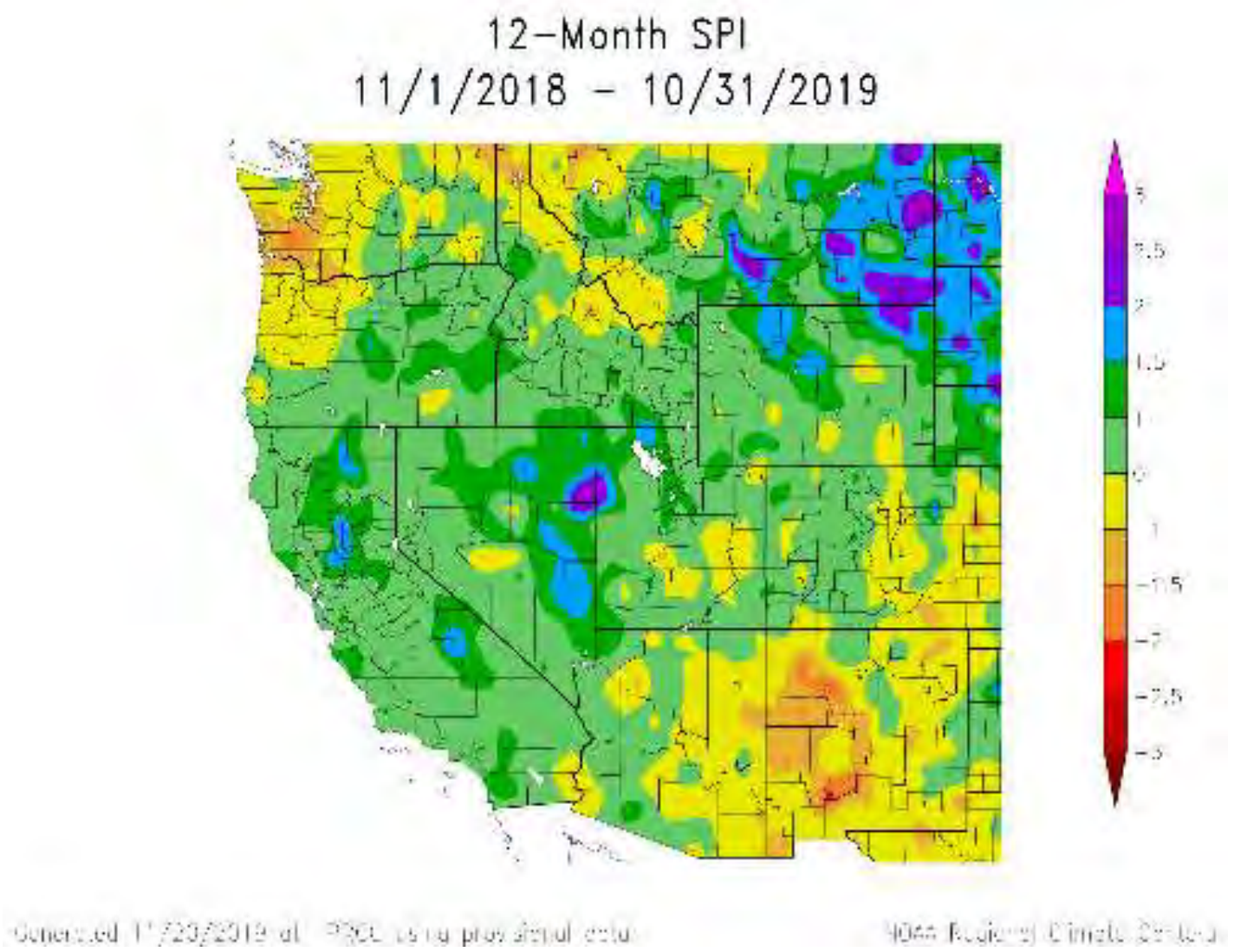

29 AUG 2019
Martin Spg> Cyn 3
at MSC16-06293
Photo 5: Upstream

2. 12-month SPI

High Plains Regional Climate Center https://hprcc.unl.edu/maps.php?map=ACISClimateMaps September 1, 2018 through August 31, 2019



12- month SPI High Plains Regional Climate Center - https://hprcc.unl.edu/maps.php?map=ACISClimateMaps October 1, 2018 through September 30, 2019



3. Stream gage stations from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)
N3B	Martin Spring	Flow (in gpm)	03-28-2016	11:10	1.11	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Flow (in gpm)	06-22-2016	11:04	0.79	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Flow (in gpm)	09-15-2016	12:05	0.95	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Flow (in gpm)	12-15-2016	12:10	0.79	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Flow (in gpm)	03-09-2017	13:50	1.45	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Flow (in gpm)	06-01-2017	13:37	0.83	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Flow (in gpm)	08-29-2017	13:10	0.71	GPM	35.8425518	-106.3363104
N3B	Martin Spring	Discharge Rate	02-23-2018	10:05	0.82	gal/min	35.8425518	-106.3363104
N3B	Martin Spring	Discharge Rate	08-22-2018	11:00	0.44	gal/min	35.8425518	-106.3363104
N3B	Martin Spring	Discharge Rate	03-06-2019	12:25	8.90	gal/min	35.8425518	-106.3363104
N3B	Martin Spring	Discharge Rate	08-10-2019	09:15	0.83	gal/min	35.8425518	-106.3363104
N3B	Martin Spring	Discharge Rate	07-23-2020	12:40	0.72	gal/min	35.8425518	-106.3363104

4. Stream hydrograph from LANL

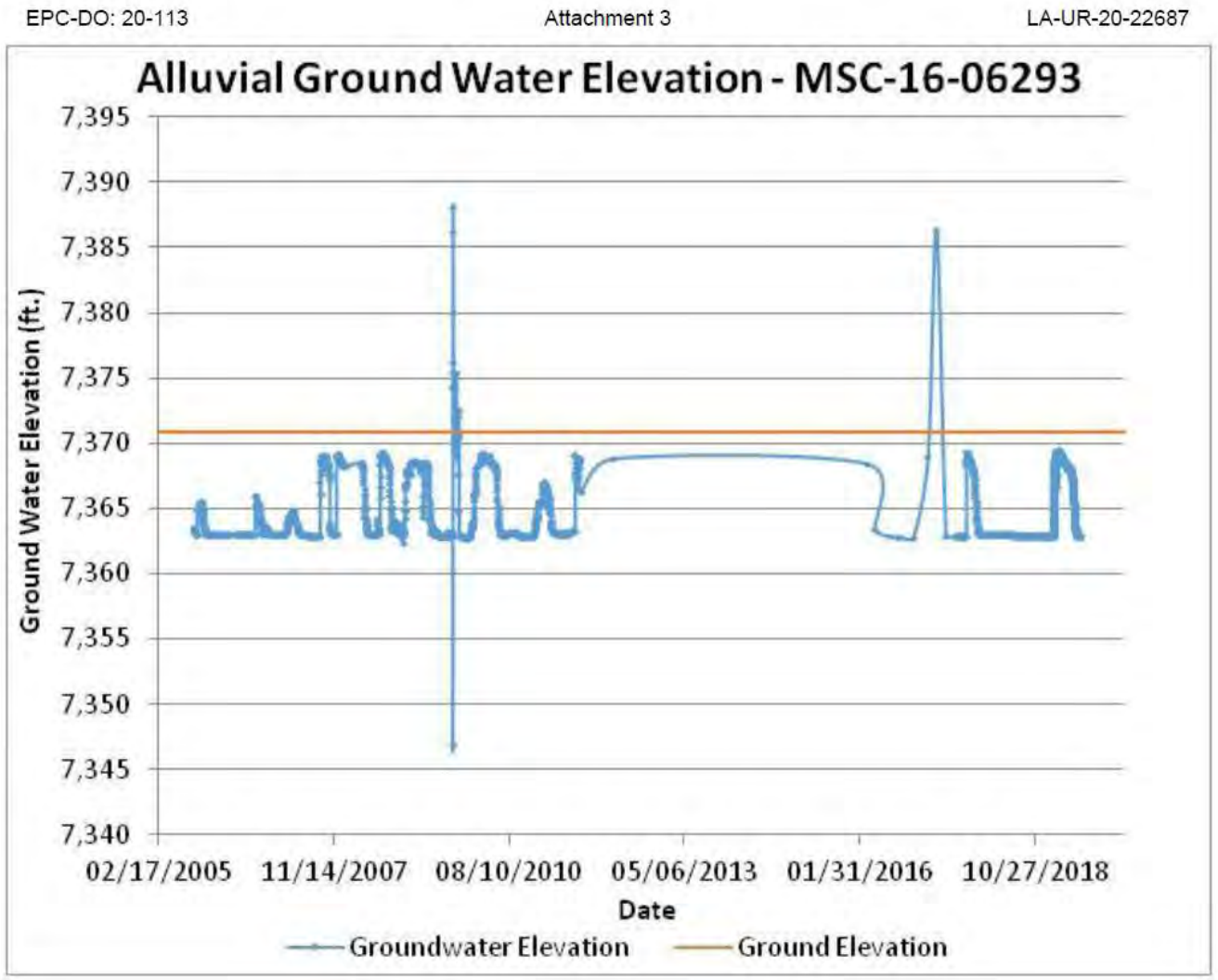
No stream hydrographs were provided.

5. Precipitation from NOAA

https://www.ncdc.noaa.gov/cdo-web/search

6. Alluvial hydrographs from LANL

MSC-16-06293 2005 through 2018



7. Water temperature from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Month	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Martin Spring	Temperature	08-29-2017	8	13:10	18.7	deg C	35.8425518	-106.3363104	
N3B	Martin Spring	Temperature	08-13-2014	8	12:16	16.97	deg C	35.8425518	-106.3363104	
N3B	Martin Spring	Temperature	07-23-2015	7	11:05	16.92	deg C	35.8425518	-106.3363104	
N3B	Martin Lower SW filt samp port	Temperature	07-28-2006	7	10:10	15.58	deg C	35.8423181	-106.3364896	Y
N3B	Martin Spring	Temperature	07-23-2020	7	12:40	15.4	deg C	35.8425518	-106.3363104	Y
N3B	Martin Upper SW Filt Samp Port	Temperature	07-28-2006	7	10:10	14.35	deg C	35.8424173	-106.3365398	Y
N3B	Martin Spring	Temperature	06-01-2017	6	13:37	14.1	deg C	35.8425518	-106.3363104	
N3B	Martin Spring	Temperature	07-20-2012	7	11:51	13.67	deg C	35.8425518	-106.3363104	
N3B	Martin Lower SW filt samp port	Temperature	08-25-2005	8	09:55	12.9	deg C	35.8423181	-106.3364896	Y
N3B	Martin Spring	Temperature	08-10-2019	8	09:15	12.7	deg C	35.8425518	-106.3363104	Y
N3B	Martin Spring	Temperature	06-22-2016	6	11:04	12.61	deg C	35.8425518	-106.3363104	
N3B	Martin Spring	Temperature	08-22-2018	8	11:00	12.6	deg C	35.8425518	-106.3363104	Y
N3B	Martin Spring	Temperature	08-25-2005	8	09:35	11.9	deg C	35.8425518	-106.3363104	Y
N3B	Martin Spring	Temperature	07-28-2006	7	10:10	11.83	deg C	35.8425518	-106.3363104	Y
N3B	Martin Upper SW Filt Samp Port	Temperature	08-25-2005	8	09:45	11.49	deg C	35.8424173	-106.3365398	Y
NMED	Martin Spring	Temperature	06-04-1996	6	00:00	10.9	C	35.842552	-106.33631	Y
NMED	Martin Spring	Temperature	08-27-2008	8	10:39	10.7	C	35.842552	-106.33631	Y
NMED	Martin Spring	Temperature	07-21-1995	7	00:00	10.4	C	35.842552	-106.33631	Y
					Median	12.80	deg C			
					Standard Deviation	2.38	deg C			

8. Water pH from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Martin Spring	pH	08-10-2019	09:15	7.79	SU	35.8425518	-106.3363104	Y
N3B	Martin Lower SW filt samp port	pH	07-28-2006	10:10	7.7	SU	35.8423181	-106.3364896	Y
N3B	Martin Spring	pH	03-09-2017	13:50	7.49	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	06-01-2017	13:37	7.47	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	08-29-2017	13:10	7.40	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	08-22-2018	11:00	7.40	SU	35.8425518	-106.3363104	Y
N3B	Martin Upper SW Filt Samp Port	pH	03-29-2006	11:22	7.31	SU	35.8424173	-106.3365398	Y
N3B	Martin Spring	pH	01-18-2012	10:22	7.3	SU	35.8425518	-106.3363104	Y
N3B	Martin Lower SW filt samp port	pH	03-29-2006	11:15	7.29	SU	35.8423181	-106.3364896	Y
N3B	Martin Spring	pH	03-29-2006	11:10	7.28	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	07-23-2015	11:05	7.28	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	09-15-2011	12:02	7.27	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	03-28-2016	11:10	7.27	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	04-06-2005	12:00	7.24	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	12-01-2015	11:03	7.20	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	03-06-2019	12:25	7.18	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	09-15-2011	12:07	7.17	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	07-20-2012	11:51	7.17	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	07-23-2020	12:40	7.13	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	01-27-2015	11:28	7.08	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	06-22-2016	11:04	7.08	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	05-09-2005	14:57	7.07	SU	35.8425518	-106.3363104	Y
N3B	Martin Upper SW Filt Samp Port	pH	07-28-2006	10:10	7.07	SU	35.8424173	-106.3365398	Y
NMED	Martin Spring	pH	07-21-1995	00:00	7.04	SU	35.842552	-106.33631	Y
N3B	Martin Spring	pH	03-27-2013	11:45	7.02	SU	35.8425518	-106.3363104	

NMED	Martin Spring	pH	05-12-1995	00:00	6.99	SU	35.842552	-106.33631	Y
N3B	Martin Spring	pH	12-15-2016	12:10	6.95	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	09-15-2016	12:05	6.91	SU	35.8425518	-106.3363104	
N3B	Martin Lower SW filt samp port	pH	11-14-2005	10:05	6.9	SU	35.8423181	-106.3364896	Y
N3B	Martin Spring	pH	07-28-2006	10:10	6.9	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	03-06-2014	12:27	6.90	SU	35.8425518	-106.3363104	
N3B	Martin Upper SW Filt Samp Port	pH	11-14-2005	09:40	6.86	SU	35.8424173	-106.3365398	Y
N3B	Martin Spring	pH	09-17-2013	11:33	6.85	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	02-23-2018	10:05	6.85	SU	35.8425518	-106.3363104	Y
N3B	Martin Lower SW filt samp port	pH	08-25-2005	09:55	6.84	SU	35.8423181	-106.3364896	Y
NMED	Martin Spring	pH	12-15-1997	00:00	6.77	SU	35.842552	-106.33631	Y
N3B	Martin Spring	pH	05-09-2007	10:35	6.77	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	04-05-2011	10:55	6.75	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	08-13-2014	12:16	6.74	SU	35.8425518	-106.3363104	
N3B	Martin Spring	pH	11-14-2005	09:55	6.71	SU	35.8425518	-106.3363104	Y
N3B	Martin Upper SW Filt Samp Port	pH	08-25-2005	09:45	6.67	SU	35.8424173	-106.3365398	Y
N3B	Martin Spring	pH	03-24-2009	10:45	6.65	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	10-16-2009	10:15	6.65	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	08-25-2005	09:35	6.63	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	09-14-2010	13:58	6.61	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	04-02-2008	10:35	6.6	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	10-08-2008	13:25	6.6	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	04-13-2010	13:52	6.55	SU	35.8425518	-106.3363104	Y
N3B	Martin Spring	pH	10-19-2007	14:45	6.5	SU	35.8425518	-106.3363104	Y
NMED	Martin Spring	pH	06-04-1996	00:00	6.29	SU	35.842552	-106.33631	Y
NMED	Martin Spring	pH	08-27-2008	10:39	6.27	SU	35.842552	-106.33631	Y
NMED	Martin Spring	pH	05-24-1996	00:00	6.25	SU	35.842552	-106.33631	Y
N3B	Martin Spring	pH	12-18-2008	13:17	5.69	SU	35.8425518	-106.3363104	Y

				Median	6.95	SU			
				Standard Deviation	0.39	SU			

9. Water Dissolved oxygen from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable	
N3B	Martin Upper SW Filt Samp Port	Dissolved Oxygen	07-28-2006	10:10	69.51	mg/L	35.8424173	-106.3365398	Y	Not used
N3B	Martin Lower SW filt samp port	Dissolved Oxygen	07-28-2006	10:10	59.16	mg/L	35.8423181	-106.3364896	Y	Not used
N3B	Martin Spring	Dissolved Oxygen	07-28-2006	10:10	53.4	mg/L	35.8425518	-106.3363104	Y	Not used
N3B	Martin Spring	Dissolved Oxygen	03-24-2009	10:45	14	mg/L	35.8425518	-106.3363104	Y	Not used
N3B	Martin Lower SW filt samp port	Dissolved Oxygen	03-29-2006	11:15	9.62	mg/L	35.8423181	-106.3364896	Y	
N3B	Martin Spring	Dissolved Oxygen	03-29-2006	11:10	9.43	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	12-18-2008	13:17	9.34	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	05-09-2007	10:35	9.05	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Upper SW Filt Samp Port	Dissolved Oxygen	03-29-2006	11:22	8.84	mg/L	35.8424173	-106.3365398	Y	
N3B	Martin Spring	Dissolved Oxygen	09-15-2011	12:07	8.31	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	04-02-2008	10:35	8.28	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	02-23-2018	10:05	7.91	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	03-28-2016	11:10	7.88	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	12-01-2015	11:03	7.84	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	01-18-2012	10:22	7.82	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	12-15-2016	12:10	7.72	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	10-16-2009	10:15	7.67	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	06-22-2016	11:04	7.63	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	01-27-2015	11:28	7.62	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	10-08-2008	13:25	7.58	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	07-23-2020	12:40	7.58	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	03-27-2013	11:45	7.55	mg/L	35.8425518	-106.3363104		

N3B	Martin Spring	Dissolved Oxygen	07-20-2012	11:51	7.52	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	04-05-2011	10:55	7.51	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	09-15-2016	12:05	7.47	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	06-01-2017	13:37	7.47	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	08-22-2018	11:00	7.42	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	03-06-2014	12:27	7.38	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	08-10-2019	09:15	7.38	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	08-29-2017	13:10	7.34	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	03-06-2019	12:25	7.31	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	03-09-2017	13:50	7.14	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	05-09-2005	14:57	6.98	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	09-15-2011	12:02	6.91	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	04-13-2010	13:52	6.72	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	07-23-2015	11:05	6.50	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	04-06-2005	12:00	6.2	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	09-14-2010	13:58	6.17	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Spring	Dissolved Oxygen	09-17-2013	11:33	6.10	mg/L	35.8425518	-106.3363104		
N3B	Martin Spring	Dissolved Oxygen	08-13-2014	12:16	6.00	mg/L	35.8425518	-106.3363104		
NMED	Martin Spring	Dissolved Oxygen	08-27-2008	10:39	5.86	mg/L	35.842552	-106.33631	Y	
N3B	Martin Spring	Dissolved Oxygen	10-19-2007	14:45	3.7	mg/L	35.8425518	-106.3363104	Y	
N3B	Martin Lower SW filt samp port	Dissolved Oxygen	08-25-2005	09:55	3.3	mg/L	35.8423181	-106.3364896	Y	
N3B	Martin Upper SW Filt Samp Port	Dissolved Oxygen	08-25-2005	09:45	3.2	mg/L	35.8424173	-106.3365398	Y	
N3B	Martin Spring	Dissolved Oxygen	08-25-2005	09:35	2.9	mg/L	35.8425518	-106.3363104	Y	
				Median	7.47	mg/L				
				Standard Deviation	1.55	mg/L				

10. Weather data

Average weather for Los Alamos

Climate-Data.org

https://en.climate-data.org/north-america/united-states-of-america/new-mexico/los-alamos-871784/

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	-4 °C (24.8) °F	-2.3 °C (27.8) °F	2.2 °C (35.9) °F	6.9 °C (44.4) °F	11.9 °C (53.5) °F	18.2 °C (64.7) °F	19.5 °C (67.2) °F	17.8 °C (64.1) °F	14.4 °C (57.9) °F	8.2 °C (46.7) °F	1.9 °C (35.4) °F	-3.7 °C (25.4) °F
Min. Temperature °C (°F)	-9.3 °C (15.2) °F	-8.1 °C (17.5) °F	-4.5 °C (23.9) °F	-0.8 °C (30.6) °F	3.6 °C (38.4) °F	9.2 °C (48.6) °F	12.4 °C (54.3) °F	11 °C (51.8) °F	7.4 °C (45.4) °F	1.8 °C (35.2) °F	-3.6 °C (25.6) °F	-8.5 °C (16.7) °F
Max. Temperature °C (°F)	3.9 °C (39) °F	5.5 °C (41.9) °F	10.4 °C (50.7) °F	15.2 °C (59.4) °F	20 °C (67.9) °F	26.1 °C (79) °F	26.4 °C (79.5) °F	24.6 °C (76.3) °F	21.6 °C (70.9) °F	15.9 °C (60.6) °F	9.6 °C (49.2) °F	3.7 °C (38.7) °F
Precipitation / Rainfall mm (in)	30 (1.2)	30 (1.2)	36 (1.4)	38 (1.5)	44 (1.7)	32 (1.3)	77 (3)	98 (3.9)	67 (2.6)	52 (2)	31 (1.2)	32 (1.3)
Humidity(%)	58%	54%	46%	36%	32%	28%	44%	51%	50%	50%	50%	58%
Rainy days (d)	4	5	5	6	6	5	10	12	7	5	4	4

11. *E. coli* in water from Intellus

No *E. coli* data found

C. Two-Mile canyon

1. Hydrology Protocol surveys (Level 1)

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Elevation 7040

Date: 9-12-2019	Stream Name: Two Mile Canyon	Latitude: 35° 51' 30" N
Evaluator(s): * See Notes	Site ID: TA-55 Confluence	Longitude: 106° 18' 9" W
TOTAL POINTS: 19	Assessment Unit: NM-128.A-15	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	
	__ storm (heavy rain) __ rain (steady rain) __ showers (intermittent) __ %cloud cover X clear/sunny	__ storm (heavy rain) __ rain (steady rain) X showers (intermittent) __ %cloud cover __ clear/sunny	Has there been a heavy rain in the last 48 hours? __ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event** OTHER: Stream Modifications __ YES X NO Diversions __ YES X NO Discharges __ YES X NO **Explain in further detail in NOTES section**

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc).	Dry channel. No evidence of base flows was found.
	6	(4)	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	(2)	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	(2)	1	0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	(2)	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg.	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg.	Rooted upland plants are prevalent within the streambed/thalweg.
	3	(2)	1	0
SUBTOTAL (#1.1 – #1.6)				12

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

1118 LA-UR-20-20795

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio < 1.0. Stream is completely straight with no bends.
	3	2	(1)	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide active floodplain.	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	(1.5)	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	(3)	2	1	0
SUBTOTAL (#1.1 – #1.9)				17.5

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

Limited sorting 1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).		Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.
	3	1.5	(1)	0
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are not found within the study reach.	
	Present = 3		Absent = (0)	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambanks, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	(0.5)	0
TOTAL POINTS (#1.1 – #1.12)				19

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to compute TOTAL.

1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	Absent = (0)
1.14. Iron Oxidizing Bacteria/Fungi	Iron oxidizing bacteria and/or fungi are found within the study reach.	Iron oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	Absent = (0)
TOTAL plus SUPPLEMENTAL POINTS (#1.1 – #1.14)		19

1119 LA-UR-20-20795

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Right Bank	
4	Left Bank	
5	Overall Channel - Downstream	
6	Benthic Macroinvertebrates	
7	Benthic Macroinvertebrates-2	

NOTES:

Evaluators: Sam Lifton, Robert Gallegos, Jamie Fallon

TA-54 Rain Gage recorded .06" on 9-10-19

1.3- Caddisfly casing, worm, mayfly

1.5- oak, clover, red top, daisy, box elder, rose, poison ivy, thistle

1.10- Limited sorting

1120 LA-UR-20-20788

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: Storet ID:

Date: Crew:

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm		N/A Bmi		
Sand	0.06 – 2.0 mm (gritty)		9-7-19		
Gravel	2.0 – 64 mm				
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	—				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
7.64'	7.25'	.39'	.78'	6.86'	10.65'	4.34'	2.45

**REFER to Figure 3 on page 19 for clarification

1121 LA-UR-20-20788

Data is for tower La6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:53:26 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0.03

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:55:52 2019 MST.
All data times are MST.

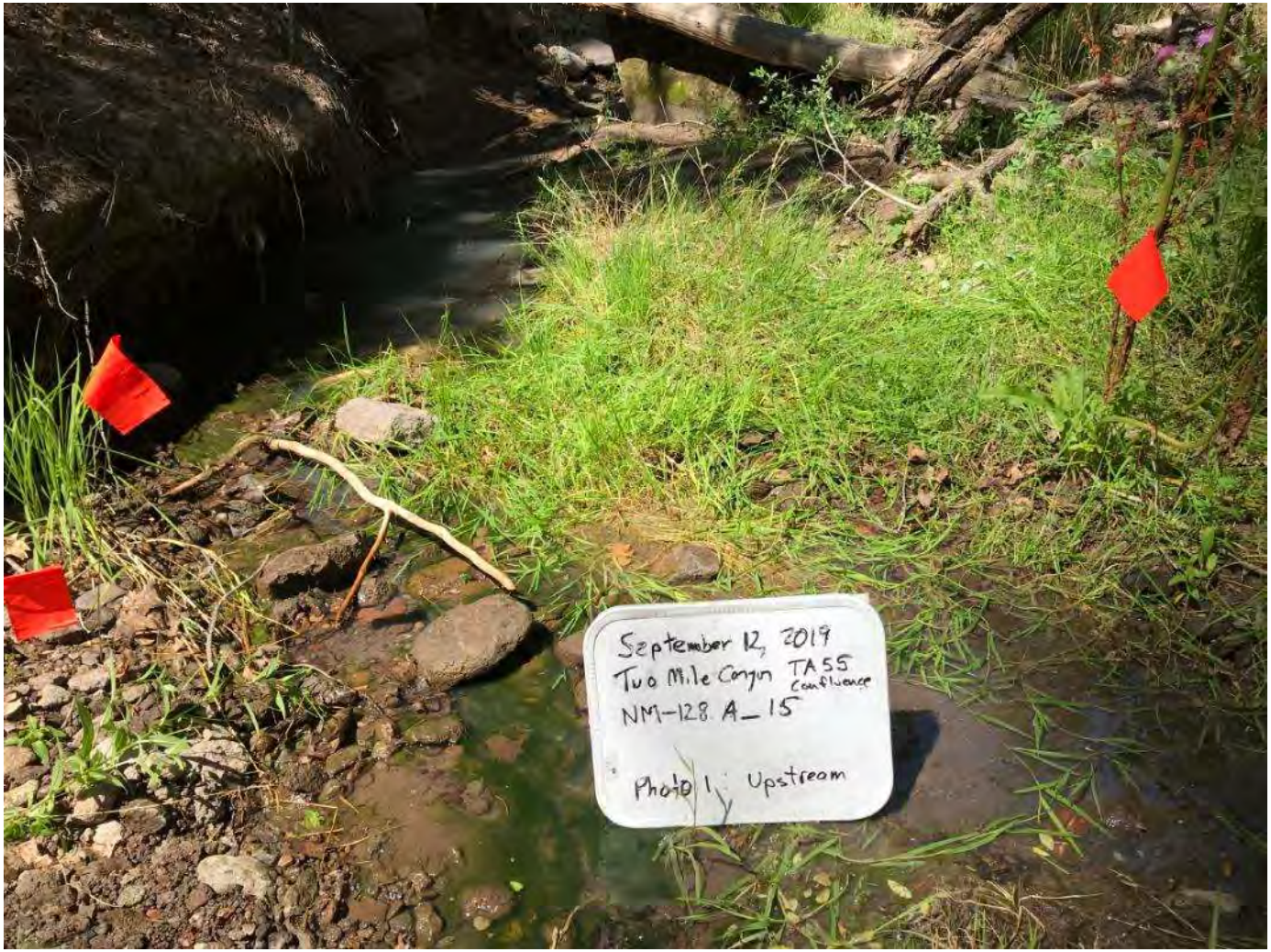
month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:56:32 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0.1

Data is for tower ta54.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov
Request made on Thu Sep 12 06:57:11 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0


September 12, 2019
Two Mile Canyon TA55 confluence
NM-128 A_15
Photo 1: Upstream


September 12, 2019
Two Mile Canyon TA55
NM-128 A_15
Photo 2 Downstream


September 12, 2019
Two Mile Canyon TA55
NM-128. A_15
Confluence
Photo 3: Right Bank


September 12, 2019
Two Mile Canyon TASS
Photo 3 Left Bank


September 12, 2019
Two Mile Canyon TA55
Confluence
NM-128 A_15
Photo 5: Downstream


September 12, 2019
Two Mile Canyon TA 55
Confluence
NM-128 A_15
Benthics

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 9-12-2019	Stream Name: [illegible] Cnyn	Latitude: 35° 52' 3" N
Evaluator(s): [illegible]	Site ID: [illegible] TA-57	Longitude: 106° 19' 11" W
TOTAL POINTS: 20.5	Assessment Unit: NM-128.A-15	Drought Index (12-mo. SPI Value): [illegible]

Elevation 7,230

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	
	__ storm (heavy rain) __ rain (steady rain) __ showers (intermittent) __ %cloud cover X clear/sunny	__ storm (heavy rain) __ rain (steady rain) X showers (intermittent) __ %cloud cover __ clear/sunny	Has there been a heavy rain in the last 48 hours? __ YES X NO [illegible] OTHER: Stream Modifications __ YES X NO Diversions __ YES X NO Discharges __ YES X NO [illegible]

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1 Water in Channel	[illegible]	[illegible]	[illegible]	[illegible]
	6	(4)	2	0
1.2 Fish	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	1	(0)
1.3 Benthic Macroinvertebrates	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
1.4 Filamentous Algae/Periphyton	[illegible]	[illegible]	[illegible]	[illegible]
	(3)	2	1	0
1.5 Differences in Vegetation	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
1.6 Absence of Rooted Upland Plants in Streambed	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
SUBTOTAL (#1.1 – #1.6)				13

[illegible]

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely spaced bends, few straight sections	Ratio < 1.4. Stream has good sinuosity with some straight sections	Ratio < 1.2. Stream has very few bends and mostly straight sections	Ratio = 1.0. Stream is completely straight with no bends
	3	2	(1)	0
1.8. Floodplain and Channel Dimensions 1.54	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	(1.5)	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	(3)	2	1	0
SUBTOTAL (#1.1 – #1.9)				18.5

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL. If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS				
1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.	
	3	(1.5)	0	
1.11. Hydric Soils	Hydric soils are found within the study reach.	Hydric soils are not found within the study reach.		
	Present = 3	Absent (= 0)		
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	(0.5)	0
TOTAL POINTS (#1.1 – #1.12)				20.5

SUPPLEMENTAL INDICATORS. The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to complete TOTAL.		
1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	Absent (= 0)
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	Absent (= 0)
TOTAL *plus* SUPPLEMENTAL POINTS (#1.1 – #1.14)		20.5

1167 LA-UR-[illegible]

1168 LA-UR-20-20785

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Right Bank	
4	Left Bank	
5	Overall Channel Upstream	

NOTES:

Evaluators: Jennifer Fullam, Sean Lofton, Robert Gallegos

The LA Rain gage recorded .06" on 9/10 and .03" on 9/11.

1.3 - Macros - Beetles, mayfly, redworm

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: ____ Storet ID: ____

Date: ____ Crew: ____

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm		N/A		
Sand	0.06 – 2.0 mm (gritty)		9-17-[illegible]		
Gravel	2.0 – 64 mm				
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	—				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
8.2'	7.65'	.55'	1.1'	7.1'	9.39'	6.17'	1.54

**REFER to Figure 3 on page 19 for clarification

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:53:26 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0.03

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:55:52 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:56:32 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0.1

Data is for tower ta54.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:57:11 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0


September 12, 2019
Two Mile Canyon blw TA 59
NM-128 A_15
Photo 1 . Upstream


September 12, 2019
Two Mile Canyon bel. TA 59
MM-128 A_15
Photo 2. Downstream


September 12, 2019
Two Mile Canyon blw 59
NM-128 A_15
Photo 3: R bank


September 12 2019
Two Mile Canyon tbl 517
MM-128 A_15
Photo 4 L bank


September 12, 2019
Two Mile Canyon
NM-128 @ 15
Photo 5 Upstream

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Elevation: 6,450 ft

Date: 9-12-2019	Stream Name: Two Mile Canyon	Latitude: 35° 51' 21" N
Evaluator(s): KSor Nuts	Site ID: Above E244	Longitude: 106° 17' 45" W
TOTAL POINTS: 10.5	Assessment Unit: NM-128.A_15	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	
	__ storm (heavy rain) __ rain (steady rain) __ showers (intermittent) __ %cloud cover X clear/sunny	__ storm (heavy rain) __ rain (steady rain) X showers (intermittent) __ %cloud cover __ clear/sunny	Has there been a heavy rain in the last 48 hours? __ YES X NO [illegible] OTHER: Stream Modifications __ YES X NO Diversions __ YES X NO Discharges __ YES X NO [illegible]

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	[illegible]	[illegible]	[illegible]	Dry channel. No evidence of base flows was found.
	6	4	2	(0)
1.2. Fish	[illegible]	[illegible]	[illegible]	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	1	(0)
1.4. Filamentous Algae/Periphyton	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	(1)	0
1.5. Differences in Vegetation	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
1.6. Absence of Rooted Upland Plants in Streambed	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
			SUBTOTAL (#1.1 – #1.6)	5

[illegible]

1131 LA-UR-20-20798

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	(1)	0
1.8. Floodplain and Channel Dimensions	[illegible]	[illegible]		[illegible]
	3	(1.5)		0
1.9. In-Channel Structure: Riffle-Pool Sequence	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	(1)	0
			SUBTOTAL (#1.1 – #1.9)	8.5

[illegible]

1.10. Particle Size or Stream Substrate Sorting	[illegible]	[illegible]		[illegible]
	3	(1.5)		0
1.11. Hydric Soils	[illegible]		[illegible]	
	Present = 3		Absent (= 0)	
1.12. Sediment on Plants and Debris	[illegible]	[illegible]	[illegible]	[illegible]
	1.5	1	(0.5)	0
			TOTAL POINTS (#1.1 – #1.12)	10.5

SUPPLEMENTAL INDICATORS: [illegible]		
1.13. Seeps and Springs	[illegible]	[illegible]
	Present = 1.5	Absent (= 0)
1.14. Iron Oxidizing Bacteria/Fungi	[illegible]	[illegible]
	Present = 1.5	Absent (= 0)
TOTAL *plus* SUPPLEMENTAL POINTS (#1.1 – #1.14)		10.5

1132 LA-UR-20-20798

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Right Bank	
4	Left Bank	
5	Overall Channel - Jemez	

NOTES:

Evaluators: Jen Litton, Jennifer Fuller, Robert Gallegos

TA-54 Rain Gage reading .08" on 9/10/19

Vegetation present: mixing grasses, orchard grass, ponderosa pine, pine, elder, mullein, rose bush, thistle, yarrow, New Mexico locust

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: _____ Storet ID: _____

Date: _____ Crew: _____

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm		N/A BMI		
Sand	0.06 – 2.0 mm (gritty)		9-17%		
Gravel	2.0 – 64 mm				
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	—				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (Flood-Prone Width / Bankfull Width)
7.26'	7.03'	.67'	1.34'	6.36'	18.72'	12.45'	1.5

**REFER to Figure 3 on page 19 for clarification

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:53:26 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0.03

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:55:52 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:56:32 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0.1

Data is for tower ta54.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:57:11 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0


September 12, 2019
Tua Mile Canyon Above E244
NM-128 A_15
Photo 1 : upstream


September 12, 2019
Two Mile Canyon Above E244
NM-128 A_15
Photo 2: Downstream


September 12, 2019
Two Mile Canyon Above E244
NM-128 A_15
Photo3: Right Bank


September 12, 2019
Two Mile Canyon Above E244
NM-128 A_15
Photo 4 - Left Bank


September 12, 2019
Two Mile Canyon Above
NM-128 A_15
Photo 5: Down Stream

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Elnekeir: 730

Date: 9-12-2019	Stream Name: Tsankawi Canyon	Latitude: 35° 52' 4" N
Evaluator(s): [illegible]	Site ID: Below Confluence	Longitude: 106° 19' 25" W
TOTAL POINTS: [illegible] 18	Assessment Unit: NM-128.A-15	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW: ___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover X clear/sunny	PAST 48 HOURS: ___ storm (heavy rain) ___ rain (steady rain) X showers (intermittent) ___ %cloud cover ___ clear/sunny	Has there been a heavy rain in the last 48 hours? ___ YES X NO [illegible] OTHER: Stream Modifications ___ YES X NO; Diversions ___ YES X NO; Discharges ___ YES X NO [illegible]

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	[illegible]	[illegible]	[illegible]	[illegible]
	6	(4)	2	0
1.2. Fish	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
1.4. Filamentous Algae/Periphyton	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
1.5. Differences in Vegetation	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	(1)	0
1.6. Absence of Rooted Upland Plants in Streambed	[illegible]	[illegible]	[illegible]	[illegible]
	3	(2)	1	0
			SUBTOTAL (#1.1 – #1.6)	11

[illegible]

1389 LA-UR-20-23785

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	[illegible]	[illegible]	[illegible]	[illegible]
	3	2	(1)	0
1.8. Floodplain and Channel Dimensions 1.07	[illegible]	[illegible]		[illegible]
	3	1.5		(0)
1.9. In-Channel Structure: Riffle-Pool Sequence	[illegible]	[illegible]	[illegible]	[illegible]
	(3)	2	1	0
			SUBTOTAL (#1.1 – #1.9)	~~12~~ 15
[illegible]				
1.10. Particle Size or Stream Substrate Sorting	[illegible]	[illegible]	[illegible]	
	3	(1.5)	0	
1.11. Hydric Soils	[illegible]		[illegible]	
	Present = 3		(Absent = 0)	
1.12. Sediment on Plants and Debris	[illegible]	[illegible]	[illegible]	[illegible]
	1.5	1	0.5	(0)
			TOTAL POINTS (#1.1 – #1.12)	~~13.5~~ 16.5

SUPPLEMENTAL INDICATORS [illegible]		
1.13. Seeps and Springs	[illegible]	[illegible]
	Present (= 1.5)	Absent = 0
1.14. Iron Oxidizing Bacteria/Fungi	[illegible]	[illegible]
	Present = 1.5	Absent (= 0)
	TOTAL of SUPPLEMENTAL POINTS (#1.1 – #1.14)	18

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Right Bank	
4	Left Bank	
5	Overall Channel	Downstream
6	Benthic Macroinvertebrates	

NOTES:

Evaluators: Jennifer Fullam, Sean Lofton, Robert Cordova

The La Bajada [illegible] recorded .06" on 9/10 and .05" on 9/11.

1.7 – Sinuosity is inhibited by narrow canyon

1.10 – incised channel – no difference between channel / floodplain

Vegetation present – chokecherry, grasses, fescue, red top

1697 LA-UR-20-20795

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: Storet ID:
Date: Crew:

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm		N/A BMT 9/17/19		
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm				
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	—				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects-depending on stream size) for accurate distributional representation

INDICATOR #1.9 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width ÷ Bankfull Width)
23.17'	23.10'	.07'	.14'	23.73'	9.10'	8.45'	1.07

**REFER to Figure 3 on page 19 for clarification

1698 LA-UR-20-20795

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:53:26 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0.03

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:55:52 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0

Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:56:32 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0
9	11	2019	254	0.1

Data is for tower ta54.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 12 06:57:11 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	9	2019	252	0
9	10	2019	253	0.06
9	11	2019	254	0


September 12, 2019
Two Mile Canyon blu Cont.
NM-12.8. A_15
Photo 1 Upstream


September 12, 2019
Two Mile Canyon blw Conf.
NM-128. A_15
Photo 2 Downstream


September 12, 2019
Two Mile Canyon blw Gage
NM-128.A_15
Photo 3 R. Bank


September 12, 2019
Two Mile Canyon blw Conf.
NM-128.A_15
Photo 4 : L Bank

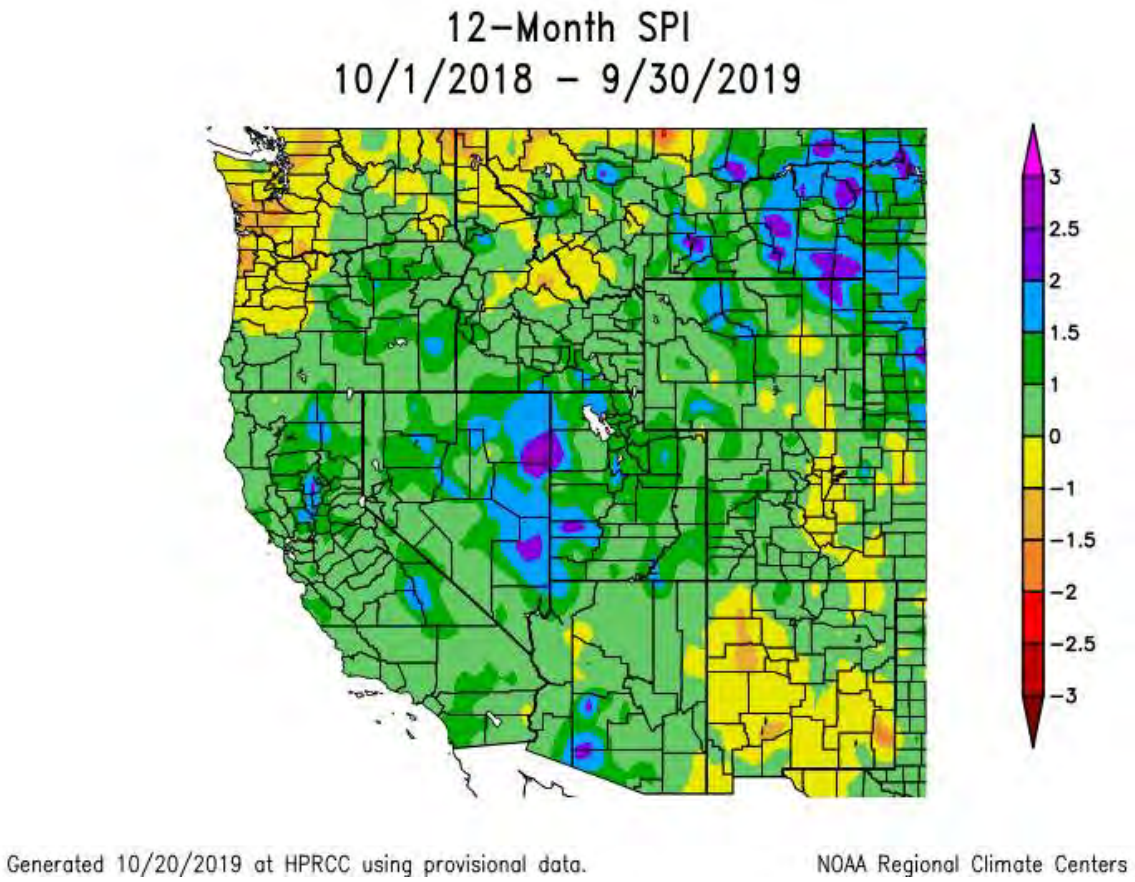

September 12, 2019
Two Mile Canyon blw Confl.
NM-128.A_15
Photo 5 : Downstream


September 12, 2019
Two Mile Canyon blw Conf.
NM-128. A_15
Photo 6 Benthics

2. 12-month SPI

High Plains Regional Climate Center https://hprcc.unl.edu/maps.php?map=ACISClimateMaps

October 1, 2018 through September 30, 2019



3. Streamflow from hydrograph from LANL

4. Stream gage stations from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)
N3B	Two Mile Canyon below TA-59	Flow (in gpm)	04-20-2016	11:10	22.9	GPM	35.865972	-106.3155681
N3B	Two Mile Canyon below TA-59	Discharge Rate	04-15-2019	09:30	9.43	gal/min	35.865972	-106.3155681

5. Precipitation from NOAA

https://www.ncdc.noaa.gov/cdo-web/search

6. Alluvial hydrographs from LANL

No alluvial hydrographs were provided

7. Water temperature from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Month	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Two Mile Canyon below TA-59	Temperature	06-27-2007	6	14:52	19.2	deg C	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	Temperature	08-06-2010	8	13:04	17.88	deg C	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	Temperature	06-12-2008	6	14:00	16.4	deg C	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	Temperature	08-25-2006	8	09:30	13.7	deg C	35.865972	-106.3155681	Y
					Median	17.14	deg C			
					Standard Deviation	2.36	deg C			
Site ID	Location ID	Field Parameter	Measurement Date	Month	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Twomile above Pajarito	Temperature	06-27-2007	6	11:45	17.2	deg C	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	Temperature	08-11-2010	8	11:10	16.36	deg C	35.8556751	-106.2960122	Y
NMED	Two Mile above Pajarito E244	Temperature	08-05-1998	8	10:10	14.4	C	35.855675	-106.296012	Y
N3B	Twomile above Pajarito	Temperature	08-29-2006	8	08:40	14.1	deg C	35.8556751	-106.2960122	Y
					Median	15.38	deg C			
					Standard Deviation	1.51	deg C			

8. Water pH from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Twomile above Pajarito	pH	08-22-2005	12:00	7.7	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-24-2005	13:26	7.6	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-11-2010	11:10	7.39	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	09-10-2008	13:20	7.37	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	09-28-2005	16:43	7.34	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	03-22-2005	10:56	7.23	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-19-2006	17:11	7.11	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	12-17-2007	11:40	7.1	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-01-2006	12:32	7.08	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-29-2006	08:40	7.08	SU	35.8556751	-106.2960122	Y
NMED	Two Mile above Pajarito E244	pH	08-05-1998	10:10	7.06	SU	35.855675	-106.296012	Y
N3B	Twomile above Pajarito	pH	01-29-2008	11:10	7.03	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	06-16-2007	15:54	7.02	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	04-03-2007	10:40	7	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-07-2006	13:04	6.97	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	07-15-2005	15:46	6.95	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	03-23-2007	14:00	6.89	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	06-27-2007	11:45	6.86	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	09-12-2007	09:30	6.84	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	09-01-2006	14:00	6.83	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	03-05-2008	11:00	6.8	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	08-25-2006	12:13	6.65	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	10-09-2006	18:08	6.65	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	07-14-2007	17:25	6.52	SU	35.8556751	-106.2960122	Y

N3B	Twomile above Pajarito	pH	06-29-2006	16:25	6.46	SU	35.8556751	-106.2960122	Y
N3B	Twomile above Pajarito	pH	07-26-2007	14:28	6.11	SU	35.8556751	-106.2960122	Y
				Median	7.01	SU			
				Standard Deviation	0.35	SU			

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable
N3B	Two Mile Canyon below TA-59	pH	04-20-2016	11:10	7.84	SU	35.865972	-106.3155681	
N3B	Two Mile Canyon below TA-59	pH	04-15-2019	09:30	7.58	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	09-17-2009	08:10	7.26	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	04-02-2007	11:50	7.2	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	08-06-2010	13:04	7.2	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	03-07-2008	14:10	7.19	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	06-27-2007	14:52	7.16	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	09-15-2008	16:10	7.13	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	12-19-2007	08:02	6.97	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	09-11-2007	08:50	6.94	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	08-25-2006	09:30	6.89	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	06-12-2008	14:00	6.8	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	02-27-2009	11:45	6.6	SU	35.865972	-106.3155681	Y
N3B	Two Mile Canyon below TA-59	pH	12-19-2008	11:00	6.07	SU	35.865972	-106.3155681	Y
				Median	7.15	SU			
				Standard Deviation	0.42	SU			

9. Weather data

Average weather for Los Alamos

Climate-Data.org

https://en.climate-data.org/north-america/united-states-of-america/new-mexico/los-alamos-871784/

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	-4 °C (24.8) °F	-2.3 °C (27.8) °F	2.2 °C (35.9) °F	6.9 °C (44.4) °F	11.9 °C (53.5) °F	18.2 °C (64.7) °F	19.5 °C (67.2) °F	17.8 °C (64.1) °F	14.4 °C (57.9) °F	8.2 °C (46.7) °F	1.9 °C (35.4) °F	-3.7 °C (25.4) °F
Min. Temperature °C (°F)	-9.3 °C (15.2) °F	-8.1 °C (17.5) °F	-4.5 °C (23.9) °F	-0.8 °C (30.6) °F	3.6 °C (38.4) °F	9.2 °C (48.6) °F	12.4 °C (54.3) °F	11 °C (51.8) °F	7.4 °C (45.4) °F	1.8 °C (35.2) °F	-3.6 °C (25.6) °F	-8.5 °C (16.7) °F
Max. Temperature °C (°F)	3.9 °C (39) °F	5.5 °C (41.9) °F	10.4 °C (50.7) °F	15.2 °C (59.4) °F	20 °C (67.9) °F	26.1 °C (79) °F	26.4 °C (79.5) °F	24.6 °C (76.3) °F	21.6 °C (70.9) °F	15.9 °C (60.6) °F	9.6 °C (49.2) °F	3.7 °C (38.7) °F
Precipitation / Rainfall mm (in)	30 (1.2)	30 (1.2)	36 (1.4)	38 (1.5)	44 (1.7)	32 (1.3)	77 (3)	98 (3.9)	67 (2.6)	52 (2)	31 (1.2)	32 (1.3)
Humidity(%)	58%	54%	46%	36%	32%	28%	44%	51%	50%	50%	50%	58%
Rainy days (d)	4	5	5	6	6	5	10	12	7	5	4	4

10. Water Dissolved oxygen from Intellus

Site ID	Location ID	Field Parameter	Measurement Date	Measurement Time	Field Measurement	Measurement Units	Latitude (Decimal)	Longitude (Decimal)	Usable	Average Temp	max DO	Exceeds max
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	12-19-2008	11:00	16.85	mg/L	35.865972	-106.3155681	Y	25.4	12.44	Not used
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	02-27-2009	11:45	10.12	mg/L	35.865972	-106.3155681	Y	27.8	11.91	

N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	03-07-2008	14:10	9.36	mg/L	35.865972	-106.3155681	Y	35.9	10.46	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	04-02-2007	11:50	9.34	mg/L	35.865972	-106.3155681	Y	44.4	9.25	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	04-20-2016	11:10	8.96	mg/L	35.865972	-106.3155681		44.4	9.25	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	04-15-2019	09:30	8.57	mg/L	35.865972	-106.3155681	Y	44.4	9.25	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	12-19-2007	08:02	8.28	mg/L	35.865972	-106.3155681	Y	25.4	12.44	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	09-17-2009	08:10	7.62	mg/L	35.865972	-106.3155681	Y	57.9	7.75	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	09-15-2008	16:10	7.28	mg/L	35.865972	-106.3155681	Y	57.9	7.75	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	09-11-2007	08:50	7.1	mg/L	35.865972	-106.3155681	Y	57.9	7.75	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	08-06-2010	13:04	6.75	mg/L	35.865972	-106.3155681	Y	64.1	7.21	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	06-12-2008	14:00	4.74	mg/L	35.865972	-106.3155681	Y	64.7	7.15	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	06-27-2007	14:52	4.1	mg/L	35.865972	-106.3155681	Y	64.7	7.15	
N3B	Two Mile Canyon below TA-59	Dissolved Oxygen	08-25-2006	09:30	3.74	mg/L	35.865972	-106.3155681	Y	64.1	7.21	
				Median	7.62	mg/L						
				Standard Deviation	2.07	mg/L						

11. *E. coli* in water from Intellus

No *E. coli* data found

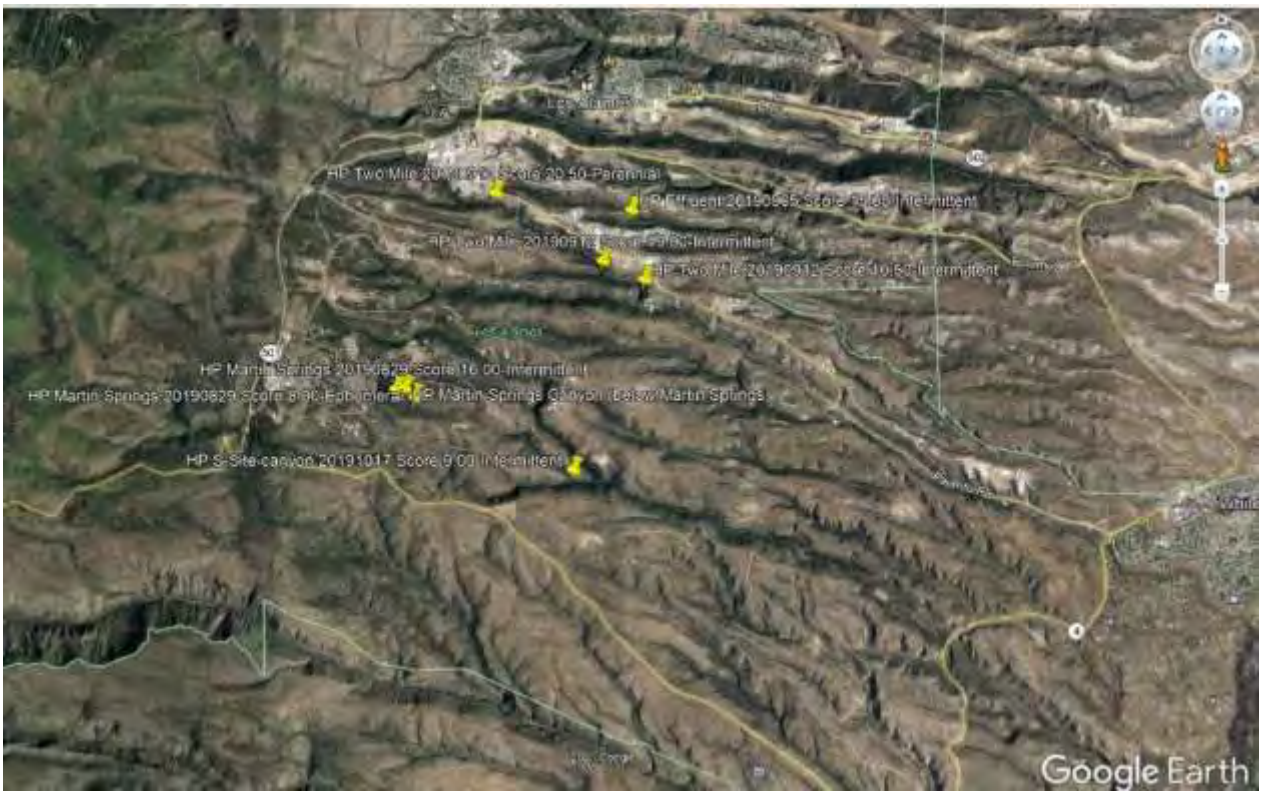
Appendix B
US Fish and Wildlife Service Environmental Conservation Online System Information for Planning and Consultation (IPaC) geographical area delineations for species evaluation.

The following map was created by the SWQB as part of this EUA. The map created in IPaC was used to determine potential threatened and endangered species within the study area. The IPaC map online tool does not provide a distance scale when running its evaluation.

Coverage:

20.6.4.128 RIO GRANDE BASIN. Ephemeral and intermittent portions of watercourses within lands managed by U.S. department of energy (DOE) within LANL

The area being evaluated is located in Los Alamos County, New Mexico and contains the lands managed by DOE within LANL. For more detailed site conditions refer to section VI of this analysis.

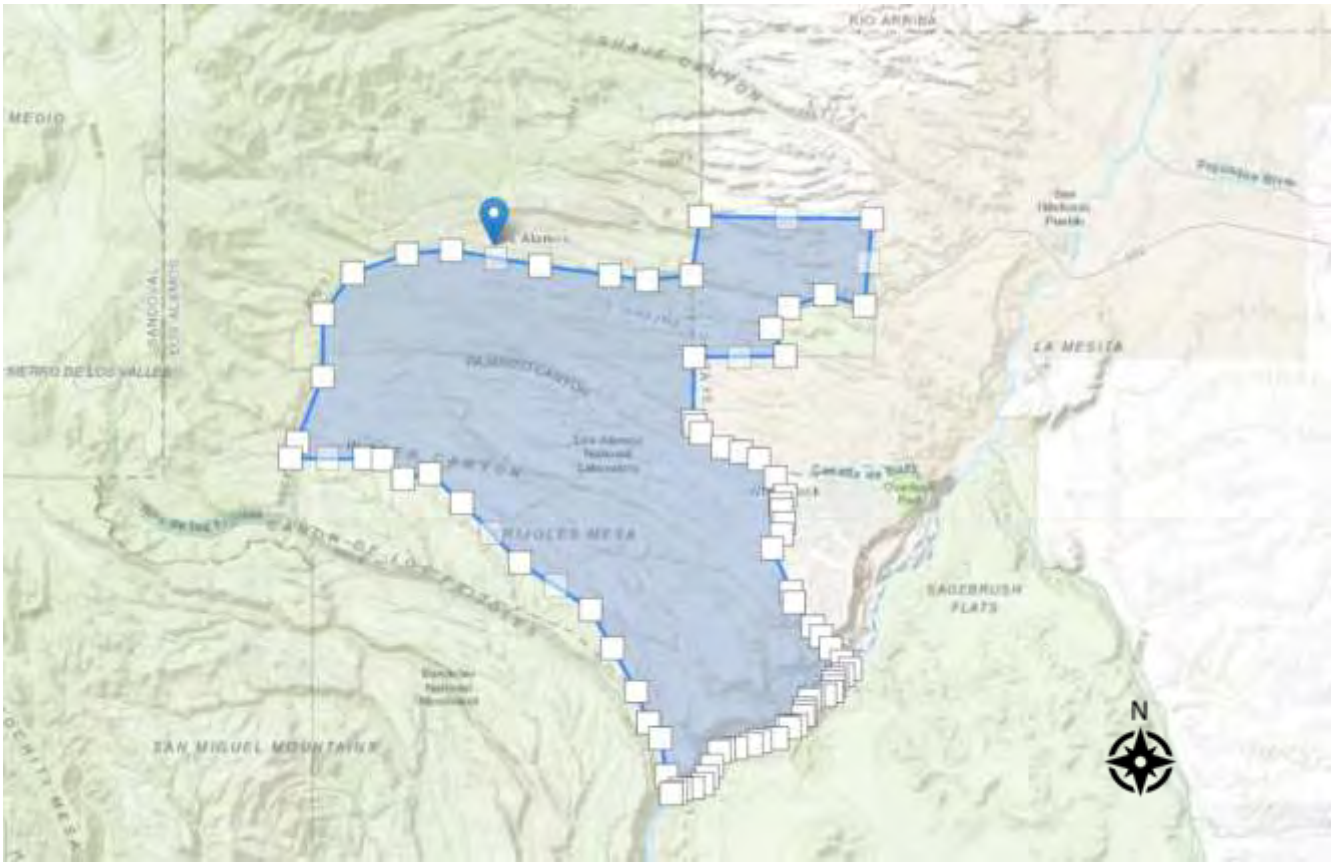


Metadata:

The delineation for determining threatened and endangered species that may be impacted by changes in WQS for the tributaries listed above was performed in IPaC and is illustrated in Figure B-1B. The delineation was conducted by manually defining a 41.92 square mile polygon with a 100 foot buffer; originating from the confluence of Ancho Canyon and the Rio Grande, upstream along the Rio Grande to the northeastern boundary of LANL; northwest to State Road 4; north along State Road 4 to Grand Canyon Dr in White Rock; northwest along Canada de Buey to a peak denoted only with an elevation of 6,847 feet; north to BIA-413; east to State Road 4; along State Road 4 until its merge with State Road 502; north to Barrancas Canyon; West to Pueblo Canyon Road; south to East Road, West along Los Alamos Canyon and Omega Road to Diamond Drive; southwest along west Road until it turns to Camp May Road which then merges to W. Jemez Road; along West Jemez Road until its termination with State Road 4; east along State

Road 4 until Entrance Road; south/southeast along Entrance Road until Entrance Road turns northwest; south from the turn on Entrance road to the Rio Grande.

Figure B-1B. Delineation used for identifying potential threatened and endangered species through IPaC.



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

183. The Commission adopts NMED's proposal to reserve these sections for basin-specific standards to plan for future expansion of the WQS. The final digit of the section number will be the same as the first digit of segments in the basin.

20.6.4.51 - 20.6.4.53: [RESERVED]

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

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

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

184. The Commission adopts NMED's proposal to move the basin-specific standards for the San Juan River Basin to Section A because the San Juan Basin contain the only basin-specific standards.

185. The Commission adopts NMED's proposal to replace the year with the phrases "most current" and "equivalent report by the Colorado river salinity control forum" because it simplifies the rulemaking process.

186. The Commission adopts NMED's proposal to amend Section A to conform the section to the language used by the Salinity Control Forum and its member states.

20.6.4.55 - 20.6.4.96: [RESERVED]

20.6.4.97 EPHEMERAL WATERS - All ephemeral surface waters of the state that are not included in a classified water of the state in 20.6.4.101 through 20.6.4.899 NMAC.

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

B. Criteria:

(1) The use-specific criteria in 20.6.4.900 NMAC, with the exception of the chronic criteria for aquatic life, are applicable for the designated uses listed in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria shall not exceed 548 cfu/100 mL, no single sample shall exceed 2507 cfu/100 mL (see Subsection B of 20.6.4.14 NMAC).
[20.6.4.97 NMAC - N, XX-XX-05]

187. The Commission rejects NMED's proposal to combine ephemeral and intermittent waterbodies into a single category of non-perennial waterbodies, because there are recognizable differences,

particularly with respect to hydrologic realities. Further, the notice in this triennial review that this would be proposed was not optimal; the original proposals did not include such a plan.

188. The Commission adopts NMED's proposal to create a provision containing default designated uses for unclassified nonperennial waters to ensure that all unclassified nonperennial waters are protected in compliance with the CWA. The default designated uses are livestock watering, wildlife habitat, secondary contact and limited aquatic life. Each use is appropriate for the following reasons:

(a) The section formalizes the WQCC's presumption that livestock watering and wildlife habitat are default uses for all unclassified waters. See Section 20.6.4.10.A. Wildlife habitat is required by the CWA Section 101(a)(2) and EPA's regulations, 40 CFR 131.2. Livestock watering should be protected because of its importance to New Mexico and the likelihood that livestock will use these waters when available.

(b) Recreation and aquatic life are required uses under the CWA.

(c) Regarding the primary contact use, the CWA and EPA regulations require the protection of recreation in and on the water. Primary contact criteria for E. coli bacteria are calculated using the specified formulae based upon an illness rate and the extent of anticipated use. In the case of nonperennial waters, both the likelihood of exposure by ingestion and the frequency of use for recreation are low. NMED proposes criteria that protect primary contact at the rate of 14 illnesses per thousand (assuming infrequent use). The resulting criteria are a monthly geometric mean of 548/100 mL, and a single sample criterion 2507/100 mL. These criteria are adopted because they satisfy EPA's goal of protecting primary contact while taking into consideration the less frequent use of these waters.

(d) Regarding the aquatic life use, the CWA and EPA regulations require the protection and propagation of fish and shellfish. All surface waters must include an aquatic life use unless a UAA has determined that the use is not attainable. The limited aquatic life subcategory is appropriate for nonperennial waters because the other subcategories are temperature-specific. Moreover, the limited aquatic life subcategory "fits" the type of aquatic communities likely to be found in nonperennial waters. Finally, the limited aquatic life subcategory is appropriate because

it satisfies the CWA and EPA regulations while avoiding the substantial burden on the state of preparing UAAs to justify not designating another subcategory of the aquatic life use for nonperennial waters.

189. The Commission rejects NMED's proposal to apply chronic aquatic life criteria to ephemeral waters because it desires more input and study before making such a change; however, the Commission believes it is appropriate to apply acute criteria to ephemeral waters because of the potential short-term exposures of aquatic life to pollutants.

190. The Commission rejects EBID's proposal to establish "coldwater aquatic habitat" as the designated use for the reasons stated above in paragraphs 41-44.

191. The Commission rejects AB's proposal to assign the default use of "aquatic life" rather than "limited aquatic life" to these unclassified waters, because it is not supported.

20.6.4.98 INTERMITTENT WATERS - All intermittent surface waters of the state that are not included in a classified water of the state in 20.6.4.101 through 20.6.4.899 NMAC.

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

B. Criteria:

(1) The use-specific criteria in 20.6.4.900 NMAC.

(2) The monthly geometric mean of E. coli bacteria shall not exceed 548 cfu/100 mL, no single sample shall exceed 2507 cfu/100 mL (see Subsection B of 20.6.4.14 NMAC).

[20.6.4.98 NMAC - N, XX-XX-05]

192. The Commission adopts NMED's proposal to create a provision containing default designated uses for unclassified intermittent waters to ensure that all unclassified intermittent waters are protected in compliance with the CWA. Intermittent waters have the same default uses as ephemeral waters for the same reasons stated above in paragraph 188, except that it is "aquatic life" rather than "limited aquatic life." Aquatic life in intermittent waters have a longer residence time, and there are many intermittent reaches of perennial streams. The Commission believes it is appropriate to apply chronic criteria to intermittent waters because of the potential long-term exposure of aquatic life to pollutants.

193. The Commission rejects EBID's proposal to establish "coldwater aquatic habitat" as the designated use for the reasons stated above in paragraphs 41-44.

20.6.4.99 PERENNIAL WATERS - All perennial surface waters of the state that are not included in a classified water of the state in 20.6.4.101 through 20.6.4.899 NMAC.

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

B. Criteria:

(1) Temperature shall not exceed 34°C (93.2°F). The use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses listed in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria shall not exceed 548 cfu/100 mL, no single sample shall exceed 2507 cfu/100 mL (see Subsection B of 20.6.4.14 NMAC).

[20.6.4.99 NMAC - N, XX-XX-05]

194. The Commission adopts NMED's proposal to create a provision containing default designated uses for unclassified perennial waters to ensure that all unclassified perennial waters are protected in compliance with the CWA. Perennial waters have the same default uses as intermittent waters for the same reasons stated above in paragraph 188. When an unclassified perennial water is placed in a segment, one of the subcategories will be assigned. The majority of perennial waters are classified. As unclassified perennial waters are studied, they will be moved to existing or new segments with more specific criteria.

195. The Commission rejects EBID's proposal to establish "coldwater aquatic habitat" as the designated use for the reasons stated above in paragraphs 41-44.

20.6.4.100: [RESERVED]

20.6.4.101 RIO GRANDE BASIN - The main stem of the Rio Grande from the international boundary [~~and water commission sampling station above American dam~~] with Mexico upstream to one mile below Percha dam. [~~(Sustained flow in the Rio Grande below Caballo reservoir is dependent on release from Caballo reservoir during the irrigation season; at other times of the year, there may be little or no flow.)~~]

A. Designated Uses: irrigation, [~~limited~~] marginal warmwater [~~fishery~~] aquatic life, livestock watering, wildlife habitat[~~,~~] and secondary contact.

B. [~~Standards~~]Criteria:

(1) In any single sample: pH [~~shall be~~]: within the range of 6.6 to 9.0[~~,~~] and temperature [~~shall not exceed~~] 34°C (93.2°F) or less. The use-specific numeric [~~standards~~] criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.

(2) [~~The monthly geometric mean of fecal coliform bacteria shall not exceed 200/100 mL; no single sample shall exceed 400/100 mL~~] The monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less; single sample 410 cfu/100 mL (see Subsection B of [~~20.6.4.13~~]20.6.4.14 NMAC).

(3) At mean monthly flows above 350 cfs, the monthly average concentration for: TDS [~~shall not exceed~~] 2,000 mg/L or less, sulfate [~~shall not exceed~~] 500 mg/L or less[~~,~~] and chlorides [~~shall not exceed~~] 400 mg/L or less.

C. Remarks: Sustained flow in the Rio Grande below Caballo reservoir is dependent on release from Caballo reservoir during the irrigation season; at other times of the year, there may be little or no flow.

[20.6.4.101 NMAC - Rp 20 NMAC 6.1.2101, 10-12-00; A, 12-15-01; A, XX-XX-05]

196. The Commission adopts NMED's proposal to change the segment because including the reach between the IBWC sampling station above American Dam and the International Boundary ensures that this reach has designated uses and criteria.

233. The Commission rejects AB's proposal to replace "limited aquatic life" with "aquatic life" and to exclude the chronic criteria in Section 20.6.4.900.J for the reasons stated in Section 20.6.4.HH, and there is no reason to adopt the second proposal if the first is not adopted.

20.6.4.125 RIO GRANDE BASIN - Perennial reaches of San Pedro creek.

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

B. Criteria:

(1) In any single sample: pH within the range of 6.6 to 8.8 and temperature 25°C (77°F) or less. The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less; single sample 410 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).

[20.6.4.125 NMAC - N, XX-XX-05]

234. The Commission adopts this new segment for San Pedro Creek for the reasons set out above in paragraph 210, above; see Segment 111.

20.6.4.126 RIO GRANDE BASIN - Perennial portions of Cañon deValle from Los Alamos national laboratory (LANL) stream gage E256 upstream to Burning Ground spring, Sandia canyon from Sigma canyon upstream to LANL NPDES outfall 001, Pajarito canyon from Arroyo de La Delfe upstream into Starmers gulch and Starmers spring and Water canyon from Area-A canyon upstream to State Route 501.

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

B. Criteria:

(1) In any single sample: pH within the range of 6.6 to 8.8 and temperature 24°C (75.2°F) or less. The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria 548 cfu/100 mL or less; single sample 2507 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).

[20.6.4.126 NMAC - N, XX-XX-05]

235. Both UC and NMED proposed to segment and adopt segment-specific standards for waters within or near LANL. The segments, set out now as segments 126, 127 and 128, are identical, but different designated uses and criteria were urged in this segment.

236. The Commission adopts this new segment to classify waters based upon an intensive study by the USFWS. The study supports the designated uses of coldwater aquatic life, wildlife habitat, secondary contact, and livestock watering. The aquatic life, wildlife habitat and recreation uses are required by CWA Section 101(a)(2) unless a UAA supports not designating them. For this segment, coldwater is the appropriate subcategory of aquatic life use because it is supported by the USFWS report and is consistent with the aquatic life use in adjacent Section 20.6.4.121, which includes tributaries of the Rio Grande in Bandelier National Monument (where high quality coldwater is the designated use). For this segment, secondary contact is the appropriate

subcategory of recreation because full-body contact in these small streams is unlikely and infrequent, and if it does occur the proposed criteria offer a proper level of protection. Finally, the uses of wildlife habitat and livestock watering are appropriate. The WQCC has historically presumed these uses for all unclassified surface waters. There is no question about wildlife using these streams. There also is evidence that livestock watering is an existing use. Laboratory publications acknowledge the presence of livestock on or adjacent to this segment, including horseback riding, cattle grazing and free-range chickens and dairy goats. The designation of livestock watering is based on both the existing use of these waters by livestock, as well as for the protection of downstream livestock watering uses.

237. The Commission rejects UC's proposal to designate just limited aquatic life because USFWS demonstrated that shellfish typically found in coldwater aquatic communities is present in these streams. The coldwater subcategory is intended for "the protection and propagation of fish, shellfish and wildlife." Accordingly, the presence of shellfish indicative of a coldwater aquatic community establishes an existing use, even in the absence of fish. In addition, the USFWS documented existing macroinvertebrate communities in all of these streams (except Water Canyon). These macroinvertebrate communities (except Sandia Canyon) compare favorably (only slightly impaired or full support - impacts observed) to Upper Los Alamos Canyon, a coldwater fishery at the time of the study. The USFWS also determined that eight species in Los Alamos and Pajarito Canyons (identified by NMED) were classified by the Idaho Department of Environmental Quality (DEQ) as preferring coldwater. Moreover, the Laboratory's invertebrate data included several species that prefer coldwater in Los Alamos, Pajarito, Sandia and Chaquehui Canyons. Finally, to the extent that the absence of fish is relevant to the subcategory designation, the term "existing use" has a broader meaning than "existing on this date". The absence of fish in 2003 is not the benchmark for designation of an aquatic life use.

238. The Commission rejects UC's proposal not to designate the livestock watering use on the basis that it is not an existing or attainable use because livestock are not permitted on Laboratory property and will not be in the foreseeable future, pointing to fencing and security patrols as evidence of an intent to exclude livestock. The evidence indicates that livestock continue to use

streams on Laboratory property despite UC's intent to exclude them; NMED has observed tracks, feces, wallows, and overgrazing, and has discussed the impacts of livestock grazing on surface water on Laboratory property with UC representatives. Accordingly, livestock watering is an existing use, and cannot be removed without a UAA.

239. At the hearing, UC suggested the streams in this segment could be divided between lower reaches used by livestock and upper reaches that are not used by livestock. It suggested that the division points could be based on "breaks in the slopes and positions of the springs." UC did not make any proposal to this effect, however, and the Commission will not adopt such a division after the hearing in the absence of an earlier proposal.

240. The Commission rejects UC's proposed dissolved oxygen (DO) criterion of 5 mg/l for Pajarito Canyon, Starmers Gulch and Water Canyon, and 4 mg/l for Canon de Vale and Sandia Canyon, and adopts NMED's proposed DO criterion of 6 mg/l for all waters in this segment in order to protect the designated use of coldwater aquatic life.

20.6.4.127 RIO GRANDE BASIN - Perennial portions of Los Alamos canyon upstream from Los Alamos reservoir and Los Alamos reservoir.

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

B. Criteria:

(1) In any single sample: pH within the range of 6.6 to 8.8 and temperature 20°C (68°F) or less. The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less; single sample 410 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).

[20.6.4.127 NMAC - N, XX-XX-05]

241. The Commission adopts another new segment proposed by NMED and UC, for the same reasons as set out above in paragraphs 235-236. The proposed uses are appropriate, as discussed above. The only difference involves the designated use of primary contact, which is based on evidence of swimming in Los Alamos Reservoir.

242. The Commission has adopted NMED's proposed "aquatic life" designation elsewhere, so rejects UC's retention of the "fishery" designation.

20.6.4.128 RIO GRANDE BASIN - Ephemeral and intermittent portions of watercourses within lands managed by U.S. department of energy (DOE) within Los Alamos national laboratory, 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. (Surface waters 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:

(1) The use-specific criteria in 20.6.4.900 NMAC, except the chronic criteria for aquatic life are applicable for the designated uses listed in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria 548 cfu/100 mL or less; single sample 2507 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).

(3) The acute total ammonia criteria set forth in section 20.6.4.900.K (Salmonids Absent) are applicable to this use.

[20.6.4.128 NMAC - N, XX-XX-05]

243. The Commission adopts another new segment proposed by NMED and UC, for the same reasons as set out above in paragraphs 235-236. The proposed uses are appropriate, as discussed above.

244. The Commission adopts UC's proposed acute total ammonia criteria for this segment in order to identify the applicable criteria.

20.6.4.129 RIO GRANDE BASIN - Perennial reaches of the Rio Hondo.

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

B. Criteria:

(1) In any single sample: specific conductance 400 µmhos/cm or less, pH within the range of 6.6 to 8.8, total phosphorous (as P) less than 0.1 mg/L and temperature 20°C (68°F) or less. The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less; single sample 410 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).

[20.6.4.129 NMAC - N, XX-XX-05]

245. The Commission adopts NMED's proposal to create a new segment and to restore the phosphorous criterion removed inadvertently in the 1998 triennial review. The designated uses and associated criteria have been carried forward from the original segment; see segment 123, above.

20.6.4.130 - 20.6.4.200: [RESERVED]

20.6.4.201 PECOS RIVER BASIN - The main stem of the Pecos river from the New Mexico-Texas line upstream to the mouth of the Black river (near Loving).

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

B. [~~Standards~~]Criteria:

(l) In any single sample: pH [~~shall be~~] within the range of 6.6 to 9.0 and temperature [~~shall not exceed~~] 32.2°C (90°F) or less. The use-specific numeric [~~standards~~]criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses listed above in Subsection A of this section.

(2) [~~The monthly geometric mean of fecal coliform bacteria shall not exceed 200/100 mL; no single sample shall exceed 400/100 mL~~]The monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less; single sample 410 cfu/100 mL or less (see Subsection B of [~~20.6.4.13~~]20.6.4.14 NMAC).

(3) At all flows above 50 cfs: TDS [~~shall not exceed~~]20,000 mg/L or less, sulfate [~~shall not exceed~~]3,000 mg/L[~~,~~] or less and chloride [~~shall not exceed~~]10,000 mg/L or less.

[20.6.4.201 NMAC - Rp 20 NMAC 6.1.2201, 10-12-00; A, XX-XX-05]

246. The Commission adopts changes proposed by NMED and already described above.

Reneau and McDonald 1996
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Landscape History and Processes on the Pajarito Plateau, Northern New Mexico

LA-UR-96-3035

Landscape History and Processes on the Pajarito Plateau, Northern New Mexico

Rocky Mountain Cell, Friends of the Pleistocene
Field Trip Guidebook
September 12-15, 1996

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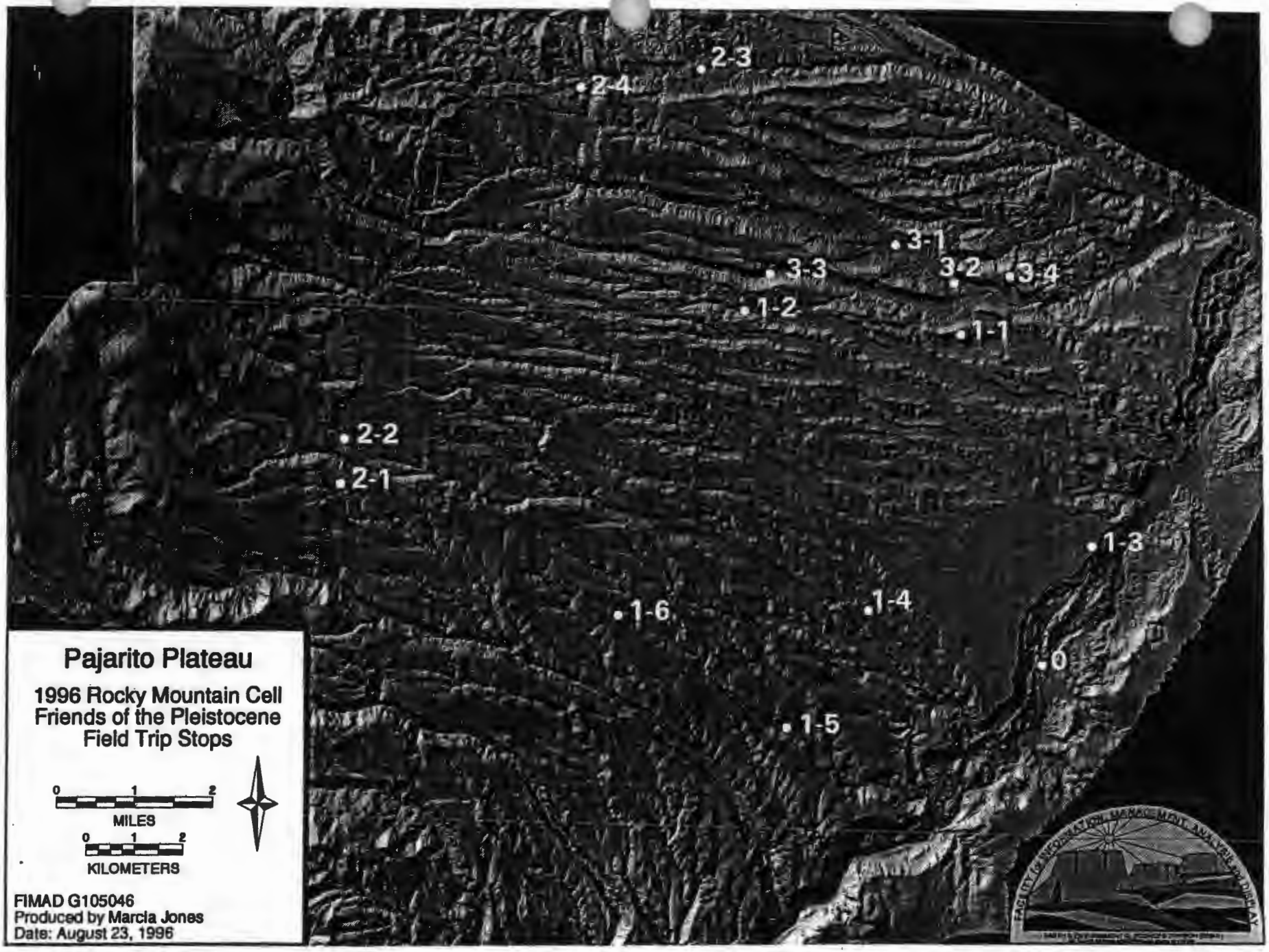
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Pajarito Plateau
1996 Rocky Mountain Cell
Friends of the Pleistocene
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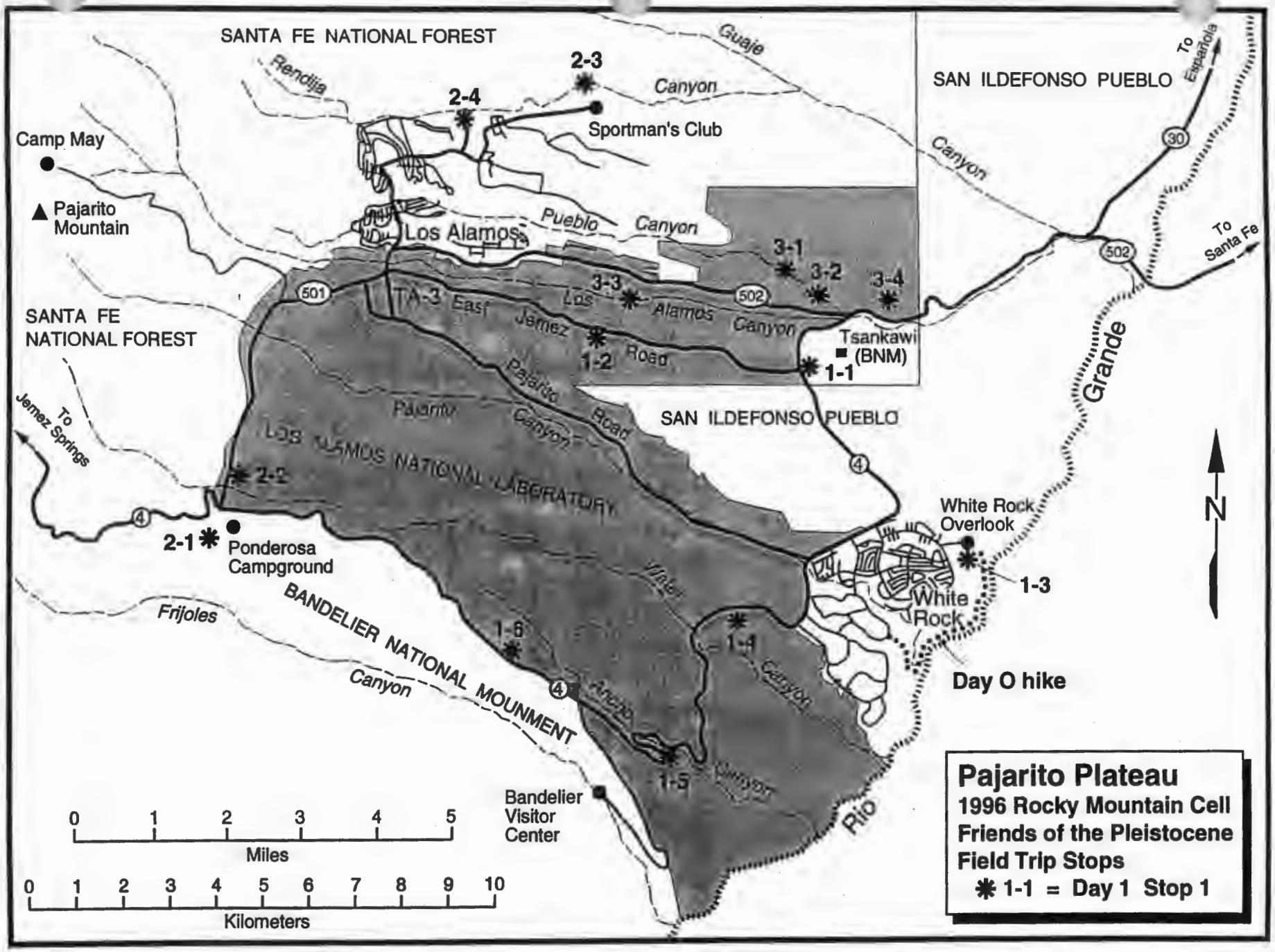
Produced by Marcia Jones
Date: August 23, 1996



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Colleagues who have made important contributions to this work on the Pajarito Plateau, in addition to the leaders of this field trip, include David Dethier of Williams College; Tom Kolbe, Susan Olig, and Ivan Wong of Woodward-Clyde Federal Services; Steve Forman of the University of Illinois; Will Graf of Arizona State University; Les McFadden and Paula Watt of the University of New Mexico; Paul Drakos of Glorietta Geoscience; Mark Hemphill-Haley of the University of Oregon; Dave Simpson of Woodward-Clyde Consultants; Sue Cannon of the U.S. Geological Survey; and Scott Baldridge, Karen Carter, Fraser Goff, Pat Longmire, Dave Vaniman, and Giday WoldeGabriel of Los Alamos National Laboratory. Participants in the "Canyons" investigations have included Jeff Blossom, Dave Broxton, Flori Caporuscio, Deba Daymon, Jenny Harris, Johnnye Lewis, Pat Longmire, Gerald Martinez, Orrin Myers, Mary Mullen, Randy Ryti, Linnea Wahl, and Brad Wilcox, and field rad teams from ERG in Albuquerque (Dave Hunter, Darrio Rocha, John Taylor) and Chemrad in Oak Ridge, Tennessee (Mike Blair, Chuck Flynn, Brett Lawrence). We have learned and continue to learn a lot from all of you.

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Last but not least, this guidebook would have not been possible except for the outstanding support provided by Anthony Garcia and Lanny Piotrowski with illustrations and word processing under a ridiculously short deadline. Thanks!

CAUTIONARY PREFACE

Much of this field trip is on Department of Energy land, passing through many areas posted with DOE "No Trespassing" signs. Several field trip stops are in such areas, and these stops should not be made without being in the company of Laboratory or other authorized personnel on official business. The consumption of alcohol is prohibited on DOE land, so please wait until appropriate times to imbibe (lunch stops are on Los Alamos County lands, where no such restrictions apply). Some stops are within Bandelier National Monument, so please respect their regulations as well (no rock hammers!). Part of the field trip also passes through lands of San Ildefonso Pueblo, closed to the public, and we ask that their boundaries be respected. Archaeological sites are scattered throughout the field trip area, and are protected under Federal law: feel free to admire artifacts, but please leave them where you found them!! Finally, be warned that the police of Los Alamos County show great diligence in their job: speeding, open containers, minors with alcohol, etc., are an invitation for trouble, so, please use common sense on this field trip.

INTRODUCTION

The Pajarito Plateau is a dissected landscape of alternating mesas and canyons that is located on the east flank of the Jemez Mountains (the Sierra de los Valles), draining eastward to White Rock Canyon of the Rio Grande (Fig. 1). The defining feature of the Plateau is the Tshirege Member of the Bandelier Tuff, a massive series of ignimbrites (also called "ash-flow tuffs") erupted from the Jemez Mountains at ca. 1.22 Ma and associated with development of the Valles caldera. The Tshirege Member buried most of the former topography between the mountains and the Rio Grande, almost instantaneously creating a new landscape and providing an excellent early Pleistocene datum which aids in an examination of neotectonics and drainage evolution.

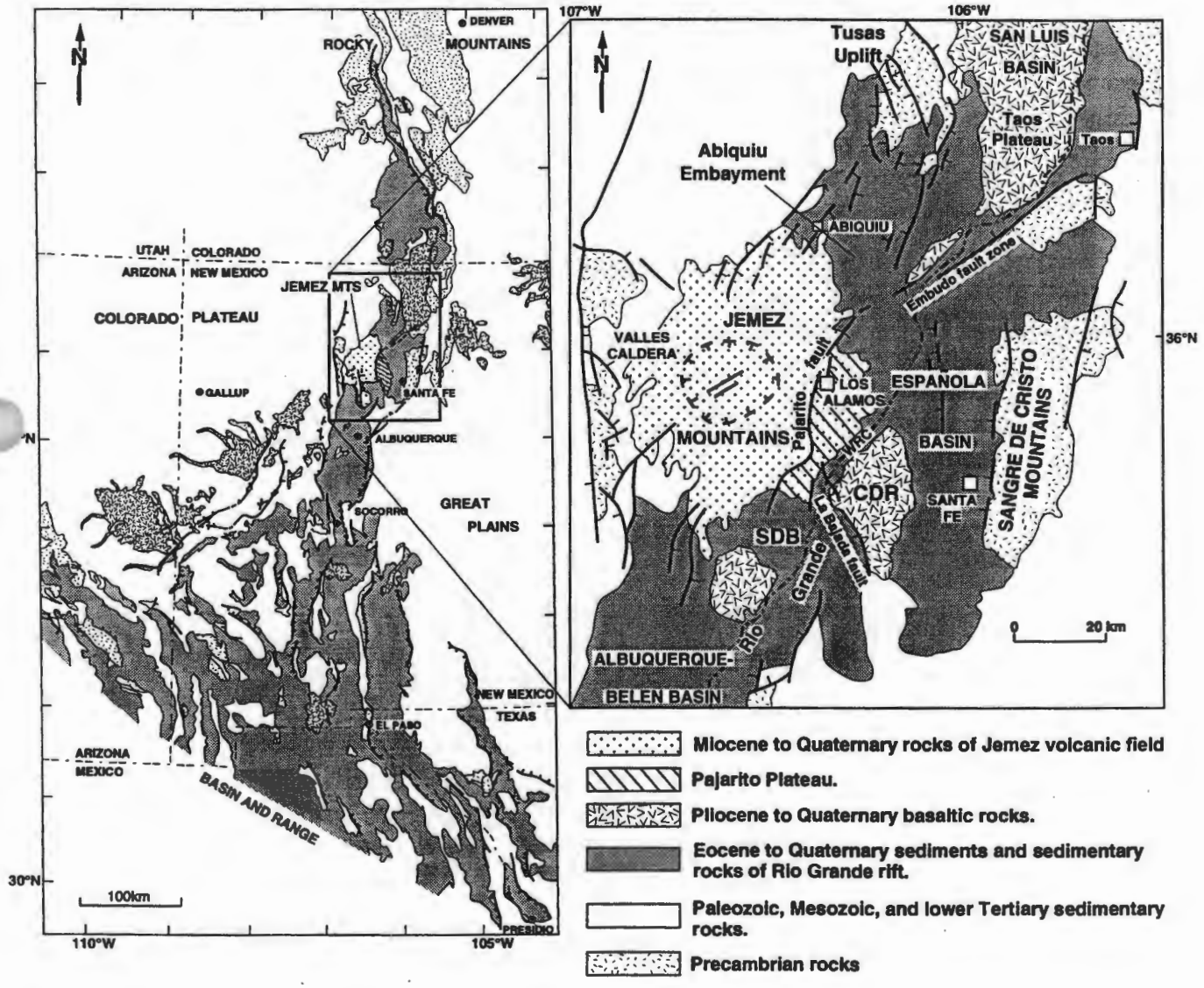

Fig. 1. Generalized geologic map showing the distribution of Cenozoic sediments of the Rio Grande rift and adjacent Basin and Range province, Cenozoic volcanic rocks of the rift and the Jemez lineament, and major faults. Inset shows general geologic and geographic features in the Los Alamos area. CDR: Cerros del Rio volcanic field; SDB: Santo Domingo basin; WRC: White Rock Canyon of the Rio Grande (modified from Baldridge et al., 1994).

This area is widely known and studied by volcanologists, with the Valles caldera being the "type-example" of a resurgent caldera, and with the Bandelier Tuff providing world-class examples of high-volume (>10^2 km^3) silicic ignimbrites (Smith and Bailey, 1966, 1968; see field trip guides to this area by Bailey and Smith, 1978; Self et al., 1987; Goff et al., 1989, 1996; Self and Sykes, 1996). The Pajarito Plateau is also renowned for its archaeological sites, possessing an exceptionally high density of ancestral Puebloan (Anasazi) ruins both in Bandelier National Monument and in surrounding areas. The Plateau has also entered history books as the home of "Project Y" of the "Manhattan Engineering District", the top-secret World War II project to develop the first atomic bombs which has evolved into the present Los Alamos National Laboratory ("LANL", a Department of Energy facility operated by the University of California).

Research on Quaternary geology and surface processes on the Pajarito Plateau has accelerated over the last 5-10 years, driven in large part by seismic hazard and environmental concerns at LANL. A Seismic Hazards Investigation Program was initiated in 1984 (Gardner and House, 1987), and has subsequently resulted in an increased understanding of many aspects of Pajarito Plateau geology. Field work for the LANL Environmental Restoration Project was begun in 1992, part of a nationwide DOE program whose ambitious goal is to systematically evaluate and clean up contaminated sites throughout the DOE complex, and has further spurred detailed earth science investigations across the Laboratory.

This field trip will focus on select aspects of the geology of the Pajarito Plateau, particularly the late Quaternary geomorphic history and soils, supplemented by briefer discussion of a range of topics pertaining to Quaternary geology, surface processes, and archaeology. No attempt is made on the field trip to cover all related topics, although references contained in this introduction and in the logs are intended to direct the reader to much of the recent and earlier work, including work that has not yet been published outside the internal LANL literature (but which is generally available for distribution).

Modern Climate

The Pajarito Plateau has a semiarid, temperate mountain climate (Bowen, 1990, 1992). The average temperature is about 8.8°C (47.8°F) in Los Alamos (7380', 2250 m elev.) and 9.6°C (49.3°F) in White Rock (6380', 1945 m elev.), with maximum and minimum temperatures occurring in July and January, respectively (Fig. 2). The average annual precipitation is about 45 cm (17.8 in) in Los Alamos and 34 cm (13.3 in) in White Rock. Precipitation has a strong maximum in July and August, corresponding with the "summer monsoon" and providing ~40% of the average annual total. Summer moisture is derived from the south, primarily the Gulf of Mexico, and is associated with thunderstorms that can develop on an almost daily basis, producing locally intense but spatially variable rainfall. Analyses of Los Alamos precipitation data by Bowen (1990) indicate that 1-hr rainfalls of ~3-4 cm and 15-min rainfalls of ~2-3 cm occur every 10 yrs on different parts of the Plateau (with higher average intensities occurring to the west). These intense rainfalls can generate very rapid surface runoff and flashy flood peaks.

Snowfall is primarily derived from frontal storms that originate to the west over the Pacific Ocean, and is highly variable from year to year (Bowen, 1990, 1992). A historic minimum of 24 cm occurred in Los Alamos in 1949-1950, and a maximum of 389 cm in 1986-1987. On average, winter is the driest season on the Pajarito Plateau, with the minimum average monthly precipitation occur-

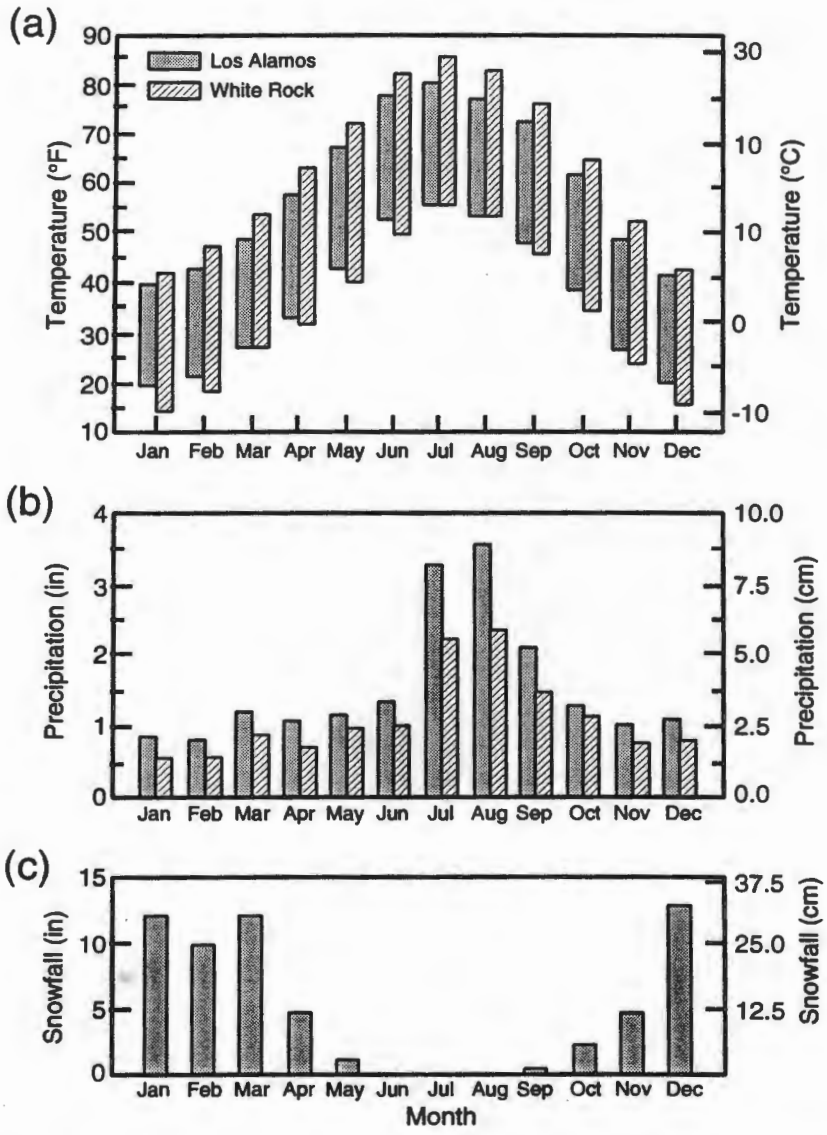

Fig. 2. Summary of "normal weather" in Los Alamos (1961-1990) and White Rock (1965-1990). (a) average daily minimum and maximum temperature, and (b) average monthly precipitation for both sites; and (c) average monthly Los Alamos snowfall (from Bowen, 1992).

ring in February (Fig. 2). However, plant-available water is much less in the spring due to higher evapotranspiration rates, and extended dry periods in May and June are common.

Systematic variations in precipitation occur between the lower elevation, eastern Pajarito Plateau and the higher elevation, western Plateau, with both mean summer and mean annual precipitation increasing to the west towards the Jemez Mountains (Fig. 3, Bowen 1990, 1992). Relations between elevation and annual precipitation for the area have been prepared by Spiegel and Baldwin (1963) and Rogers (1994), as shown in Figure 4.

Modern Vegetation

The modern vegetation of the Pajarito Plateau is dominated by piñon-juniper ("PJ") woodlands to the east and ponderosa pine forests to the west, modified by variations in soils, slope aspect, and other factors such as anthropogenic disturbances (Foxx and Tierney, 1984; Allen, 1989). The east-

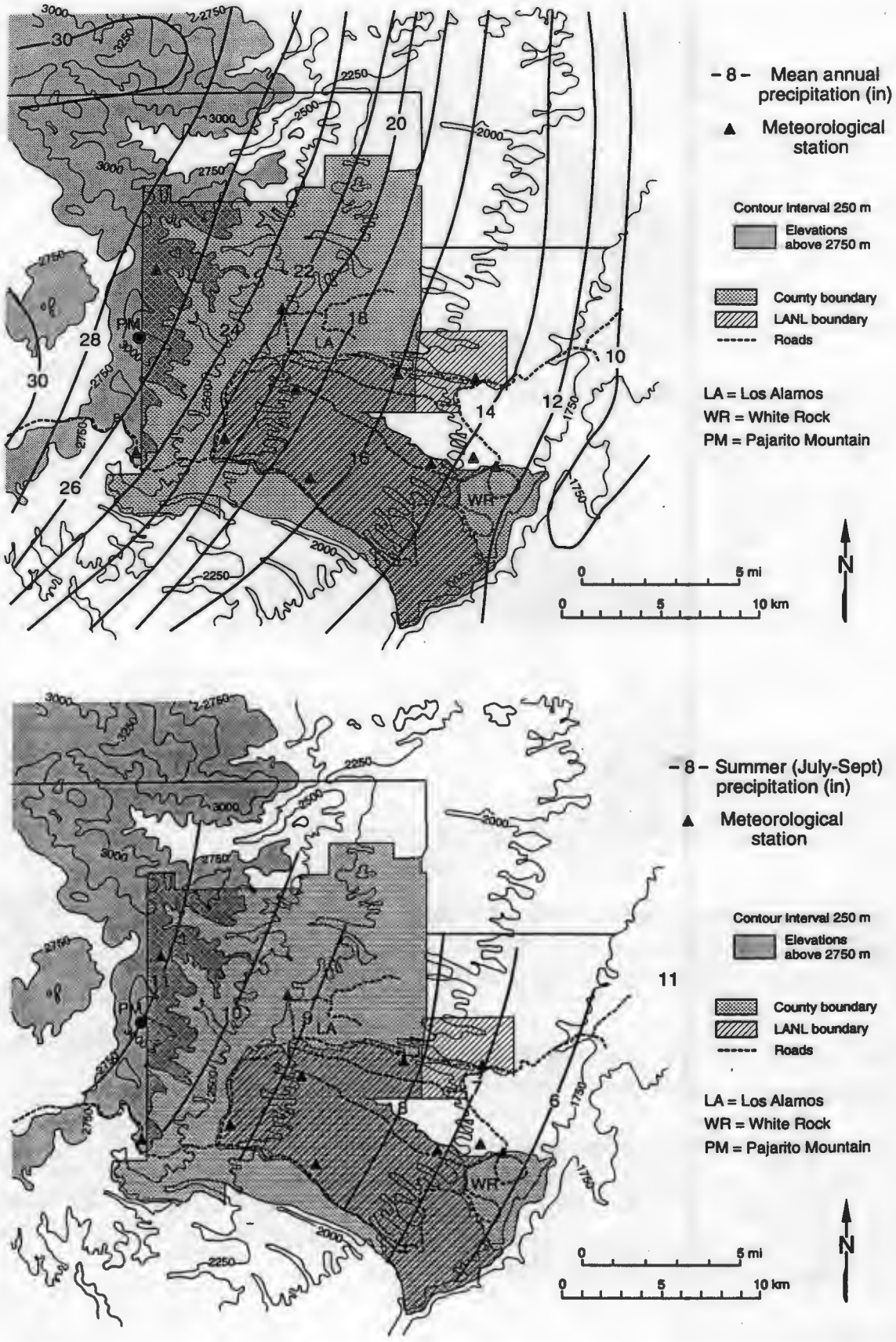

Fig. 3. Maps showing east to west variations in (a) mean annual precipitation across the Pajarito Plateau, and (b) July to September mean precipitation (the "summer monsoon"). From Rogers (1994), as modified from Bowen (1990) and Williams (1986).

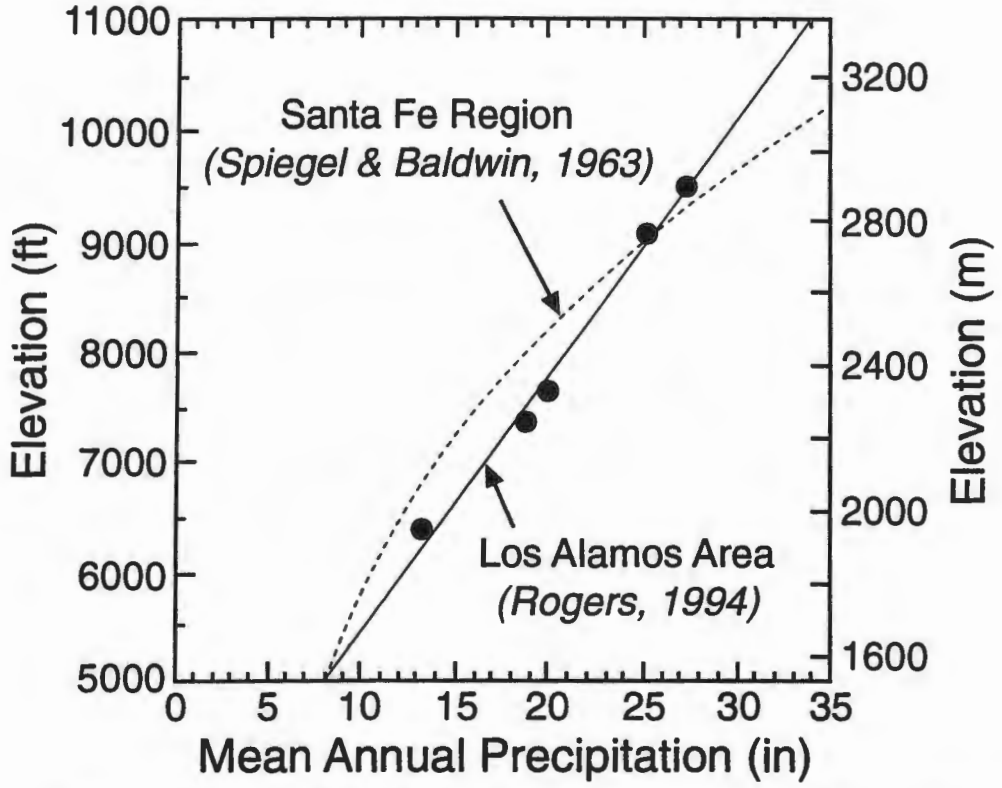

Fig. 4. Elevation-precipitation relationships for the Santa Fe region estimated by Spiegel and Baldwin (1963) and for the Los Alamos area by Rogers (1994)..

west orientations of the canyons produce strong variations between north-facing and south-facing canyon walls, and vegetation more typical of montane forests in the Jemez Mountains can extend significant distances to the east on north-facing slopes, contrasting with relatively arid conditions on opposing south-facing walls. Cold air drainage from the Sierra de los Valles also helps create relatively moist environments in the canyons, particularly their western parts. On mesas, ponderosa pines often extend farther east in relatively thick and porous pumice-rich soils, adjacent to piñon pines and junipers where thinner soils overlie tuff bedrock. Ponderosa pines can also be common in some sandy canyon bottoms to the east.

The general east-west variations in vegetation communities between the Rio Grande and the summits of the Jemez Mountains, from Allen (1989), are shown below.

Elevation	**General Vegetation Communities**
1600-1900 m	Juniper grasslands (*Juniperus monosperma, Bouteluoa* sp.)
1900-2100 m	Piñon-juniper woodlands (*Pinus edulis, Juniperus monosperma*)
2100-2300 m	Ponderosa pine forests (*Pinus ponderosa*)
2300-2900 m	Mixed conifer forests of ponderosa pine, Douglas-fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), aspen (*Populus tremuloides*), and limber pine (*Pinus flexilis*)
2900-3500 m	North-facing slopes: Spruce-fir forests of Engelmann spruce (*Picea engelmanni*) and corkbark fir (*Abies lasiocarpa* var. *arizonica*)
	South-facing mountain slopes: local areas of high elevation grasslands (*Festuca thurberi, Danthonia parryi*)

Paleoenvironments

Paleoclimatic data are sparse in the immediate vicinity of the Pajarito Plateau and the Jemez Mountains, with no long site-specific records presently existing (Spaulding, 1992). Inferences about late Quaternary changes in vegetation and climate thus must be based on work in surrounding regions, subject to the uncertainties imparted by the original records and by extrapolation to the Plateau.

Many of the available paleoclimatic records indicate that the late Pleistocene climate of the Southwest was generally wetter than today, with precipitation probably dominated by winter frontal storms (Spaulding et al., 1983; Hall, 1985; Van Devender et al., 1987; Allen, 1991; Phillips et al., 1992; Thompson et al., 1993). There is also some indication from pollen records that the full-glacial climate (ca. 22-16 ^{14}C ka) was colder and drier than the latest Pleistocene, with little summer rainfall (Spaulding, 1992). Late Pleistocene vegetation at the elevation of the Pajarito Plateau elsewhere in the Southwest included montane forests or parklands of spruce and fir (Wright et al., 1973; Betancourt, 1990; Anderson, 1993), and similar vegetation communities presumably occurred on the Plateau.

Vegetation more closely resembling modern communities became established perhaps around 10 ^{14}C ka, associated with a warmer, drier climate than in the latest Pleistocene and greatly enhanced summer precipitation. A variety of paleoclimate records from the Rocky Mountains of Colorado, the Colorado Plateau, and the southwestern deserts imply that summer rainfall in the early Holocene was higher than today, indicating stronger monsoonal circulation at that time (e.g., Markgraf and Scott, 1981; Friedman et al., 1988; Betancourt, 1990; Davis and Shafer, 1992; Thompson et al., 1993). For the middle Holocene, particularly ca. 7.5-5.5 ^{14}C ka, Spaulding (1992) points out a contrast in available records between apparently warmer and moister conditions to the north and west of the Pajarito Plateau and pronounced aridity to the south, compounding the uncertainty as to the middle Holocene climate on the Plateau.

Archaeology

The archaeological record of the Pajarito Plateau and surrounding areas is dominated by relatively late stages of ancestral Puebloan or Anasazi culture. Most of the ruins date to after about A.D. 1200, post-dating the peak of Anasazi culture in areas to the west such as Chaco Canyon and Mesa Verde. Records of earlier periods are relatively sparse. A brief discussion of the major prehistoric periods follows, with the general chronology from Cordell (1979, 1984) and Stuart and Gauthier (1981).

The PaleoIndian Period is dated to ca. 10,000 B.C. to ca. 5500-4000 B.C., and is poorly understood on the Pajarito Plateau. Elsewhere it includes the big-game hunters of the Clovis and later Folsom cultures. Rare Folsom points (ca. 8000-9000 B.C.) provide evidence of early prehistoric occupation on the Plateau (Steen, 1977, 1982). Two buried fire pits that were recently exposed in trenches on Pajarito Mesa, dated at ca. 9.3-9.5 ^{14}C ka (ca. 8200-8600 cal B.C.; Kolbe et al., 1994; Reneau et al., 1995b), provide confirmation of prehistoric occupation during this period.

The Archaic Period is considered to extend from ca. 5500-4000 B.C. to ca. A.D. 400-600. The most common evidence from this period on the Pajarito Plateau consists of surface lithic scatters which are undated or poorly dated. Some recent dates from buried sites have been obtained from investigations of late Quaternary deposits on the Plateau, specifically a date of ca. 3.94 ^{14}C ka (~2460 cal B.C.) from a site in Frijoles Canyon and a date of ca. 4.66 ^{14}C ka (~3370-3470 cal B.C.) from a hearth in the Fence Canyon area.

The local Rio Grande Anasazi (prehistoric Pueblo) record begins with the relatively poorly understood Developmental Period, which extended from ca. A.D. 600-1175. The successive Coalition Period (ca. A.D. 1175-1325) is better understood, and included major increases in prehistoric populations in this area. Peak occupation of relatively high elevation mesas on the Pajarito Plateau occurred in the Late Coalition Period, ca. A.D. 1250-1325, and ruins from this period occur on most mesa tops (Stuart and Gauthier, 1981; Orcutt, 1991). The Classic Period of the Rio Grande Anasazi extended from ca. A.D. 1325-1600, and during this period populations consolidated into relatively large pueblos at lower elevations, including Tshirege, Tyuonyi, Otowi, and Tsankawi (Stop 1-1). These sites were apparently abandoned shortly before the arrival of Spaniards, and the modern pueblos of San Ildefonso, Santa Clara, and Cochiti along the Rio Grande trace their ancestry to the prehistoric inhabitants of the Pajarito Plateau.

History

The first Europeans to visit the Pajarito Plateau region were Spaniards with the Coronado expedition in 1541, although they likely remained to the east within the Rio Grande valley. Brief visits up the Rio Grande were next made in 1581 and 1582 by the Rodriguez and Espejo expeditions, with actual conquest of the region by Onate in 1598. The Spanish were expelled during the Pueblo revolt of 1680, but the area was reconquered by de Vargas in 1692.

Much of the Pajarito Plateau was given to the Sanchez family as a Spanish Land Grant in 1742, part of which was later known as the Ramon Vigil Grant, beginning a period of small-scale subsistence farming. However, significant and wide-spread land-use changes probably did not occur on the Pajarito Plateau until at least the 1860s, with Navaho and Apache raiding parties restricting use first by the Spanish and later by Americans (this area became a United States territory with the Mexican Cession in 1848). Large numbers of sheep and cattle were being grazed in the area by the 1880s, and commercial logging began in 1897. Grazing, logging, and farming continued until 1942 when part of the area was taken over by the U.S. Government for the Manhattan Project, whose purpose was to develop the first atomic bombs. Many areas were developed beginning in 1943 with the WW II activities, and then for subsequent growth of the Los Alamos Scientific Laboratory, the Los Alamos townsite, and the initial construction camp and later bedroom community of White Rock (see summaries in Foxx and Tierney, 1984, Allen, 1989, and Rothman, 1992).

Tectonic Setting

The Pajarito Plateau is located within the Española basin of the Rio Grande rift, a major north-south trending continental rift that extends from near the Mexican border into southern Colorado (Fig. 1). The rift has been active since perhaps ~27-28 Ma, with major rift basins forming by ~15 Ma (e.g., Chapin, 1988; Ingersoll et al., 1990; Chapin and Cather, 1994).

The Española basin is bounded to the north by the Embudo fault and to the south by the La Bajada fault, which are interpreted as accommodation zones that transfer displacement between the Española basin, the San Luis basin and the Abiquiu embayment to the north, and the Santo Domingo basin to the south (Kelley, 1979; Muehlberger, 1979; Aldrich, 1986; Baldridge et al., 1994; Chapin and Cather, 1994; Gonzalez, 1995). The Pajarito fault zone forms the active western boundary of the Española basin and the Rio Grande rift, crossing the western Pajarito Plateau on and adjacent to LANL (Manley, 1979; Golombek, 1983; Golombek et al., 1983; Gardner and Goff, 1984; Gardner

and House, 1978; Wong et al., 1995; Olig et al., 1996). It is believed to have been active since at least around 5 Ma on the northern Plateau, with deformation along the southern part of the fault beginning prior to 16.5 Ma (Gardner and Goff, 1984).

The Española basin is often referred to as a half-graben, as it only displays major Quaternary faulting on its western border (the Pajarito fault system), and the structurally deepest part of the basin lies near its western margin. However, the use of the term "half-graben" for the Española basin has been questioned because it may oversimplify the basin's structure and result in use of an inappropriate conceptual model (see discussion in Goff et al., 1996, Day 1, Stop 6). In detail, geophysical studies and examination of subsurface drill hole data indicate that the structurally deepest part of the basin, occurring under the western Pajarito Plateau (Ferguson et al., 1995), is bounded to the east by a series of mainly down-to-the-west normal faults that underlie much of the Plateau (Dransfield and Gardner, 1985). Quaternary extension rates in this part of the Rio Grande rift are estimated to be ~0.11 mm/yr, with most of this represented by offset on the Pajarito fault system (Kelson and Olig, 1995).

The Pajarito fault system largely occurs in areas underlain by the ca. 1.22 Ma Tshirege Member of the Bandelier Tuff ($^{40}Ar/^{39}Ar$ age from Izett and Obradovich, 1994), which provides an excellent datum for evaluating Quaternary faulting. The fault system includes: 1) the ~41 km long east-facing Pajarito fault zone, with an estimated maximum vertical displacement of ~155 m and an average along-strike displacement of ~80 m since 1.22 Ma; 2) the ~9-14 km long west-facing Rendija Canyon fault zone, with an estimated maximum vertical displacement of ~36 m and an average displacement of ~22 m since 1.22 Ma; and 3) the ~9-12 km long west-facing Guaje Mountain fault zone, with an estimated maximum vertical displacement of ~27 m and an average displacement of ~15 m since 1.22 Ma (Fig. 5) (Gardner and House, 1987; Wong et al., 1995; Olig et al., 1996).

Despite a considerable amount of recent work on the Pajarito fault system (Kolbe et al., 1994, 1995; Carter and Gardner, 1995; Carter and Winter, 1995; McCalpin, 1995; Reneau et al., 1995b; Wong et al., 1995, 1996; Kelson et al., 1996; and Olig et al., 1996), many uncertainties remain concerning its kinematics and paleoseismic history. Some of these uncertainties will be addressed on this field trip, along with visits to sites where useful paleoseismic information has been obtained (Day 2 stops and road log).

Geologic Units

The primary geologic units exposed on or adjacent to the Pajarito Plateau consist of Miocene to early Pleistocene sediments and volcanic rocks associated with the Rio Grande rift and the Jemez and Cerros del Rio volcanic fields (Fig. 1). Geologic maps of the entire area of this field trip were prepared by Griggs (1964) and Smith et al. (1970), and more detailed maps of select areas have been prepared by many subsequent workers. A highly generalized cross section indicating the relationships of these units is shown in Figure 6, and these units are discussed briefly below.

Santa Fe Group. Miocene rift-filling sediments of the Santa Fe Group (Tesuque and/or Chamita Formations of Galusha and Blick, 1971), dominantly composed of friable sandstones, underlie the Pajarito Plateau and outcrop locally in White Rock Canyon (Griggs, 1964; Smith et al., 1970; Dethier, 1996). Although poorly exposed, these sediments are geomorphically significant as they probably host many of the failure planes of the massive landslide complexes within White Rock Canyon (Reneau et al., 1995a; Dethier, 1996) (discussed on Day 0 hike, and at Stop 1-3).

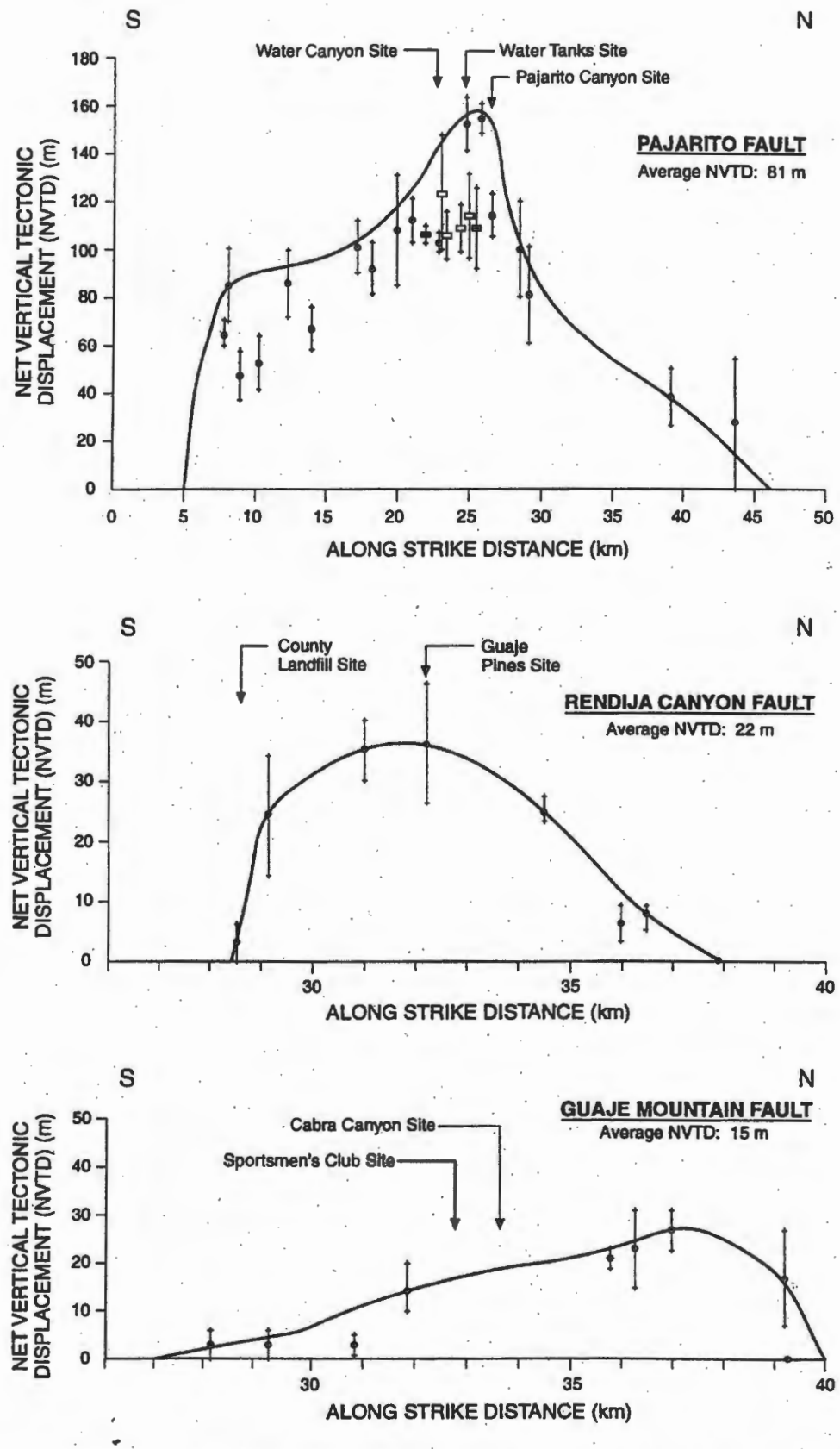

Fig. 5. Displacement curves for the Pajarito fault system showing estimated net vertical tectonic displacement (NVTD) of the top of the Bandelier Tuff. Solid circles show data from profiles constructed from 7.5' quadrangles; solid rectangles show data from profiles measured in the field; open rectangles show data from profiles constructed from 1:1200 scale topographic maps (from Olig et al., 1996).

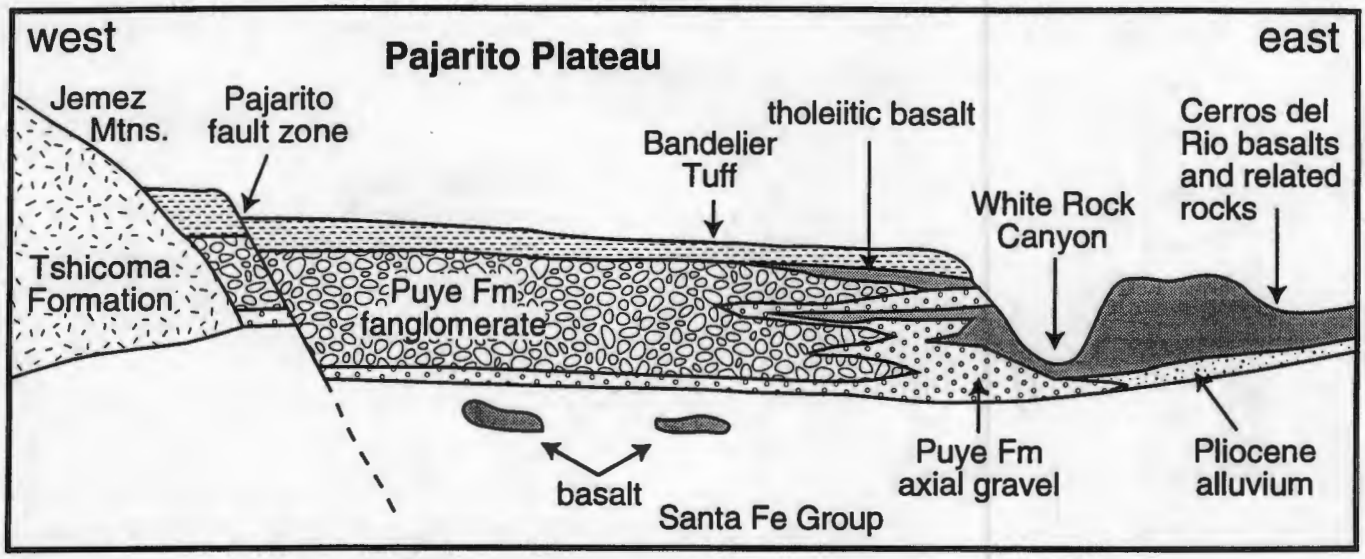

Fig. 6. Schematic geologic cross section showing relationships of the primary geologic units exposed in the vicinity of the Pajarito Plateau. (Modified from Waresback and Turbeville, 1990).

Tschicoma Formation. The Miocene to Pliocene Tschicoma Formation, part of the Polvadera Group, is dominated by dacitic lavas and is the primary bedrock unit in the Sierra de los Valles east of the Plateau (Griggs, 1964; Smith et al., 1970). K-Ar analyses from these lavas indicate ages of about 3-7.5 Ma (Dalrymple et al., 1967; Leudke and Smith, 1978; Gardner et al., 1986; Singer and Kudo, 1986; Aldrich and Dethier, 1990). The rugged, higher elevation Tschicoma terrain provides the upper watersheds for many of the Plateau streams, and Tschicoma clasts often dominate the gravel component of alluvium along these streams as they are more resistant than most of the Bandelier Tuff.

Basaltic rocks of the Cerros del Rio volcanic field. Basaltic rocks of the late Pliocene Cerros del Rio volcanic field outcrop widely on the eastern Plateau, and are well exposed within White Rock Canyon (Griggs, 1964; Smith et al., 1970; Dethier, 1996). In addition to extensive flows that range in composition from hawaiite to andesite, erupted from numerous vents, the Cerros del Rio is marked by deposits from numerous maar volcanoes, the product of phreatomagmatic eruptions generated from the interaction of rising magma with shallow groundwater near the Pliocene Rio Grande (Aubele, 1978, 1979; Dethier, 1996; Heiken et al., 1996). Recent $^{40}Ar/^{39}Ar$ analyses indicate that most of the Cerros del Rio rocks near the Pajarito Plateau were erupted between about 2.3 and 2.8 Ma, particularly between 2.4 and 2.6 Ma (WoldeGabriel et al., 1996). Most streams draining the Plateau in the Los Alamos area have prominent knickpoints where they cross the basalts, and the Cerros del Rio rocks thus provide important local base level controls, isolating the Plateau streams from base level changes along the Rio Grande (discussed at Stops 1-2, 1-5, 3-1). The basaltic rocks also typically form the cap rocks for the massive White Rock Canyon landslides (Day 0 hike; Stop 1-3).

Puye Formation. The Puye Formation is primarily a large Pliocene alluvial fan complex derived from erosion of the Tschicoma highlands in the northeastern Jemez Mountains (Griggs, 1964; Bailey et al., 1969; Smith et al., 1970; Turbeville et al., 1989; Waresback and Turbeville, 1990). As defined by Griggs (1964) and Bailey et al. (1969), the Puye Formation pre-dates the Otowi Member of the Bandelier Tuff, although deposition of Puye-like gravels has continued to the present. The Puye Formation is often referred to as a "rift-filling" unit, although this may be a misnomer as the bulk of the Puye sediments may have been deposited in a basin with a volcanic rather than a tectonic origin,

being formed by blockage of the Rio Grande valley by Cerros del Rio volcanism (Reneau and Dethier, 1996). Streams traversing areas of Puye outcrops are typically steeper than other Plateau streams, associated with an abundant local supply of dacite boulders (discussed at Stop 2-3; the Puye Formation is also seen at Stop 3-1).

Otowi Member, Bandelier Tuff. The Otowi Member of the Bandelier Tuff, named by Griggs (1964) and Bailey et al. (1969), is a massive sequence of ignimbrites erupted from the Jemez Mountains at ca. 1.61 Ma ($^{40}Ar/^{39}Ar$ analyses from Izett and Obradovich, 1994, and Spell et al., 1995), and associated with development of the Toledo caldera (Smith and Bailey, 1966, Heiken et al., 1990). On the Pajarito Plateau, the Otowi Member is entirely non-welded and easily eroded, often forming slopes on lower canyon walls and probably constituting a significant source of sand-size sediment. In the Los Alamos area it ranges from 0->140 m in thickness; these thickness variations result in part from irregular deposition over the prior topography, and in part from erosion of the ignimbrites in the ~400 ky that preceded eruption of the Tshirege Member (Broxton and Reneau, 1996). The basal Plinian deposit of the Otowi Member, the Guaje Pumice Bed (Bailey et al., 1969), is up to 7-10 m thick where exposed on the Plateau (Self et al, 1986). The Otowi Member can be seen at Stops 1-5, 2-3, and 3-4 on this field trip.

Cerro Toledo interval. Deposits occurring stratigraphically between the Otowi and Tshirege Members of the Bandelier Tuff in the Los Alamos area are referred to as the "Cerro Toledo interval" (Broxton and Reneau, 1995; Broxton et al., 1995a; Goff, 1995). In some areas, particularly to the north, the Cerro Toledo interval is dominated by primary and reworked pumice deposits associated with the Cerro Toledo Rhyolite, which originated mainly from Cerro Toledo and related vents in the northern Jemez Mountains (Smith et al., 1970; Heiken et al., 1986). In other areas this interval is dominated by dacite-rich alluvium deposited by streams draining the Sierra de los Valles. The Cerro Toledo-age landscape in the Los Alamos area apparently had relatively low relief, with streams generally incised only about 15-30 m below local drainage divides, and included extensive areas of stream terraces buried by pumice beds (Broxton and Reneau, 1996). Cerro Toledo pumice beds have yielded recent $^{40}Ar/^{39}Ar$ ages of 1.22-1.59 Ma, spanning virtually the entire time span between the Otowi and Tshirege Members (Spell et al., 1995). Some aspects of the Cerro Toledo paleotopography are discussed at Stops 1-1 and 1-5, and also at various places on the road logs.

Tshirege Member, Bandelier Tuff. The Tshirege Member of the Bandelier Tuff, named by Griggs (1964) and Bailey et al. (1969), is a massive sequence of ignimbrites erupted from the Jemez Mountains at ca. 1.22 Ma ($^{40}Ar/^{39}Ar$ age from Izett and Obradovich, 1994), and associated with development of the Valles caldera (e.g., Smith and Bailey, 1966, 1968; Heiken et al., 1990). On the Pajarito Plateau, the Tshirege Member is a compound cooling unit that possesses pronounced lateral and vertical variations in welding and alteration. Differential erosion associated with variations in welding and vapor-phase alteration in vertical sections result in a "benched topography", with alternating cliffs and slopes along many canyon walls. The degree of welding generally increases to the west, towards the caldera, and the presence of densely welded tuff on the western Plateau provides a strong contrast with the eastern Plateau, where even the cliff-forming units are easily crushed with a hammer. In the Los Alamos area the Tshirege Member locally exceeds 260 m in thickness, with significant thickness variations occurring across the Plateau; thicknesses of 30-100 m are more common (Broxton and Reneau, 1996). The basal Plinian deposit of the Tshirege Member, the Tsankawi Pumice Bed (Bailey et al., 1969), is typically ~0.2-1.0 m thick on the Plateau (Self et al, 1986). The gently east-sloping mesas of the Pajarito Plateau are capped by relatively resistant,

variably welded flow units within the tuff, although the upper surface of the Plateau probably rarely or never represents the actual top of the ignimbrite sheet, as is sometimes assumed. This is due mainly to erosion of unknown thicknesses of the uppermost, non-welded tuff, although in a few areas the actual top of the ignimbrite sheet may be preserved beneath early post-Bandelier deposits.

In the Los Alamos area, the Tshirege Member has been subdivided into a series of mappable units by a number of workers who have used varying criteria and varying nomenclature, resulting in some confusion in the local literature (see discussion in Broxton and Reneau, 1995). The mapping units presently employed by LANL's Environmental Restoration Project are shown in Figure 7, based on inferred cooling breaks within the tuff. (The 6 major subdivisions of the Tshirege Member in Figure 7 generally correspond to units A through F of Rogers, 1995).

Tshirege unit 1g (Qbt-1g) is the lowermost non-welded tuff, the only unit with primary volcanic glass remaining in most areas (1g = glassy part of cooling unit 1). Qbt-1v consists of the upper part of cooling unit 1, which has been subject to pervasive vapor-phase alteration associated with early de-gassing of the ignimbrite; common vapor-phase minerals occurring here and in overlying units include alkali feldspar, cristobalite, and tridymite (Broxton et al., 1995a, 1995b). Qbt-2 is a prominent cliff-forming unit, forming the main cap rock for mesas on the eastern Pajarito Plateau (Stop 1-3, 3-4). Qbt-3 caps many mesas farther west, including the Los Alamos townsite, but is less welded than Qbt-2 and, where present to the east, has eroded into low mounds (Stop 1-4). Qbt-4, absent from the eastern Plateau, caps many mesas in the central Plateau (Stop 1-6) and thickens westward. Lastly, Qbt-5 is a relatively thin but densely welded unit that forms a prominent cap rock on parts of the western Plateau (Ponderosa Campground, Stop 2-1). (For more details on some of the chemical, mineralogic, and petrographic variations between these units, see Broxton et al., 1995a, 1995b). Some features of the Tshirege Member are discussed at Stop 1-1 and at various places in the road logs.

Post-Bandelier Landscape Development

Eruption of the Tshirege Member of the Bandelier Tuff at ca. 1.22 Ma effectively buried most of the former topography, reshaping the landscape between the Sierra de los Valles and the Rio Grande. Because the thickness of tuff varied significantly across the Plateau, the upper surface of the ignimbrite sheet possessed a somewhat different orientation than the previous landscape, and as a result the post-Bandelier drainage net is generally oblique to the pre-1.22 Ma streams, with more easterly orientations than prior to 1.22 Ma (Broxton and Reneau, 1996).

Also of significance is the fact that the pre-Tshirege paleocanyon of the Rio Grande was completely buried by the tuff, undoubtedly damming the river and creating a new local base level for streams draining the Plateau (Fig. 8; Reneau and Dethier, 1996b). The outlet to the tuff-dammed lake was apparently located about 2 km east of its former course, forcing the post-1.22 Ma Rio Grande to erode a new canyon through about 200 m of basaltic rocks to reach its pre-Tshirege grade. A persistent knickpoint probably existed along the Rio Grande as it slowly incised through the basalts, in turn impeding incision of streams on the Plateau. Part of the buried paleocanyon can be viewed at a distance from Stop 1-3.

Mesa-Top Alluvium and Canyon Incision. Isolated remnants of dacite-rich gravels deposited by streams draining the Sierra de los Valles occur widely over the upper surface of the central and eastern Plateau, often in shallow paleochannels (e.g., Reneau, 1995a; Reneau et al., 1995b). These

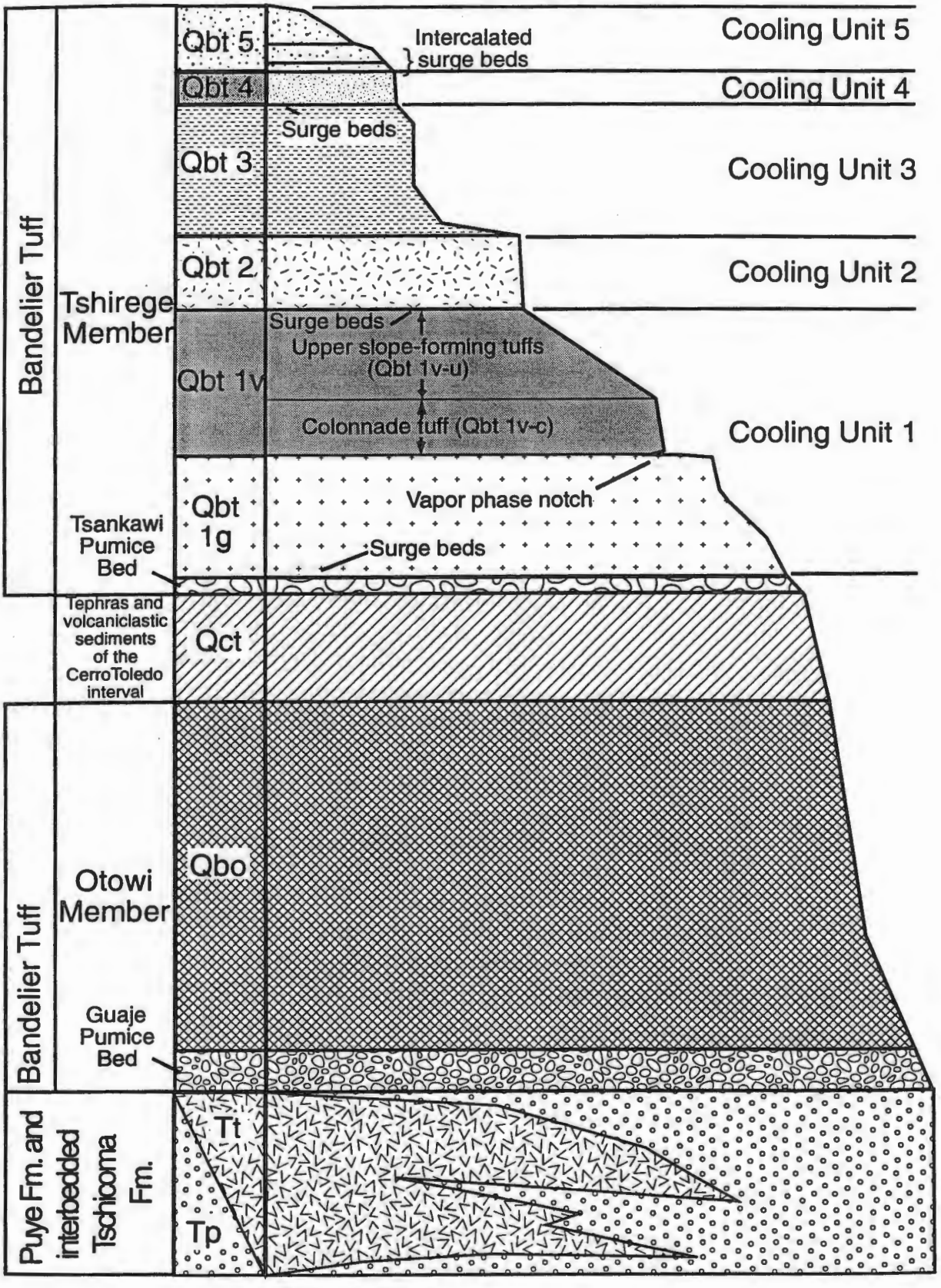

Fig. 7. Stratigraphic nomenclature of the Bandelier Tuff on the Pajarito Plateau. Modified from Broxton and Reneau (1995) to include "Qbt 5", which is only present on the western Plateau and which is probably equivalent to "unit F" of Rogers (1995).

deposits record the locations of dispersed, probable early Pleistocene streams that pre-dated incision of the canyons. To the west, such mesa-top alluvial deposits become more extensive, covering many of the mesas on the western Plateau. The timing of initial incision of the canyons on the Plateau is not yet known and undoubtedly varied greatly, although inferred early Pleistocene pumice beds associated with the Valles Rhyolite (the post-Bandelier volcanic rocks in the Valles caldera; Bailey et al., 1969; Smith et al., 1970) have been recently recognized in many areas and may ultimately allow age control for early post-Bandelier units (Dave Broxton, unpublished data). It is notable that some canyons on the western Plateau have not yet been incised into tuff (e.g., Cañon de Valle), and the "mesa-top alluvium" locally merges with late Quaternary fans near the base of the Pajarito fault escarpment. Initial incision of canyons through the Tshirege ignimbrites has thus occurred throughout the past 1.22 Ma in different areas, indicating that the mesa-top alluvium may record a long (but as of yet unresolved) history of sedimentation, drainage evolution, and time-transgressive canyon incision. An excellent example of one of the mesa-top paleochannels will be visited at Stop 3-4, and related deposits are mentioned in the Day 2 log.

Cliff Retreat. Cliff retreat rates on the Pajarito Plateau are poorly constrained at present, and likely show significant spatial and temporal variability across the Plateau. Cliff retreat along most canyons may be dominated by the dislodgment of individual fracture-bounded blocks, resulting in discrete rockfalls (e.g., Reneau, 1995a, 1995b). From casual observations of recent rockfall events, it is not obvious that they occur under any particular meteorological condition; for example, a rockfall in April 1993 from the south side of Mesita del Buey (north wall of Pajarito Canyon) occurred during a dry period long after the freeze-thaw cycles of winter. In some areas, mass wasting features along mesa edges indicate the potential for much larger failures. For example, partially-detached blocks up to 25 m wide and 100 m long occur on the south edge of DP Mesa, above Los Alamos Canyon (Reneau, 1995a), and a belt of mesa-edge instability ~30-60 m wide and 1.8 km long occurs along the north edge of Pajarito Mesa, above Pajarito Canyon (Reneau, 1995b). Available data suggest that these larger bedrock failures occur along canyons where a threshold combination of canyon depth and canyon-wall gradient has been exceeded, in turn suggesting that rates of mesa-edge retreat could accelerate once such a threshold has been crossed (Reneau, 1995b). In other areas, the widest parts of canyons correspond with areas of broad stream terraces, suggesting that canyon widening may be significantly aided by lateral erosion by streams. Finally, it seems likely that seismic shaking would be very effective at dislodging numerous partially-detached blocks and possibly destabilizing many previously intact areas of cliff, particularly given the proximity to traces of the Pajarito fault system, although there are no data to evaluate the relative importance of such events.

Late Quaternary Alluvial History. Sediments within the canyons of the Pajarito Plateau record significant temporal variations in fluvial processes through the late Quaternary, and also significant spatial variability between canyons (Reneau et al., 1996b). Abundant evidence exists for widespread sediment deposition throughout the Holocene, contrasting with the apparent rarity of latest Pleistocene alluvial deposits. The late Pleistocene stream channels in many canyons are buried many meters beneath the canyon floors, and we believe that this dramatic change in fluvial processes reflects major changes in sediment supply and flood characteristics accompanying the Pleistocene-Holocene climatic transition. A strong contrast also exists between net Holocene aggradation in many canyons and net Holocene incision in others, the latter accompanied by development of multiple Holocene terraces. Stratigraphic and geochronologic evidence pertaining to the late Quaternary alluvial history are examined at many stops on this field trip (Stops 1-2, 1-4, 1-5, 2-2, 2-3, 3-1, 3-3).

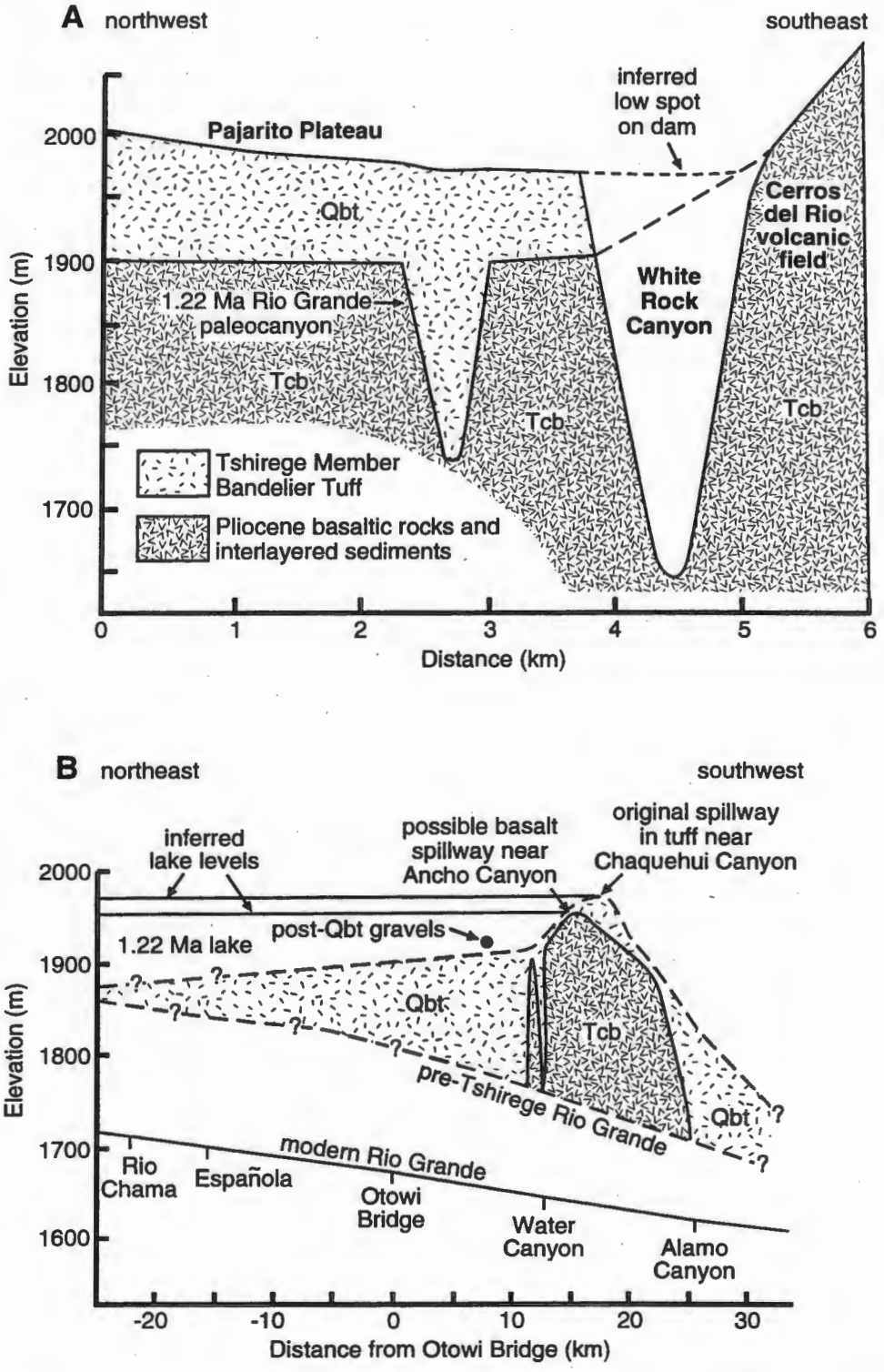

Fig. 8. A). Schematic cross section through the area of the ca. 1.22 Ma Bandelier Tuff dam near Chaquehui Canyon. The low point on dam was near the eastern margin of the Tshirege ignimbrite sheet about 2 km east of the buried early Pleistocene Rio Grande paleocanyon, superimposed on Cerros del Rio basaltic rocks. B) Profile of the Rio Grande at White Rock Canyon and adjacent parts of the Española basin at ca. 1.22 Ma, showing: the pre-Tshirege Member river level; the approximate topography immediately after eruption of the tuff and geologic units beneath the post-tuff channel; the location of spillways and approximate lake elevations; and the location of post-tuff Rio Grande gravels at White Rock (Stop 1-3) (from Reneau and Dethier, 1996b).

Post-1943 A.D. Alluvial History. As with the earlier record of late Quaternary fluvial change, significant spatial and temporal variability in streams on the Pajarito Plateau are recorded since major development began at LANL in 1943 (subsequently referred to as "historic" alluvium). These changes have been locally documented using examinations of sequential airphotos that extend back to 1935, using "exotic" materials contained within young sediment deposits as dating tools, using biological evidence such as trees partially buried by alluvium, and using radionuclide contaminants as tracers (e.g., Becker, 1991; Drake and Inoue, 1993; Drakos and Inoue, 1994; Aldrich and Harrington, 1995; Graf, 1995, 1996; Reneau, 1995a; and Drakos et al., 1996). In some drainages, 2 m or more of sediment was first deposited and then incised since WW II, producing historic fill terraces, whereas in others historic channels remain buried beneath aggrading valley bottoms. The recent behavior of Plateau streams is receiving increasing attention because of their significance for evaluating contaminant transport, and examples of channels that have experienced major historic channel changes will be visited on Day 3 of this field trip.

Soils

Soils on the Pajarito Plateau have developed from a diverse set of parent materials that include alluvial, colluvial, and eolian sediments, and fallout pumice, in addition to locally weathered bedrock. These soils have also been strongly affected by local variations in geomorphic history, with long-term (i.e., >100 ka) "stable" landscape positions being relatively rare. Many soils have either been partially stripped or buried by younger deposits, forming complex, superimposed soil profiles. General variations in soil characteristics across the Plateau were originally identified and mapped in a soil survey by Nyhan et al. (1978). Recently, many additional studies have examined pedologic, geomorphic, geochronologic, stratigraphic, geochemical, mineralogic, and isotopic aspects of soils and related fracture fills in greater detail (e.g., Davenport, 1993; Drake and Inoue, 1993; Drakos and Inoue, 1994; Kolbe et al., 1994, 1995; Davenport et al., 1995; Reneau et al., 1995b, 1996a, 1996b; Vaniman and Chipera, 1995; Wong et al., 1995; Drakos et al., 1996; Eberly et al., 1996; Kelson et al., 1996; Longmire et al., 1996; McDonald et al., 1996a, 1996b; McFadden et al., 1996; Newman, 1996; Watt, 1996). Many stops on this field trip will explore some of these aspects of soils, particularly as they pertain to evaluating the geomorphic history of the Pajarito Plateau (e.g., Stops 1-2, 1-4, 1-5, 1-6, 2-2, 2-3).

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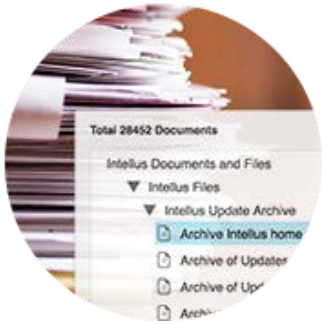

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Updates

October 22, 2019:

The Ecorisk Database R4.1 has been published to Intellus documents and is now available. To download the database and user guides, please go to the Documents section in the Intellus header bar, navigate to LANL Files >> Ecorisk Database, and download both .zip files in that directory.

August 6, 2019:

Intellus will be offline for maintenance from Friday, August 9 at 5 PM PT through Sunday, August 11 at 11:59 PM PT. Please email **intellus@lanl.gov** with any questions regarding this announcement. Thanks.

January 23, 2019:

Intellus will be offline for maintenance from 4 am MT through 7 pm MT on Saturday, February 2, 2019. Please email **intellus@lanl.gov** with any questions regarding this announcement.

October 3, 2018:

Daily data posting to Intellus will be delayed starting at 5 pm MDT on October 5, 2018, and will resume at 7 am MDT on

October 8, 2018. In the interim time, Intellus will still be available, but only data which has been posted prior to Friday will be present. Additionally, during this time certain Popular Reports may not be functional. Please email **intellus@lanl.gov** with any questions regarding this announcement.

February 21, 2018:

Public hands-on computer-based training for Intellus will be offered on Wednesday, February 21, 2018, 12:00 p.m. to 3:00 p.m. Santa Fe Community College. 6401 Richards Ave. East Wing of Campus. Computer Lab Room 582. Santa Fe, NM 87508. Please email at **intellus@lanl.gov** to reserve your spot. Learn how to search, download, graph, and map LANL environmental data.

Neighborhood Environmental Watch Network (NEWNET)
data monitoring wind speed and direction, ambient air temperature, barometric pressure, relative humidity and ionizing gamma radiation is now available on ***Documents> Intellus Document and Files > LANL Files > NEWNET***

From:	Becker, Kathryn, NMENV
To:	Fullam, Jennifer, NMENV
Cc:	Lemon, Shelly, NMENV; Barrios, Kristopher, NMENV; Verheul, John, NMENV; Maxfield, Annie, NMENV
Subject:	RE: Tribal Outreach for New Mexico"s upcoming Triennial Review of State Surface Water Quality Standards
Date:	Thursday, January 30, 2020 2:47:32 PM
Attachments:	image001.png

Sent!

From: Fullam, Jennifer, NMENV <Jennifer.Fullam@state.nm.us>
Sent: Thursday, January 30, 2020 2:24 PM
To: Becker, Kathryn, NMENV <kathryn.becker@state.nm.us>
Cc: Lemon, Shelly, NMENV <Shelly.Lemon@state.nm.us>; Barrios, Kristopher, NMENV <Kristopher.Barrios@state.nm.us>; Verheul, John, NMENV <John.Verheul@state.nm.us>; Maxfield, Annie, NMENV <Annie.Maxfield@state.nm.us>
Subject: Tribal Outreach for New Mexico's upcoming Triennial Review of State Surface Water Quality Standards

Kathryn: for your dissemination to Tribal Environmental Directors. Thanks.

Greetings Tribal Environmental Directors:

In preparation for the upcoming Triennial Review of New Mexico's Standards for Interstate and Intrastate Surface Waters, (https://www.env.nm.gov/surface-water-quality/wqs/) the Surface Water Quality Bureau ("SWQB") of the New Mexico Environment Department ("NMED") is seeking tribal input prior to public notice, tentatively scheduled for Summer 2020, and the hearing before the Water Quality Control Commission. If you have interest in engaging with the New Mexico Environment Department in this early phase of the Triennial Review or have questions regarding the process, please contact Jennifer Fullam, SWQB's Standards, Planning and Reporting Team, at jennifer.fullam@state.nm.us. When responding by email please enter "Triennial Review" in the subject line and include your name, title (as applicable), Tribe Representing, email, phone number, mailing address, and areas of interest or concern with the current WQS in the body of the email and copy (cc): Kathryn Becker, NMED's Tribal Liaison, at kathryn.becker@state.nm.us.

There will be a formal public notice and comment period once a draft of the proposed changes is available. Subsequent updates during this process will be provided though the SWQB website as well as through the SWQB's email subscription (subscribe here).

Thank you.

Jennifer Fullam
Standards, Planning & Reporting Team Leader

Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr.
Santa Fe, NM 87505
Phone: 505.827.2637
jennifer.fullam@state.nm.us

"Innovation, Science, Collaboration, Compliance"

From:	Becker, Kathryn, NMENV
To:	Fullam, Jennifer, NMENV
Subject:	thanks for the heads up- I sent it out
Date:	Monday, November 2, 2020 11:29:27 AM
Attachments:	TR 2020 Notice Public Comment 20201030 ENGLISH.pdf

From: Becker, Kathryn, NMENV
Sent: Monday, November 2, 2020 10:39 AM
To: Adam Duran, Pueblo of Pojoaque <aduran@pojoaque.org>; Alan Hatch, Pueblo of Santa Ana <alan.hatch@santaana-nsn.gov>; Cordell TecCube Jicarilla Apache Nation <cltecube@yahoo.com>; Cynthia Naha, Santo Domingo Pueblo <cnaha@kewa-nsn.us>; Deborah Anyaibe, Zia Pueblo <danyaibe@ziapueblo.org>; Dino Chavarria, Santa Clara Pueblo <dinoc@santaclarapueblo.org>; DMartinez@poamail.org; Evaristo A. Cruz Ysleta del Sur Pueblo <Ecruz@ydsp-nsn.gov>; Glenn Tortalita <GTortalita@ziapueblo.org>; Greg Jojola <gjojola@lagunapueblo-nsn.gov>; Greg Kaufman <gkaufman@puebloftesuque.org>; Jaimie Park <Park,Jaimie<jaimie.park@Isletapueblo.com>>; Jennifer Heminokeky <jennifer.heminokeky@fortsillapache-nsn.gov>; Jesse Young, Interim Director <JYoung@ziapueblo.org>; Jessica Tracy <jtracy@sandiapueblo.nsn.us>; Karmen Badoni <karmen@enipc.org>; Keith Manwell <kcmanwell@yahoo.com>; Larry Phillips, Jr., Ohkay Owingeh <larry.phillips@ohkay.org>; Margaret Chavez <mchavez@enipc.org>; Miguel Vigil <MVigil@taospueblo.com>; Oliver B. Whaley <obwhaley@navajo-nsn.gov>; Paul Clarke, Jemez Pueblo <paul.clarke@jemezpueblo.org>; Pauline Electric Warrior <electricwarriorpk@yahoo.com>; Pinu'u Stout, Pueblo of San Felipe <pstout@sfpueblo.com>; Pueblo de Cochiti Jacob Pecos (Jacob.pecos@cochiti.org) <Jacob.pecos@cochiti.org>; Ramona Montoya <ramona.montoya@isletapueblo.com>; Raymond Martinez, Pueblo de San Ildefonso <rmartinez@sanipueblo.org>; Shannon Tenorio <administrator@picurispueblo.org>; Steve Rydeen, Nambe Pueblo <srydeen@nambepueblo.org>; Steven Etter <setter@lagunapueblo-nsn.gov>; Tammy Belone, Pueblo of Jemez <Tammy.belone@jemezpueblo.org>; Tammy Parker, Pueblo of Zuni <tammy.parker@ashiwi.org>; Tanya Axen <taxen@sandiapueblo.nsn.us>; Taos Pueblo Cherylin Attcity (CAtcitty@taospueblo.com) <CAtcitty@taospueblo.com>; Tesuque Pueblo Ryan Swazo-Hinds (rswazohinds@puebloftesuque.org) <rswazohinds@puebloftesuque.org>; Thora Padilla Mescalero Apache Tribe <Thora@mescalerodrmp.org>; Wayne Yazzie (lt.governor@picurispueblo.org) <lt.governor@picurispueblo.org>
Cc: Hayden, Maddy, NMENV <Maddy.Hayden@state.nm.us>
Subject: FW: Public Comment Period for Triennial Review and proposed amendments to Water Quality Standards under 20.6.4 NMAC

Good morning TEDs,

This email is to notify you that the public comment period and notification of public informational meetings regarding the State's proposed amendments for Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) will be opening today, November 2, 2020. Please see the attached notice on how to submit comments and when to attend WebEx info meetings in mid-November.

The notice has been posted on the Surface Water Quality Bureau's website

(https://www.env.nm.gov/surface-water-quality/2020-triennial-review/).
Best,

Kathryn S. Becker
Assistant General Counsel
Tribal Liaison
New Mexico Environment Department
Office of General Counsel
P.O. Box 5469
Santa Fe, NM 87502-5469
Phone: 505-827-2054
kathryn.becker@state.nm.us
www.env.nm.gov

From:	Becker, Kathryn, NMENV
To:	Fullam, Jennifer, NMENV; Peura, Alan, NMENV; Hayden, Maddy, NMENV
Subject:	hi- sent out time extension-thanks!
Date:	Wednesday, November 25, 2020 12:54:04 PM
Attachments:	image003.png

From: Becker, Kathryn, NMENV
Sent: Wednesday, November 25, 2020 12:53 PM
To: Adam Duran, Pueblo of Pojoaque <aduran@pojoaque.org>; Alan Hatch, Pueblo of Santa Ana <alan.hatch@santaana-nsn.gov>; Carmen Martinez <cmartinez@taospueblo.com>; Cordell TecCube Jicarilla Apache Nation <cltecube@yahoo.com>; Cynthia Naha, Santo Domingo Pueblo <cnaha@kewa-nsn.us>; Deborah Anyaibe, Zia Pueblo <danyaibe@ziapueblo.org>; Dino Chavarria, Santa Clara Pueblo <dinoc@santaclarapueblo.org>; DMartinez@poamail.org; Evaristo A. Cruz Ysleta del Sur Pueblo <Ecruz@ydsp-nsn.gov>; Glenn Tortalita <GTortalita@ziapueblo.org>; Greg Jojola <gjojola@lagunapueblo-nsn.gov>; Greg Kaufman <gkaufman@puebloftesuque.org>; Jennifer Heminokeky <jennifer.heminokeky@fortsillapache-nsn.gov>; Jesse Young, Interim Director <JYoung@ziapueblo.org>; Jessica Tracy <jtracy@sandiapueblo.nsn.us>; Karmen Badoni <karmen@enipc.org>; Keith Manwell <kcmanwell@yahoo.com>; Larry Phillips, Jr., Ohkay Owingeh <larry.phillips@ohkay.org>; Margaret Chavez <mchavez@enipc.org>; Miguel Vigil <MVigil@taospueblo.com>; Oliver B. Whaley <obwhaley@navajo-nsn.gov>; Paul Clarke, Jemez Pueblo <paul.clarke@jemezpueblo.org>; Pauline Electric Warrior <electricwarriorpk@yahoo.com>; Pinu'u Stout, Pueblo of San Felipe <pstout@sfpueblo.com>; Pueblo de Cochiti Jacob Pecos <Jacob.pecos@cochiti.org>; Ramona Montoya <ramona.montoya@isletapueblo.com>; Raymond Martinez, Pueblo de San Ildefonso <rmartinez@sanipueblo.org>; Atencio, Jeff <administrator@picurispueblo.org>; Steve Rydeen, Nambe Pueblo <srydeen@nambepueblo.org>; Steven Etter <setter@lagunapueblo-nsn.gov>; Tammy Belone, Pueblo of Jemez <Tammy.belone@jemezpueblo.org>; Tammy Parker, Pueblo of Zuni <tammy.parker@ashiwi.org>; Tanya Axen <taxen@sandiapueblo.nsn.us>; Tesuque Pueblo Ryan Swazo-Hinds <rswazohinds@puebloftesuque.org>; Thora Padilla Mescalero Apache Tribe <Thora@mescalerodrmp.org>; Wayne Yazzie <lt.governor@picurispueblo.org>
Subject: FYI: Extension of Public Comment Period for Triennial Review

Good afternoon,

This email is to notify you that the public comment period and notification of public informational meetings regarding the State's proposed amendments for Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) **has been extended through January 6, 2021**.

The notice has been posted on the Surface Water Quality Bureau's website (https://www.env.nm.gov/surface-water-quality/2020-triennial-review/).

Please pass along as you find appropriate.

Thank you.

Jennifer Fullam
Standards, Planning & Reporting Team Leader
Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr.
Santa Fe, NM 87505
*Phone: 505.946.8954
jennifer.fullam@state.nm.us

PLEASE NOTE NEW PHONE NUMBER

"Innovation, Science, Collaboration, Compliance"

From:	Becker, Kathryn, NMENV
To:	Adam Duran; Alan Hatch; Cameron Martinez; Cordell TeCube; Cynthia Naha; Dino Chavarria; DMartinez; Erin Martinez; Evaristo A. Cruz; Franklin Martinez; Glenn Tortalita; Greg Kaufman; Gregory Jojola; Jacob Pecos; Jennifer Heminokeky; Jesse Young; Karmen Badoni; Keith Manwell; Larry Phillips, Jr.; Manuel Vigil; Margaret Chavez; Naomi Archuleta; Paul Clark; Pauline Electric Warrior; Pinu"u Sout; Pueblo of Picuris Env. Admin; Pueblo of Picuris Environment; Ramona Montoya; Raymond Martinez; Ruben Lucero; Ryan Swazo-Hinds; Atencio, Jeff; Sophie Stauffer; Steve Rydeen; Steven Etter; Tammy Belone; Tammy Parker; Thora Padilla; Valinda Shirley; Victoria Atencio; Yazza, Wayne
Cc:	Fullam, Jennifer, NMENV
Subject:	Mark your calendars! Triennial Review hearing set for July 13th!
Date:	Monday, February 1, 2021 3:04:10 PM
Attachments:	2020 TR Hearing Notice 20210129 Stakeholders.pdf

Good afternoon TEDs!

Attached is the public hearing notice for the State's Triennial Review of Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC). A hearing date has been set by the Water Quality Control Commission for July 13, 2021 (and continuing thereafter). Information pertaining to the Triennial Review and opportunity to participate can be found either on the Water Quality Control Commission's website athttps://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/ or the Surface Water Quality Bureau's website https://www.env.nm.gov/surface-water-quality/2020-triennial-review/.

From: New Mexico Environment Department
To: Fullam, Jennifer, NMENV
Subject: [EXT] Stakeholder Outreach for the Preliminary Phases of New Mexico's Standards for Interstate and Intrastate Surface Waters Triennial Review
Date: Monday, February 3, 2020 12:48:25 PM

NMED Banner

SWQB logo

Surface Water Quality Bureau

Our mission is to preserve, protect, and improve New Mexico's surface water quality for present and future generations.

Oficina de Calidad de Aguas Superficiales

Nuestra misión es preservar, proteger y mejorar la calidad de las aguas superficiales de Nuevo México para las generaciones presentes y futuras.

New Mexico's Water Quality Standards (WQS) are provisions of State or Federal law which consist of a designated use (or uses) and water quality criteria based upon such uses. These WQS exist to protect the public health or welfare, enhance the quality of water, and otherwise serve the purposes of the Federal Clean Water Act and New Mexico Water Quality Act. The State of New Mexico's WQS

are codified under 20.6.4 New Mexico Administrative Code (NMAC) as *Standards for Interstate and Intrastate Surface Waters*. These WQS are approved by both the New Mexico Water Quality Control Commission (WQCC) in accordance with the State's Water Quality Act NMSA 1978, §§ 74-6-1 to -17 and the United States Environmental Protection Agency (U.S. EPA) in accordance with 40 C.F.R. 131.21. 40 C.F.R. 131.20 and 20.6.4.10 NMAC require these WQS be reviewed and revised, as appropriate, at least once every three years. A public hearing (the "Triennial Review") is required by law to be held for this purpose.

The New Mexico Environment Department has begun the preliminary stages of review of the State's WQS and is seeking identification of stakeholders who may be directly impacted by, have a legal obligation to, or have some other particularized interest in changes to these WQS.

If you believe you, or the entity you represent, are an affected stakeholder and wish to participate in the Triennial Review process prior to public noticing of proposed changes, please contact Jennifer Fullam at 505.827.2637 or by email at jennifer.fullam@state.nm.us by February 28, 2020 to be placed on a stakeholder list. When responding by email please enter "Triennial Review Stakeholder" in the subject line and include your name, title (as applicable), affiliation (as applicable), email, phone number, mailing address, and areas of interest or concern with the current WQS in the body of the email. This list will be used to contact those individuals or entities prior to any public noticing of proposed changes.

Information regarding the State's WQS can be found at the Surface Water Quality Bureau's (SWQB) website at https://www.env.nm.gov/surface-water-quality/wqs/. Once a draft of the proposed changes to the State's WQS are available, a formal public notice and comment period will be afforded to the public. Following the public comment period, the Department will petition the WQCC for a public hearing. The hearing will be noticed and made open for public comment in accordance with the WQCC Rulemaking Procedures under 20.1.6 NMAC.

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, you may contact:

Kristine Yurdin, Non-Discrimination Coordinator
New Mexico Environment Department
1190 St. Francis Dr., Suite N4050
P.O. Box 5469
Santa Fe, NM 87502
(505) 827-2855
nd.coordinator@state.nm.us

If you believe that you have been discriminated against with respect to a NMED program or activity, you may contact the Non-Discrimination Coordinator identified above.

Los Estándares de Calidad del Agua de Nuevo México (WQS, por sus siglas en inglés) son disposiciones de la ley estatal o federal que consisten en un uso (o usos) designado(s) y criterios de calidad del agua basados en dichos usos. Estos WQS existen para proteger la salud o el bienestar del público, mejorar la calidad del agua y de otra manera servir a los propósitos de la Ley Federal de

Agua Limpia y la Ley de Calidad del Agua de Nuevo México. Los WQS del estado de Nuevo México están codificados bajo el 20.6.4 Código Administrativo de Nuevo México (NMAC, por sus siglas en inglés) *como Estándares para las Aguas Superficiales Estatales e Interestatales*. Estos WQS están aprobados tanto por la Comisión de Control de Calidad del Agua de Nuevo México (WQCC, por sus siglas en inglés) de acuerdo con la Ley de Calidad del Agua Estatal NMSA 1978, §§ 74-6-1 a -17 y la Agencia de Protección Ambiental de los Estados Unidos (U.S. EPA, por sus siglas en inglés) de acuerdo con 40 C.F.R. 131.21. 40 C.F.R. 131.20 y 20.6.4.10 NMAC requieren que estos WQS sean revisados y modificados, según corresponda, al menos una vez cada tres años. La ley requiere que se lleve a cabo una audiencia pública (la "Revisión Trienal") para este propósito.

El Departamento del Medio Ambiente de Nuevo México ha comenzado las etapas preliminares de la revisión de los WQS del estado y está buscando identificar a las partes interesadas que puedan ser directamente afectadas, con las tienen una obligación legal o tienen algún otro interés particular en los cambios a estos WQS.

Si cree que usted o la entidad que representa es una parte interesada afectada y desea participar en el proceso de Revisión Trienal antes del aviso público de los cambios propuestos, comuníquese con Jennifer Fullam llamando al 505.827.2637 o por correo electrónico a jennifer.fullam@state.nm.us, a más tardar el 28 de febrero de 2020, para ser incluido en la lista de partes interesadas. Si responde por correo electrónico, por favor escriba "parte interesada en la revisión trienal" en la línea de asunto e incluya su nombre, título (según corresponda), afiliación (según corresponda), correo electrónico, número de teléfono, dirección postal, y áreas de interés o preocupación con los WQS actuales en el cuerpo del correo electrónico. Esta lista se usará para contactar a esos individuos o entidades antes de cualquier aviso público de los cambios propuestos.

Puede encontrar información sobre los WQS del estado en el sitio web de la Oficina de Calidad de Aguas Superficiales (SWQB, por sus siglas en inglés) en https://www.env.nm.gov/surface-water-quality/wqs/. Una vez que esté disponible el borrador de los cambios propuestos a los WQS del estado, se le dará al público un aviso público formal y un período de comentarios. Después del período de comentarios públicos, el Departamento solicitará a la WQCC una audiencia pública. Se publicará un aviso sobre la audiencia y se abrirá un periodo de comentarios públicos de acuerdo con los Procedimientos de Reglamentación de la WQCC bajo 20.1.6 NMAC.

NMED no discrimina por motivos de raza, color, origen nacional, discapacidad, edad o sexo en la administración de sus programas o actividades, según lo exigen las leyes y regulaciones aplicables. NMED es responsable de la coordinación de los esfuerzos de cumplimiento y la recepción de consultas sobre los requisitos de no discriminación implementados por 40 C.F.R. Partes 5 y 7, incluido el Título VI de la Ley de Derechos Civiles de 1964, según enmendada; Sección 504 de la Ley de Rehabilitación de 1973; la Ley de Discriminación por Edad de 1975, el Título IX de las Enmiendas de Educación de 1972 y la Sección 13 de las Enmiendas de la Ley de Control de la Contaminación del Agua de 1972. Si tiene alguna pregunta sobre este aviso o alguno de los programas, políticas o procedimientos de no discriminación de NMED o si cree que ha sido discriminado con respecto a un programa o actividad de NMED, puede comunicarse con:
Kristine Yurdin, coordinadora de no discriminación,
NMED
1190 St. Francis Dr.
Suite N4050, P.O. Box 5469
Santa Fe, NM 87502
teléfono (505) 827-2855
correo electrónico nd.coordinator@state.nm.us

También puede visitar nuestro sitio web en https://www.env.nm.gov/non-employee-discrimination-complaintpage/ para saber cómo y dónde presentar una queja de discriminación.

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New Mexico Environment Department

Stakeholder Discussions for the 2020 Triennial Review of Water Quality Standards

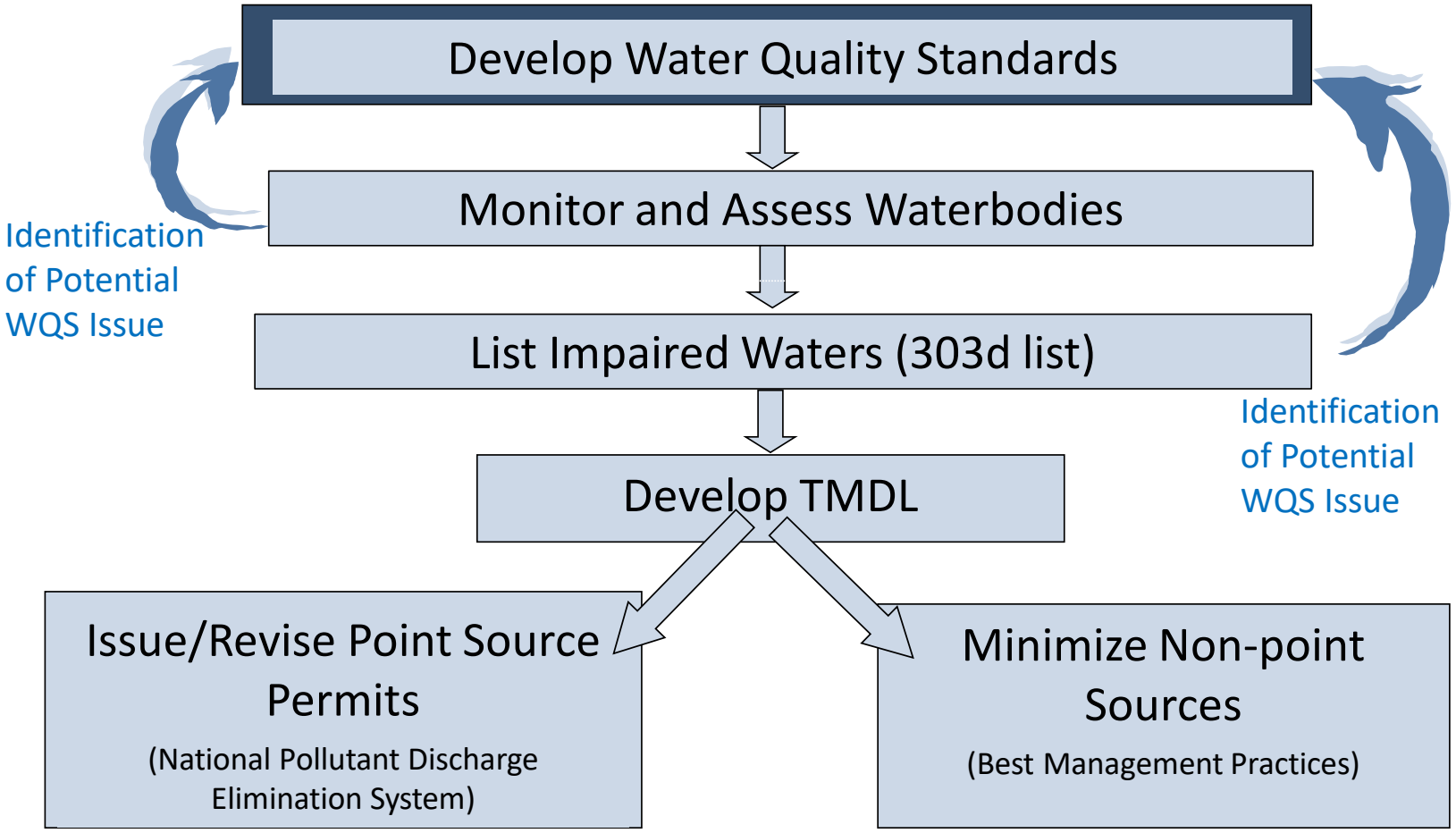
Jennifer Fullam,
Standards, Planning and Reporting Team Leader
Surface Water Quality Bureau
July 2020

NMED Exhibit 82

SWQB Invites Stakeholder Input for the Triennial Review of Water Quality Standards

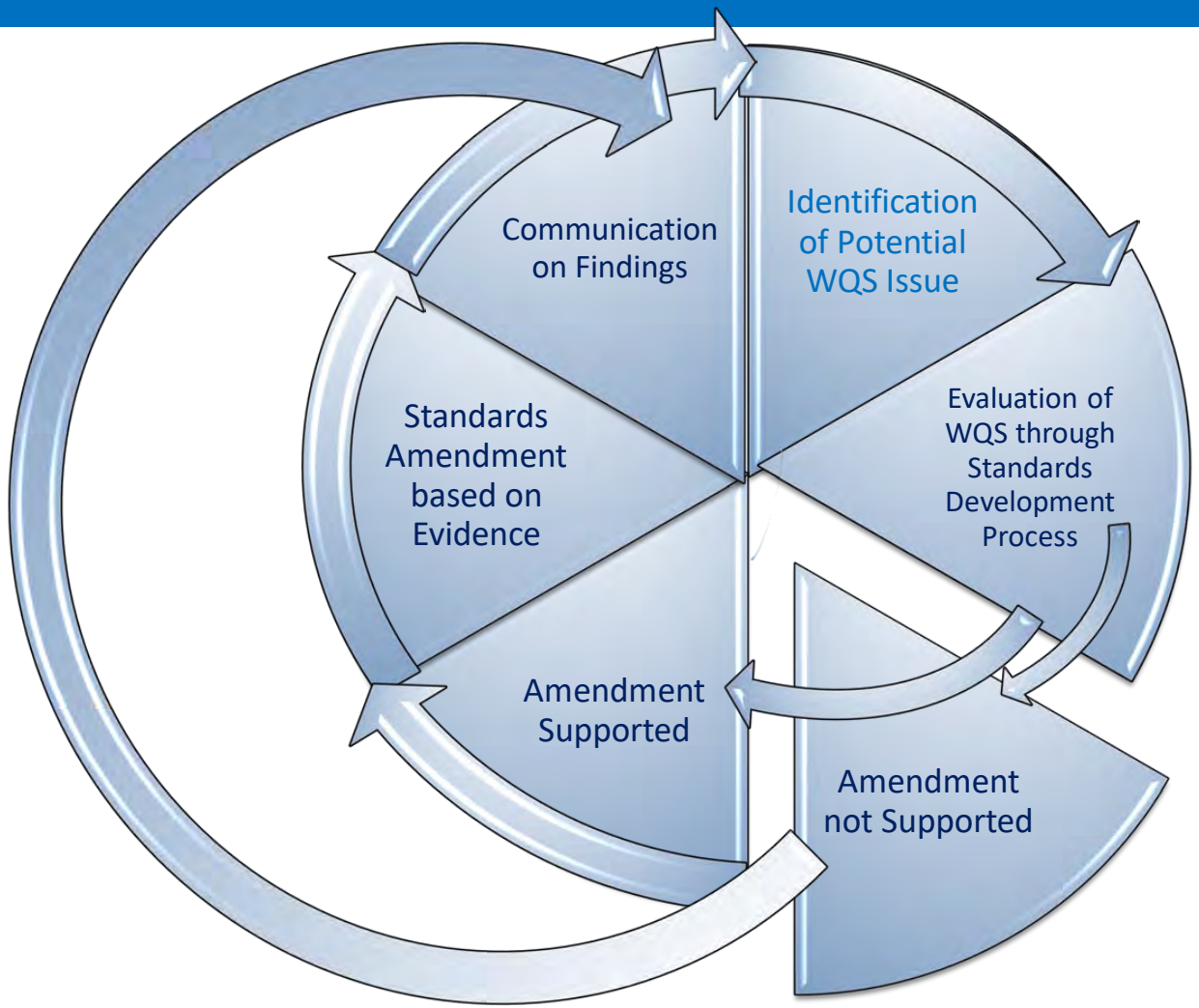
The Bureau would like to thank you for expressing interest in the Triennial Review of *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC).


I. Regulatory Framework
3



NMED Exhibit 82

WQS Amendments



Stakeholder's Participation

- Central location of reports, studies, plans and other documents
- Notify stakeholders in a timely fashion prior to consideration of major decisions

Federal Water Pollution Control Act (Clean Water Act or "CWA")

Per Section 303 of the CWA, each agency is required to adopt Water Quality Standards	Per Section 101(a) of CWA, the objective of the Act is to restore and maintain the chemical, physical and biological integrity of the Nations waters

40 Code of Federal Regulations ("CFR")

Per 40 CFR 131.20, from time to time, but at least once every 3 years, **hold public hearings for the purpose of reviewing applicable water quality standards** adopted pursuant to §§ 131.10 through 131.15 and Federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also **re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2)** of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly.

The State of New Mexico's Water Quality Act ("WQA") NMSA 1978, §§ 74-6-1 to -17

Is the mechanism via which the Legislature has provided authority to adopt Water Quality Standards in accordance with the CWA

Water Quality Control Commission ("WQCC")

The WQCC, having no administrative staff of its own, has delegated the responsibilities for water quality management and CWA activities involving surface waters to the New Mexico Environment Department ("NMED")

20.6.4 New Mexico Administrative Code ("NMAC")

The WQCC has codified its water quality standards for interstate and intrastate surface waters

2020 Triennial Review of Water Quality Standards

- Requires the State hold a public hearing for the purpose of reviewing applicable water quality standards at least once every three years
- As appropriate, modify and adopt standards through the rulemaking process which requires a hearing
  - re-examine any waterbody segment with water quality standards
  - if any new information has become available

Review Process

- **Tier I**- Required to be reviewed for Triennial
- **Tier II**-Can only be updated during a Triennial and implications for implementing WQS if change not made at this time
- **Tier III**-Can only be updated during a Triennial but no direct implications for implementing WQS if change not made at this time
- **Tier IV**-Can be made outside the Triennial

II. Amendments under consideration

- Updating definitions (20.6.4.7 NMAC)
- Clarification of language under Review of Standards (20.6.4.10 NMAC)
- Clarification of language under Use Attainability Analysis (20.6.4.15 NMAC)
- Several designated use amendments
- Updates to the aquatic life and human health criteria (20.6.4.900 NMAC)
- Updates to ammonia criteria (20.6.4.900 NMAC)

Designated Uses Amendments Being Considered

- Pursuant to the Stipulated Agreement between NMED, Los Alamos National Laboratory, and Amigos Bravos
- Reviewing aquatic life uses

General Updates

- ensure consistency of language across the standards
- correct grammatical errors
- update references.

III. Process and Tentative Timelines

Standards Amendments-What to Propose

Criteria Amendments can be made if Section 304(a) guidance is updated, the State determines another criteria is protective of a use

Designated Uses based on Water Quality

Antidegradation Policy amendments can be made, as needed to meet the federal requirements by submitting demonstration of amendment under the processes for rulemaking

Meets Criteria

Existing Use **is** more Stringent than Designated Use

Develop work plan (or equivalent) to propose **amendment** to make designated use at least as stringent as the existing use

Existing Use is **equal to** designated use

Evaluate potential for petitioning for **ONRW** status

Outstanding National Resource Waters Petitions can also be considered if a particular waterbody has exceptional recreational or ecological significance or is a water in a specially designated area (see 20.6.4.9 NMAC)

Does Not Meet Criteria

Use is **not** being supported

Non-support due to **temporary** conditions

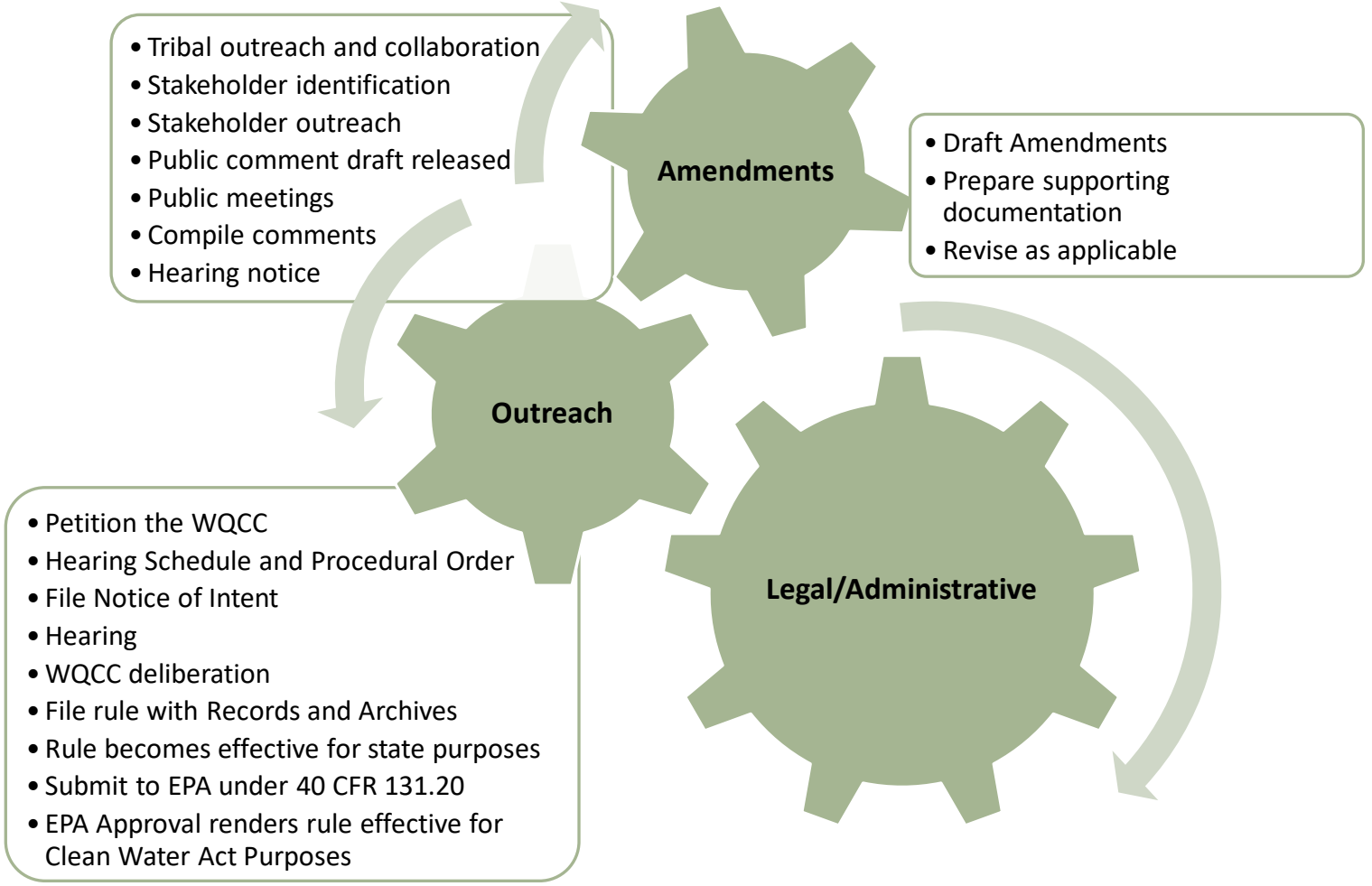
Develop work plan to evaluate if **temporary standard** is supported

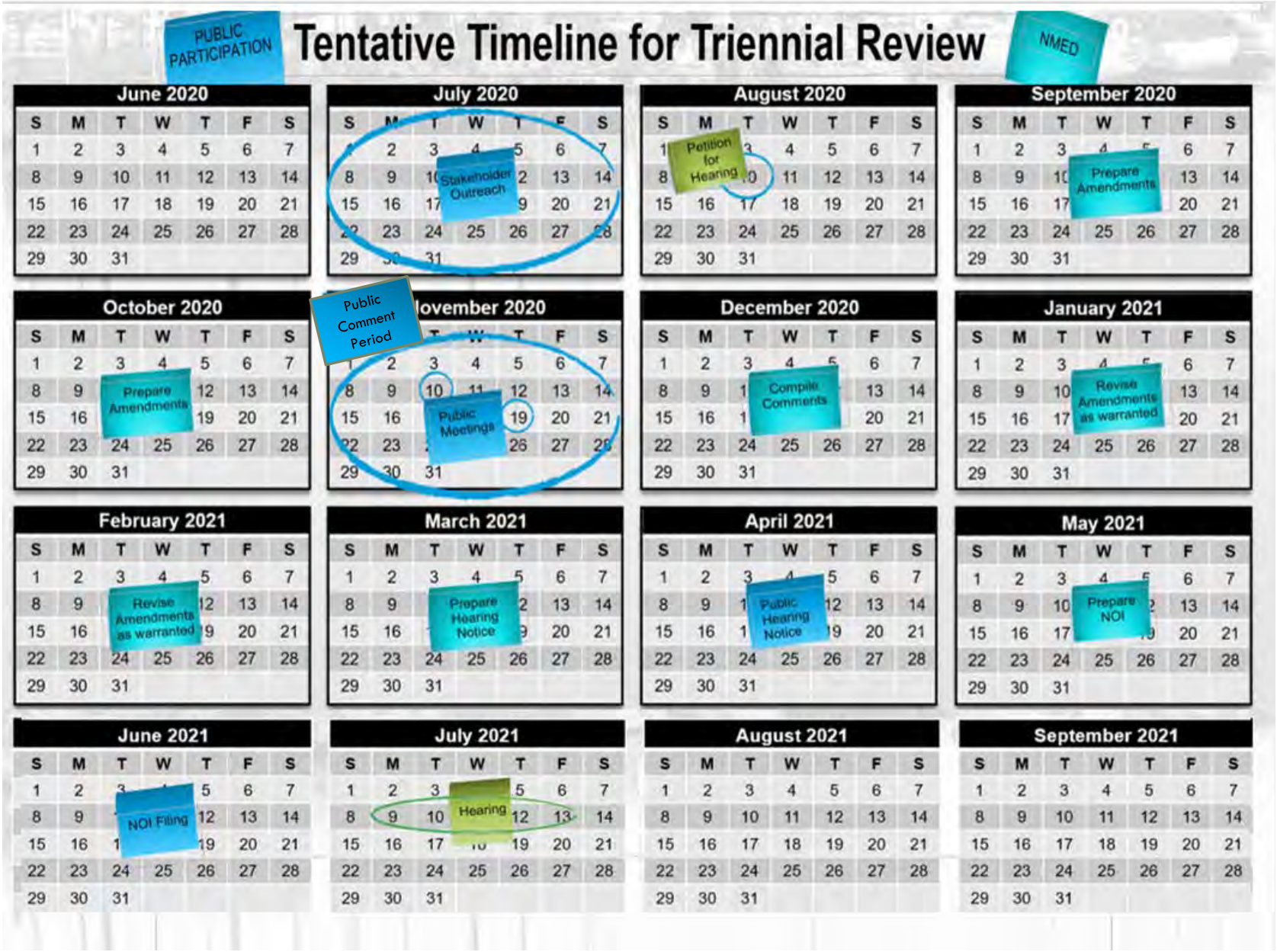
Non-support due to **permanent** conditions

Develop work plan to evaluate if **UAA** is supported

Use **is** supported

Develop work plan (or equivalent) to evaluate if **Site-Specific Criteria** is Supported


• Tribal outreach and collaboration
• Stakeholder identification
• Stakeholder outreach
• Public comment draft released
• Public meetings
• Compile comments
• Hearing notice
Amendments
• Draft Amendments
• Prepare supporting documentation
• Revise as applicable
Outreach
Legal/Administrative
• Petition the WQCC
• Hearing Schedule and Procedural Order
• File Notice of Intent
• Hearing
• WQCC deliberation
• File rule with Records and Archives
• Rule becomes effective for state purposes
• Submit to EPA under 40 CFR 131.20
• EPA Approval renders rule effective for Clean Water Act Purposes


PUBLIC PARTICIPATION
Tentative Timeline for Triennial Review
NMED
June 2020
July 2020
Stakeholder Outreach
August 2020
Petition for Hearing
September 2020
Prepare Amendments
October 2020
Prepare Amendments
Public Comment Period
November 2020
Public Meetings
December 2020
Compile Comments
January 2021
Revise Amendments as warranted
February 2021
Revise Amendments as warranted
March 2021
Prepare Hearing Notice
April 2021
Public Hearing Notice
May 2021
Prepare NOI
June 2021
NOI Filing
July 2021
Hearing
August 2021
September 2021

Listening Session

IV

General Format for Session

Raise Hand

When called on by Moderator, please provide a brief (1-2 minute) statement

- Looking for input on some of the areas NMED is considering amending
- Input on the tentative timeline
- Input on other areas of need of review under 20.6.4 NMAC

Once everyone has had opportunity to speak you may be called on again to expand further on your ideas if needed

SWQB Stakeholder Input for the Triennial Review of WQS

Thank You

jennifer.fullam@state.nm.us

Environment Department

Environmental Emergencies:
505-827-9329 (24 hrs)

Surface Water Quality

SWQB Home
Report a Spill
Non-emergency Environmental Notification / Complaints
Contact Us
Monitoring, Assessment & Standards Section
Point Source Regulation Section
Watershed Protection Section
New Mexico Wetlands Program

Welcome to the Surface Water Quality Bureau!

Our mission is to preserve, protect, and improve New Mexico's surface water quality for present and future generations.


Sitting Bull Falls
Pecos Watershed

In support of this mission, the Su
Water Quality Bureau is compris
three sections:

The **Monitoring, Assessmer
Standards Section** is respons
the continual collection, inte
and assessment of water quality
all lakes, streams, and rivers in th
of New Mexico in addition
preparation of water quality sta
the 303(d)/305(b) Integrated
and TMDL documents.

The **Point Source Regu
Section** is responsible f
protection of surface water
through implementation of Grou
Surface Water Protection Regu
dealing with point source disc
NPDES permitting, and spill repo

The **Watershed Protection S**
administers the Nonpoint
Program, the Wetlands Progra
the River Stewardship Program.

What's New?

- NMED Comments to EPA regarding proposed updates to water quality certification regulations under the Clean Water Act Section 401. Submitted by NMED on 10-21-2019
- NMED WOTUS Comments regarding the Agencies (EPA, Army Corps) proposed revision to the definition of waters of the U.S. under the Clean Water Act. Submitted by NMED on 4-15-2019.

Monitoring, Assessment, and Standards Section

- Final Draft – 2020-2022 CWA 303(d)/305(b) Integrated Report
- WQCC-approved Chama River Watershed TMDL & WQCC Order
- 2020 Water Quality Management Plan/Continuing Planning Process Approved by EPA
- 2020 Triennial Review Notice of Public Comment Period and Public Meeting on NMED's proposed amendments to 20.6.4 NMAC are due to NMED no later than 5:00 p.m. MST December 2, 2020

Point Source Regulation Section

- MS4 Designation for Los Alamos
- Region 6 Stormwater Conference,postponed to 2021, in New Orleans LA
- Region 6 Pretreatment Workshop, postponed to 2021,Denton TX
- USEPA NetDMR Support quarterly training schedule
- Do you have a water quality project that needs funding? Apply at Clean Water State Revolving Fund (CWSRF)
- EPA has announced their newest NPDES National Compliance Initiative, *Increasing Attention to Significant Non-Compliance Dischargers*. You can explore EPA's expectations to attain improved surface water quality in their memo, here: EPA's Compliance Advisory and SNC NCI Compliance Advisory September 2020.

Watershed Protection Section

- Water Quality Funding sources
- Technical Guides for wetlands restoration

- Newsletters
- Public Notices
- Request for Proposals
- Fish Consumption Advisories
- Org Chart

- SWQB mapper
- 303(d)/305(b) Integrated Report
- Rules and Regulations
- TMDL List
- Request Public Records

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87505

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Water Quality Standards

Gila River below Red Rocks

New Mexico's **Water Quality St** codified at 20.6.4 NMAC, defi quality goals by designating uses streams, lakes and other surface setting criteria to protect those establishing antidegradation prov preserve water quality. The Stan adopted by the Water Quality Commission (WQCC), then approv United States Environmental Agency (US EPA) under the fede Water Act (CWA).

Contact Jennifer Fullam, Coordinator, with any questions ab activities.

Current Standards

- New Mexico's Water Quality Standards as approved by the New Mexico's Water Quality Control Commission (WQCC) effective as of May 22, 2020 for purposes of State implementation and approved by EPA for Clean Water Act Purposes on July 24, 2020.
- EPA-Approved Tribal Standards
- SWQB interactive GIS mapper

2020 Triennial Review

In accordance with Section 303(c)(1) of the CWA and 20.6.4.10 New Mexico Administrative Code ("NMAC"), states are required to hold public hearings at least once every three years to review, amend, and adopt water quality standards, as applicable. This is referred to as a "Triennial Review". The 2020 Triennial Review has been initiated and filed with the Water Quality Control Commission under WQCC 20-51(R).

Please click here for SWQB's updates on the 2020 Triennial Review.

List of Revisions and Amendments

List of all WQS amendments, including Triennial Reviews, UAAs,

NMED Exhibit 83

Regulations	New Mexico Water Quality Act NMSA §74-6-1 Federal Clean Water Act 40 CFR Subchapter D Water Programs §130 and§131
References	Use Attainability Analysis (UAA) Hydrology Protocol WQMP/CPP Nutrient thresholds Sediment thresholds Biocriteria Aluminum filtration study Air-water correlation and summary white paper

CURRENT SWQB TOPICS

- SWQB Calendar
- Newsletters
- Public Notices
- Request for Proposals
- Fish Consumption Advisories
- Org Chart

SWQB RESOURCES

- Water Quality Standards
- SWQB mapper
- 303(d)/305(b) Integrated Report
- Rules and Regulations
- TMDL List
- Request Public Records

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SWQB Home

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Non-emergency Environmental Notification / Complaints

Contact Us

Monitoring, Assessment & Standards Section

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New Mexico Wetlands Program

2020 Triennial Review

Executive Summary: In accordance with Section 303(c)(1) of the CWA and 20.6.4.10 New Mexico Administrative Code ("NMAC"), states are required to hold public hearings at least once every three years to review, amend, and adopt water quality standards, as applicable. This is referred to as a "Triennial Review". Pursuant to Section 74-6-4(F) of the State's Water Quality Act ("WQA"), the Water Quality Control Commission ("WQCC") delegated the New Mexico Environment Department ("NMED") the responsibility for organizing and proposing amendments to the State's surface water quality standards, codified under 20.6.4 NMAC. This matter has been docketed under WQCC 20-51(R).

NMED is proposing several amendments as part of the Triennial Review which include, but are not limited to the following:

- Updating definitions (20.6.4.7 NMAC)
- Clarification of language under Review of Standards (20.6.4.10 NMAC)
- Clarification of language under Use Attainability Analysis (20.6.4.15 NMAC)
- Several designated use amendments
  - Existing Use Analysis for non-perennial waters within Los Alamos National Laboratory currently classified under 20.6.4.128 NMAC
  - Existing Use Analysis for perennial classified waters with a secondary contact recreational use
- Updates to the numeric aquatic life and human health criteria (20.6.4.900 NMAC)
- Updates to the numeric ammonia criteria (20.6.4.900 NMAC)

Document	Author	Date
Public Involvement Plan	SWQB	08.11.2020
Notice of Public Comment Period on NMED's Proposed Amendments English and Spanish (Español)	SWQB	11.02.2020
Notice of Public Meeting English and Spanish (Español)	SWQB	11.02.2020

Public Comment Draft of NMED's Proposed Amendments to 20.6.4 NMAC	SWQB	11.02.2020
Extension of Public Comment Period NMED's Proposed Amendments English and Spanish (Español)	SWQB	11.25.2020
Public Comments regarding proposed amendments to 20.6.4 NMAC, as submitted to NMED		
Petition and Hearing Request	SWQB	08.19.2020
Order for Hearing and Appointment of Hearing Officer	WQCC	10.19.2020
Scheduling Order		
Procedural Order		
Hearing Notice in NM Register		
WQCC 20-51(R) Pleadings Log	Various	Various
Final Order and Statement of Reasons		
Integrated Rule 20.6.4 NMAC		
Submittal Letter to EPA		
EPA's Response and Technical Support Document (TSD)		

CURRENT SWQB TOPICS

- SWQB Calendar
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- Water Quality Standards
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Harold L. Runnels Building // 1190 St. Francis Drive, Suite N4050 // Santa Fe, New Mexico 87505 // tel (800) 219-6157, (505) 827-2855

From: New Mexico Environment Department
To: Fullam, Jennifer, NMENV
Subject: [EXT] 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
Date: Monday, November 2, 2020 10:06:37 AM

SWQB logo

Surface Water Quality Bureau

Our mission is to preserve, protect, and improve New Mexico's surface water quality for present and future generations.

Oficina de Calidad de Aguas Superficiales

Nuestra misión es preservar, proteger y mejorar la calidad de las aguas superficiales de Nuevo México para las generaciones presentes y futuras.

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

The New Mexico Environment Department's (NMED) Surface Water Quality Bureau (SWQB) invites the public to comment on NMED's proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC).

Please note that comments submitted to NMED SWQB on the Public Comment Draft 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. 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.

Background

It is the objective of the federal Clean Water Act (CWA) to restore and maintain the chemical, physical, and biological integrity of the nation's waters, including those in New Mexico. As part of upholding the objective of the CWA, the State of New Mexico is required by statute to adopt water quality standards that protect the public health or welfare and enhance the quality of water, and are consistent with and serve the purposes of the New Mexico Water Quality Act (WQA) and the federal CWA. New Mexico's surface water quality standards are codified under 20.6.4 NMAC.

In accordance with Section 303(c)(1) of the CWA and 20.6.4.10 NMAC, States are required to hold public hearings at least once every three years to review, amend, and adopt water quality standards, as applicable. This is referred to as a "Triennial Review." Pursuant to Section 74-6-4(F) of the WQA, the Water Quality Control Commission (WQCC) delegated NMED the responsibility for organizing and proposing amendments to the state's surface water quality standards.

The last Triennial Review of the state's surface water quality standards was approved by the U.S. Environmental Protection Agency in August 2017. Therefore, NMED initiated the current Triennial Review process by petitioning the WQCC in August 2020 for a July 2021 hearing date and providing NMED's proposed amendments to the public for comment.

How to participate

Proposed amendments, open to public comment at this time, can be found at:

https://www.env.nm.gov/surface-water-quality/2020-triennial-review/.

The 30-day public comment period for the proposed amendments begins November 2, 2020 and closes December 2, 2020 at 5:00 p.m. MST.

Individuals seeking to submit comments may do so by filing electronically via email to **jennifer.fullam@state.nm.us;** or in paper format by mailing comments to NMED-SWQB Attn: Jennifer Fullam-2020 Triennial Review, P.O. Box 5469, Santa Fe, NM, 87502. When responding by email please enter "2020 Triennial Review" in the subject line and include your name, title (as applicable), affiliation (as applicable), email, phone number, mailing address, and relevant comments to the proposed amendments in the body of the email. Due to the continued public health emergency response to the COVID-19 virus and the Governor's current Executive Orders, all communication at this time will take place remotely.

In addition, NMED-SWQB will be hosting two virtual informational meetings via WebEx to present and discuss the proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC, and provide a forum for interested parties and the public to ask questions. Information regarding these meetings is as follows:

Thursday, November 12, 2020 at 5:30 pm

To connect via video conference, go to: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m2c02c30bde6ebd695c02c5e93a0ec89e

Meeting number: 133 882 6733
Password: 3ujReRzvu93
Join by phone
+1-415-655-0001 US Toll
Access code: 133 882 6733

Monday, November 16, 2020 at 2:30 pm

To connect via video conference, go to: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m18b08b7d5b5972ecdf9a3c48e3513c82

Meeting number: 133 892 4647
Password: jFUVpMZ3N75
Join by phone
+1-415-655-0001 US Toll
Access code: 133 892 4647

If you have difficulties logging on to the meeting at the scheduled time, please contact Kris Barrios at 505-946-8713.

Persons having a disability or requiring assistance or auxiliary aid to participate in this public process should contact the NMED Human Resources Bureau at least 10 days before any scheduled meeting, by mail at P.O. Box 5469, 1190 St. Francis Drive, Santa Fe, New Mexico, 87502, telephone 505-827-9769. TDD or TDY users please access HRB via the New Mexico Relay Network at 1-800-659-8331.

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil

Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or you believe you have been discriminated against with respect to a NMED program or activity, you may contact Ms. Kathryn Becker – NMED Non-Discrimination Coordinator, New Mexico Environment Department, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us.

AVISO DE PERÍODO DE COMENTARIOS PÚBLICOS Y REUNIONES INFORMATIVAS SOBRE LAS ENMIENDAS PROPUESTAS POR EL DEPARTAMENTO DE MEDIO AMBIENTE DE NUEVO MÉXICO A LOS ESTÁNDARES PARA LAS AGUAS SUPERFICIALES INTERESTATALES Y ESTATALES (20.6.4 NMAC) - REVISIÓN TRIENAL

La Oficina de Calidad de Aguas Superficiales (SWQB, por sus siglas en inglés) del Departamento de Medio Ambiente de Nuevo México (NMED, por sus siglas en inglés) invita al público a que hagan comentarios sobre las enmiendas propuestas por el NMED a los Estándares Estatales para Aguas Superficiales Interestatales y Estatales, 20.6.4 Código Administrativo de Nuevo México (NMAC, por sus siglas en inglés).

Tenga en cuenta que los comentarios presentados a NMED SWQB sobre el Borrador de Comentarios Públicos son para la consideración de NMED SWQB en el desarrollo adicional de las enmiendas propuestas antes de las fechas límite de la audiencia preliminar para presentar testimonios técnicos, y no se convertirán automáticamente en parte del registro de audiencia de la WQCC 20-51 (R). Los comentarios destinados a formar parte del registro de audiencia de la WQCC 20-51 (R) deberán enviarse al administrador de audiencias de la WQCC de conformidad con el 20.1.6.204(B) NMAC.

Antecedentes

El objetivo de la Ley Federal de Agua Limpia (CWA, por sus siglas en inglés) es restaurar y mantener la integridad química, física y biológica de las aguas del país, incluidas las de Nuevo México. Como parte de la defensa del objetivo de la CWA, el Estado de Nuevo México está obligado por ley a adoptar normas de calidad del agua que protejan la salud o el bienestar público y mejoren la calidad del agua, y que sean consistentes y sirvan a los propósitos de la Ley de Calidad del Agua de Nuevo México (WQA, por sus siglas en inglés) y la CWA federal. Los Estándares de calidad de las aguas superficiales de Nuevo México están codificadas en 20.6.4 NMAC.

De conformidad con la Sección 303 (c)(1) de la CWA y 20.6.4.10 NMAC, los estados están obligados a celebrar audiencias públicas al menos una vez cada tres años para revisar, enmendar y adoptar estándares de calidad del agua, según proceda. Esto se conoce como "Revisión Trienal". De conformidad con la Sección 74-6-4(F) de la WQA, la Comisión de Control de la Calidad del Agua (WQCC, por sus siglas en inglés) delegó al NMED la responsabilidad de organizar y proponer enmiendas a los Estándares de calidad de las aguas superficiales del estado.

La última revisión trienal de los Estándares de calidad de las aguas superficiales del estado fue aprobada por la Agencia de Protección Ambiental de los Estados Unidos en agosto de 2017. Por lo tanto, el NMED inició el actual proceso de Revisión Trienal solicitando a la WQCC en agosto de 2020 una fecha de audiencia en julio de 2021 y proporcionando las enmiendas propuestas por el NMED al público para comentarios.

Cómo participar

Las enmiendas propuestas, abiertas a comentarios públicos en este momento, se pueden encontrar en: https://www.env.nm.gov/surface-water-quality/2020-triennial-review/.

El período de 30 días de comentarios públicos para las enmiendas propuestas comienza el 2 de noviembre de 2020 y se cierra el 2 de diciembre de 2020 a las 5:00 p.m., hora estándar de la montaña.

Las personas que deseen presentar comentarios pueden hacerlo por correo electrónico a **jennifer.fullam@state.nm.us**; o mediante formato impreso enviando comentarios por correo postal a NMED-SWQB Attn: Jennifer Fullam-2020 Triennial Review, P.O. Box 5469, Santa Fe, NM, 87502. Cuando responda por correo electrónico, escriba "Revisión Trienal 2020" en la línea de asunto e incluya su nombre, título (según corresponda), afiliación (según corresponda), correo electrónico, número de teléfono, dirección postal y comentarios pertinentes a las enmiendas propuestas en el cuerpo del correo electrónico. Debido a la continua respuesta de emergencia de salud pública al virus COVID-19 y las actuales órdenes ejecutivas de la gobernadora, toda la comunicación en este momento tendrá lugar de forma remota.

Además, NMED-SWQB organizará dos reuniones informativas virtuales a través de WebEx para presentar y discutir las enmiendas propuestas a los Estándares Estatales para Aguas Superficiales Interestatales y Estatales, 20.6.4 NMAC, y proporcionar un foro para que las partes interesadas y el público hagan preguntas. La información sobre estas reuniones es la siguiente:

Jueves, 12 de noviembre de 2020 a las 5:30 p.m.

Para conectarse a través de videoconferencia, vaya a: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m2c02c30bde6ebd695c02c5e93a0ec89e

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Únete por teléfono.
+1-415-655-0001 Peaje de EE. UU.
Código de acceso: 133 882 6733

Lunes, 16 de noviembre de 2020 a las 2:30 p.m.

Para conectarse mediante videoconferencia, vaya a: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m18b08b7d5b5972ecdf9a3c48e3513c82

Número de la reunión: 133 892 4647
Contraseña: jFUVpMZ3N75
Únete por teléfono.
+1-415-655-0001 Peaje de EE.UU.
Código de acceso: 133 892 4647

Si tiene dificultades para acceder a la reunión a la hora programada, comuníquese con Kris Barrios llamando al 505-946-8713.

Las personas que tengan una discapacidad o que requieran asistencia o un dispositivo auxiliar para participar en este proceso público deben comunicarse con la Oficina de Recursos Humanos del NMED al menos 10 días antes de cualquier reunión programada, por correo postal en P.O. Box 5469, 1190 St. Francis Drive, Santa Fe, NM, 87502, teléfono 505-827-9769. Los usuarios de TDD o TDY pueden acceder a HRB a través de New Mexico Relay Network llamando al 1-800-659-8331.

El NMED no discrimina por motivos de raza, color, nacionalidad, discapacidad, edad o sexo en la administración de sus programas o actividades, como lo exigen las leyes y reglamentos aplicables. El NMED es responsable de la coordinación de los esfuerzos de cumplimiento y la recepción de las consultas relativas a los requisitos de no discriminación implementados por 40 C.F.R. Partes 5 y 7, incluyendo el Título VI de la Ley de Derechos Civiles de 1964, con sus enmiendas; la Sección 504 de

la Ley de Rehabilitación de 1973; la Ley de Discriminación por Edad de 1975, el Título IX de las Enmiendas de Educación de 1972, y la Sección 13 de las Enmiendas de la Ley Federal de Control de Contaminación del Agua de 1972. Si tiene alguna pregunta sobre este aviso o cualquiera de los programas, políticas o procedimientos de no discriminación del NMED, o si cree que ha sido discriminado con respecto a un programa o actividad del NMED, puede ponerse en contacto con: Kathryn Becker, coordinadora de no discriminación, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. También puede visitar nuestro sitio web en https://www.env.nm.gov/non-employee-discrimination-complaint-page/ para saber cómo y dónde presentar una queja por discriminación.

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Subject: FW: [EXT] Bulletin Detail Report: 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
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Sent: 11/02/2020 11:05 AM CST

Sent By: Heidi.Henderson@state.nm.us

Sent To: Subscribers of Surface Water

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97.0% Delivered

1% Pending
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15% Open Rate
3% Click Rate

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Email delivery statistics line / bar chart

Minutes	Cumulative Attempted
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10	98%
30	99%
60	99%
120	99%

Delivery Metrics - Details

1,805 Total Sent

1,751 (97%) Delivered

14 (1%) Pending

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529 Total Opens

256 (15%) Unique Opens

75 Total Clicks

44 (3%) Unique Clicks

16 # of Links

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Link URL	Unique Clicks	Total Clicks
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http://164.64.110.134/parts/title20/20.001.0006.html	4	9
https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m2c02c30bde6ebd695c02c5e9...	4	7
https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m18b08b7d5b5972ecdf9a3c48...	4	6
https://www.env.nm.gov/swqb/index.html	3	3
https://content.govdelivery.com/accounts/NMED/bulletins/2a8e5c6	2	2
https://www.env.nm.gov/	2	2
https://public.govdelivery.com/accounts/NMED/subscriber/edit?preferences...	2	2
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mortiz@cimarex.com	Delivered
Network subscriber	Delivered
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mowens@ee-g.com	Delivered
Network subscriber	Delivered
mrashby9@gmail.com	Delivered
mroberts@targaresources.com	Delivered
Mryanez@ksilp.com	Delivered
ms.j.kaplan@gmail.com	Delivered
msanchez@abcwua.org	Delivered
mschumann@tnc.org	Delivered
msloane@state.nm.us	Delivered
Network subscriber	Delivered
mswright@unm.edu	Delivered

mtnlight@taosnet.com	Delivered
mtorrez@calwater.com	Delivered
muenzberg505@msn.com	Delivered
murlock@raintreecounty.com	Delivered
murrayfineart@newmexico.com	Delivered
mwa@abeqas.com	Delivered
mwalton@quiviracoalition.org	Delivered
mwilson@nmda.nmsu.edu	Delivered
mwiseman@rcac.org	Delivery Failure
mwsa@nnmt.net	Delivered
Network subscriber	Delivered
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nancy.nething@pnmresources.com	Delivered
Nansara1@gmail.com	Delivered
nanu1996@hotmail.com	Delivered
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ndictson@gmail.com	Delivered
nealkingtsv@cs.com	Delivered
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nnepawq@frontiernet.net	Delivered
Network subscriber	Delivered
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norvellehome@msn.com	Delivered
Network subscriber	Delivered
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From:	Fullam, Jennifer, NMENV
To:	Fullam, Jennifer, NMENV
Bcc:	"centralcurry@gmail.com"; "allenb@yucca.net"; "sanderson@edf.org"; "nastille@fmi.com"; "gesslinger@ebid-nm.org"; "grantswcd@zianet.com"; "swcd@carlsbadsoilandwater.org"; "betsyloulou@yahoo.com"; "nate_caswell@fws.gov"; "judy.calman@audubon.org"; "kcc123carroll@gmail.com"; "hdconserve@gmail.com"; "achavez@sjwc.org"; "swcdhidalgo@yahoo.com"; "rconn@amigosbravos.org"; "nmcga@nmagriculture.org"; "cdanforth@edf.org"; "cdesaillan@nmelc.org"; "DeRoseBammanConsulting@gmail.com"; "BusinessManager@sierrasoil.org"; "caballoswcd@gmail.com"; "clara.dubois@nm.nacdnet.net"; "samantha@h2o-legal.com"; "brittany@nmwild.org"; "Gwendolynne.Frost@conocophillips.com"; "nmwgi@nmagriculture.org"; "ggage6@live.com"; "rgallegos@lanl.gov"; "bngaume@gmail.com"; "bgensemer@geiconsultants.com"; "ellen5753@gmail.com"; "jstvglass@gmail.com"; "sgordon@swuraniumimpacts.org"; "Cgulde@chevron.com"; "leaswcd@leaco.net"; "Chelsea.Hannink@nm.nacdnet.net"; "betty.moore@powereng.com"; "Ruthann.harriett@nm.nacdnet.net"; "Ruthann.harriett@nm.nacdnet.net"; "kyle@egolflaw.com"; "zozoswcd@tularosa.net"; Holcomb, Sarah, NMENV; "biacona@lanl.gov"; "ejantz@nmelc.org"; "roy.jemison@usda.gov"; "upperhondo@windstream.net"; "info@coronadoswcd.org"; "wdkinman@gmail.com"; "soilcons@dfn.com"; "cvswcd@pvtn.net"; "ckrueger@fmi.com"; "Hollis.Lawrence@nmgco.com"; "nmflc@nmagriculture.org"; "tlemke@lanl.gov"; "Cheri.Lujan@nm.nacdnet.net"; "joel_lusk@fws.gov"; "Jennifer.lutes@nm.nacdnet.net"; "lynn_wellman@fws.gov"; "ucmesaswcd@gmail.com"; "francesbmartinez@hotmail.com"; "francesbmartinez@hotmail.com"; "Stacie.martinez@aol.com"; "melissa.may@sanjuanswcd.com"; "jmccaleb@taylormccaleb.com"; Meiklejohn, Doug; "VALENCIAswcd@live.com"; "victoria.milne@nm.nacdnet.net"; "dlm@gknet.com"; "pmontoia@fmtn.org"; "ciudadswcd1944@gmail.com"; "dmueller@edf.org"; "Nelson, Russell"; "nokes@westernlaw.org"; "luke@egolflaw.com"; "Rooseveltswcd@gmail.com"; "jrosenblatt@las-cruces.org."; "saladen@lanl.gov"; "demingswcd@yahoo.com"; "WesternMoraSWCD@gmail.com"; "nsaunders@edf.org"; "daswcd.board@daswcd.org"; "bsmythe.eswcd@gmail.com"; "Cynthia.Spidle@nm.nacdnet.net"; "socorroswcd@qwestoffice.net"; "Diedre.Tarr@nm.nacdnet.net"; "Marcus.Valdez@nm.nacdnet.net"; "jovaldez@windstream.net"; "ColfaxSWCD@gmail.com"; "Steve.Veenis@em-la.doe.gov"; "bvelarde.cubaswcd@gmail.com"; "pvigil@tswcd.org"; "info@tswcd.org"; "soilcons@dfn.com"; "sfswcd@gmail.com"; "mwest@plateautel.net"; Wunder, Matthew, DGF; "elestinoy@gmail.com"; Verheul, John, NMENV; Maxfield, Annie, NMENV; Lemon, Shelly, NMENV; Barrios, Kristopher, NMENV
Subject:	NMED"s Triennial Review NOTICE OF PUBLIC COMMENT PERIOD AND INFORMATIONAL MEETINGS
Date:	Monday, November 2, 2020 9:30:00 AM
Attachments:	image003.png

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

The New Mexico Environment Department's (NMED) Surface Water Quality Bureau (SWQB) invites the public to comment on NMED's proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC).

Please note that comments submitted to NMED SWQB on the Public Comment Draft 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. 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.

Background

It is the objective of the federal Clean Water Act (CWA) to restore and maintain the chemical, physical, and biological integrity of the nation's waters, including those in New Mexico. As part of upholding the objective of the CWA, the State of New Mexico is required by statute to adopt water quality standards that protect the public health or welfare and enhance the quality of water, and are consistent with and serve the purposes of the New Mexico Water Quality Act (WQA) and the federal CWA. New Mexico's surface water quality standards are codified under 20.6.4 NMAC.

In accordance with Section 303(c)(1) of the CWA and 20.6.4.10 NMAC, States are required to hold public hearings at least once every three years to review, amend, and adopt water quality standards, as applicable. This is referred to as a "Triennial Review." Pursuant to Section 74-6-4(F) of the WQA, the Water Quality Control Commission (WQCC) delegated NMED the responsibility for organizing and proposing amendments to the state's surface water quality standards.

The last Triennial Review of the state's surface water quality standards was approved by the U.S. Environmental Protection Agency in August 2017. Therefore, NMED initiated the current Triennial Review process by petitioning the WQCC in August 2020 for a July 2021 hearing date and providing NMED's proposed amendments to the public for comment.

How to participate
Proposed amendments, open to public comment at this time, can be found at:
https://www.env.nm.gov/surface-water-quality/2020-triennial-review/.

The 30-day public comment period for the proposed amendments begins November 2, 2020 and closes December 2, 2020 at 5:00 p.m. MST.

Individuals seeking to submit comments may do so by filing electronically via email to **jennifer.fullam@state.nm.us;** or in paper format by mailing comments to NMED-SWQB Attn: Jennifer Fullam-2020 Triennial Review, P.O. Box 5469, Santa Fe, NM, 87502. When responding by email please enter "2020 Triennial Review" in the subject line and include your name, title (as applicable), affiliation (as applicable), email, phone number, mailing address, and relevant comments to the proposed amendments in the body of the email. Due to the continued public health emergency response to the COVID-19 virus and the Governor's current Executive Orders, all communication at this time will take place remotely.

In addition, NMED-SWQB will be hosting two virtual informational meetings via WebEx to present and discuss the proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC, and provide a forum for interested parties and the public to ask questions. Information regarding these meetings is as follows:

Thursday, November 12, 2020 at 5:30 pm
To connect via video conference, go to: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m2c02c30bde6ebd695c02c5e93a0ec89e
Meeting number: 133 882 6733
Password: 3ujReRzvu93
Join by phone
+1-415-655-0001 US Toll
Access code: 133 882 6733

Monday, November 16, 2020 at 2:30 pm
To connect via video conference, go to: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m18b08b7d5b5972ecdf9a3c48e3513c82

Meeting number: 133 892 4647
Password: jFUVpMZ3N75
Join by phone
+1-415-655-0001 US Toll
Access code: 133 892 4647

If you have difficulties logging on to the meeting at the scheduled time, please contact Kris Barrios at 505-946-8713.

Persons having a disability or requiring assistance or auxiliary aid to participate in this public process should contact the NMED Human Resources Bureau at least 10 days before any scheduled meeting, by mail at P.O. Box 5469, 1190 St. Francis Drive, Santa Fe, New Mexico, 87502, telephone 505-827-9769. TDD or TDY users please access HRB via the New Mexico Relay Network at 1-800-659-8331.

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or you believe you have been discriminated against with respect to a NMED program or activity, you may contact Ms. Kathryn Becker – NMED Non-Discrimination Coordinator, New Mexico Environment Department, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us.

AVISO DE PERÍODO DE COMENTARIOS PÚBLICOS Y REUNIONES INFORMATIVAS SOBRE LAS ENMIENDAS PROPUESTAS POR EL DEPARTAMENTO DE MEDIO AMBIENTE DE NUEVO MÉXICO A LOS ESTÁNDARES PARA LAS AGUAS SUPERFICIALES INTERESTATALES Y ESTATALES (20.6.4 NMAC) - REVISIÓN TRIENAL

La Oficina de Calidad de Aguas Superficiales (SWQB, por sus siglas en inglés) del Departamento de Medio Ambiente de Nuevo México (NMED, por sus siglas en inglés) invita al público a que hagan comentarios sobre las enmiendas propuestas por el NMED a los Estándares Estatales para Aguas Superficiales Interestatales y Estatales, 20.6.4 Código Administrativo de Nuevo México (NMAC, por sus siglas en inglés).

Tenga en cuenta que los comentarios presentados a NMED SWQB sobre el Borrador de Comentarios Públicos son para la consideración de NMED SWQB en el desarrollo adicional de las enmiendas propuestas antes de las fechas límite de la audiencia preliminar para presentar testimonios técnicos, y no se convertirán automáticamente en parte del registro de audiencia de la WQCC 20-51 (R). Los comentarios destinados a formar parte del registro de audiencia de la WQCC 20-51 (R) deberán enviarse al administrador de audiencias de la WQCC de conformidad con el 20.1.6.204(B) NMAC.

Antecedentes
El objetivo de la Ley Federal de Agua Limpia (CWA, por sus siglas en inglés) es restaurar y mantener la integridad química, física y biológica de las aguas del país, incluidas las de Nuevo México. Como

parte de la defensa del objetivo de la CWA, el Estado de Nuevo México está obligado por ley a adoptar normas de calidad del agua que protejan la salud o el bienestar público y mejoren la calidad del agua, y que sean consistentes y sirvan a los propósitos de la Ley de Calidad del Agua de Nuevo México (WQA, por sus siglas en inglés) y la CWA federal. Los Estándares de calidad de las aguas superficiales de Nuevo México están codificadas en 20.6.4 NMAC.

De conformidad con la Sección 303 (c)(1) de la CWA y 20.6.4.10 NMAC, los estados están obligados a celebrar audiencias públicas al menos una vez cada tres años para revisar, enmendar y adoptar estándares de calidad del agua, según proceda. Esto se conoce como "Revisión Trienal". De conformidad con la Sección 74-6-4(F) de la WQA, la Comisión de Control de la Calidad del Agua (WQCC, por sus siglas en inglés) delegó al NMED la responsabilidad de organizar y proponer enmiendas a los Estándares de calidad de las aguas superficiales del estado.

La última revisión trienal de los Estándares de calidad de las aguas superficiales del estado fue aprobada por la Agencia de Protección Ambiental de los Estados Unidos en agosto de 2017. Por lo tanto, el NMED inició el actual proceso de Revisión Trienal solicitando a la WQCC en agosto de 2020 una fecha de audiencia en julio de 2021 y proporcionando las enmiendas propuestas por el NMED al público para comentarios.

Cómo participar
Las enmiendas propuestas, abiertas a comentarios públicos en este momento, se pueden encontrar en: https://www.env.nm.gov/surface-water-quality/2020-triennial-review/.

El período de 30 días de comentarios públicos para las enmiendas propuestas comienza el 2 de noviembre de 2020 y se cierra el 2 de diciembre de 2020 a las 5:00 p.m., hora estándar de la montaña.

Las personas que deseen presentar comentarios pueden hacerlo por correo electrónico a **jennifer.fullam@state.nm.us**; o mediante formato impreso enviando comentarios por correo postal a NMED-SWQB Attn: Jennifer Fullam-2020 Triennial Review, P.O. Box 5469, Santa Fe, NM, 87502. Cuando responda por correo electrónico, escriba "Revisión Trienal 2020" en la línea de asunto e incluya su nombre, título (según corresponda), afiliación (según corresponda), correo electrónico, número de teléfono, dirección postal y comentarios pertinentes a las enmiendas propuestas en el cuerpo del correo electrónico. Debido a la continua respuesta de emergencia de salud pública al virus COVID-19 y las actuales órdenes ejecutivas de la gobernadora, toda la comunicación en este momento tendrá lugar de forma remota.

Además, NMED-SWQB organizará dos reuniones informativas virtuales a través de WebEx para presentar y discutir las enmiendas propuestas a los Estándares Estatales para Aguas Superficiales Interestatales y Estatales, 20.6.4 NMAC, y proporcionar un foro para que las partes interesadas y el público hagan preguntas. La información sobre estas reuniones es la siguiente:

Jueves, 12 de noviembre de 2020 a las 5:30 p.m.
Para conectarse a través de videoconferencia, vaya a: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m2c02c30bde6ebd695c02c5e93a0ec89e

Número de reunión: 133 882 6733
Contraseña: 3ujReRzvu93
Únete por teléfono.
+1-415-655-0001 Peaje de EE. UU.
Código de acceso: 133 882 6733

Lunes, 16 de noviembre de 2020 a las 2:30 p.m.
Para conectarse mediante videoconferencia, vaya a: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m18b08b7d5b5972ecdf9a3c48e3513c82
Número de la reunión: 133 892 4647
Contraseña: jFUVpMZ3N75
Únete por teléfono.
+1-415-655-0001 Peaje de EE.UU.
Código de acceso: 133 892 4647

Si tiene dificultades para acceder a la reunión a la hora programada, comuníquese con Kris Barrios llamando al 505-946-8713.

Las personas que tengan una discapacidad o que requieran asistencia o un dispositivo auxiliar para participar en este proceso público deben comunicarse con la Oficina de Recursos Humanos del NMED al menos 10 días antes de cualquier reunión programada, por correo postal en P.O. Box 5469, 1190 St. Francis Drive, Santa Fe, NM, 87502, teléfono 505-827-9769. Los usuarios de TDD o TDY pueden acceder a HRB a través de New Mexico Relay Network llamando al 1-800-659-8331.

El NMED no discrimina por motivos de raza, color, nacionalidad, discapacidad, edad o sexo en la administración de sus programas o actividades, como lo exigen las leyes y reglamentos aplicables. El NMED es responsable de la coordinación de los esfuerzos de cumplimiento y la recepción de las consultas relativas a los requisitos de no discriminación implementados por 40 C.F.R. Partes 5 y 7, incluyendo el Título VI de la Ley de Derechos Civiles de 1964, con sus enmiendas; la Sección 504 de la Ley de Rehabilitación de 1973; la Ley de Discriminación por Edad de 1975, el Título IX de las Enmiendas de Educación de 1972, y la Sección 13 de las Enmiendas de la Ley Federal de Control de Contaminación del Agua de 1972. Si tiene alguna pregunta sobre este aviso o cualquiera de los programas, políticas o procedimientos de no discriminación del NMED, o si cree que ha sido discriminado con respecto a un programa o actividad del NMED, puede ponerse en contacto con: Kathryn Becker, coordinadora de no discriminación, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. También puede visitar nuestro sitio web en https://www.env.nm.gov/non-employee-discrimination-complaint-page/ para saber cómo y dónde presentar una queja por discriminación.

Jennifer Fullam
Standards, Planning & Reporting Team Leader
Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr.
Santa Fe, NM 87505
*Phone: 505.946.8954
jennifer.fullam@state.nm.us

PLEASE NOTE NEW PHONE NUMBER

"Innovation, Science, Collaboration, Compliance"

New Mexico Environment Department

Triennial Review of Standards for Interstate and Intrastate Surface Waters

Jennifer Fullam
Surface Water Quality Bureau
Standards, Planning and Reporting Team Leader

November 12, 2020

Photo credit Rhett Zyla #IamNMED

Triennial Review of Water Quality Standards

The Bureau would like to thank you for expressing interest in the Triennial Review of *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC).

General Outline of Todays Discussion

I. **Regulatory Framework for Triennial Reviews**

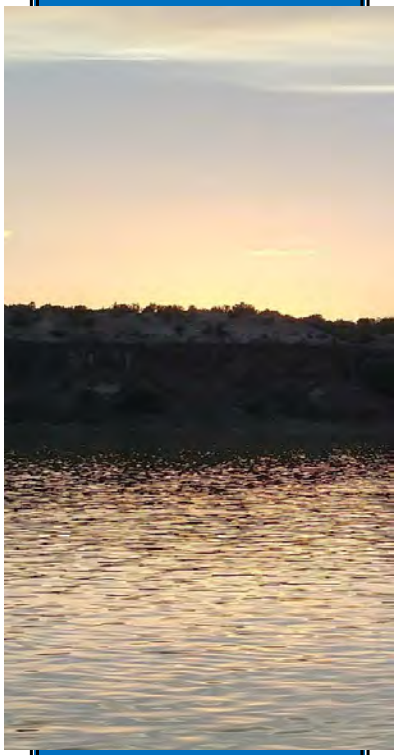
II. **Amendments under consideration for this Triennial**

III. **The Triennial Review Process and Tentative Timelines**

IV. **Listening Session with Members of the Public**


I. Regulatory Framework
3

Triennial Review Requirements



Cochiti Lake, 2017

- Federal CWA § 303(c)(1)
- 40 CFR § 131.20
  - Requires the State hold a public hearing for the purpose of reviewing applicable water quality standards at least once every three years
  - As appropriate, modify and adopt standards through the rulemaking process which requires a hearing
    - re-examine any waterbody segment with water quality standards
    - if any new information has become available
- 20.6.4.10(A) NMAC requires the state hold public hearings at least once every three years to review and propose necessary revisions to the water quality standards

State of New Mexico Water Quality Standards

Federal Water Pollution Control Act (Clean Water Act or "CWA")

Per Section 303 of the CWA, each agency is required to adopt Water Quality Standards	Per Section 101(a) of the CWA, the objective of the Act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters

40 Code of Federal Regulations ("CFR")

Per 40 CFR 131.20, from time to time, but at least once every 3 years, **hold public hearings for the purpose of reviewing applicable water quality standards** adopted pursuant to Sections 131.10 through 131.15 and Federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also **re-examine any waterbody segment with water quality standards that does not include the uses specified in section 101(a)(2)** of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly.

The State of New Mexico's Water Quality Act ("WQA") NMSA 1978, §§ 74-6-1 to -17

Is the mechanism via which the New Mexico Legislature has provided authority to adopt Water Quality Standards in accordance with the CWA

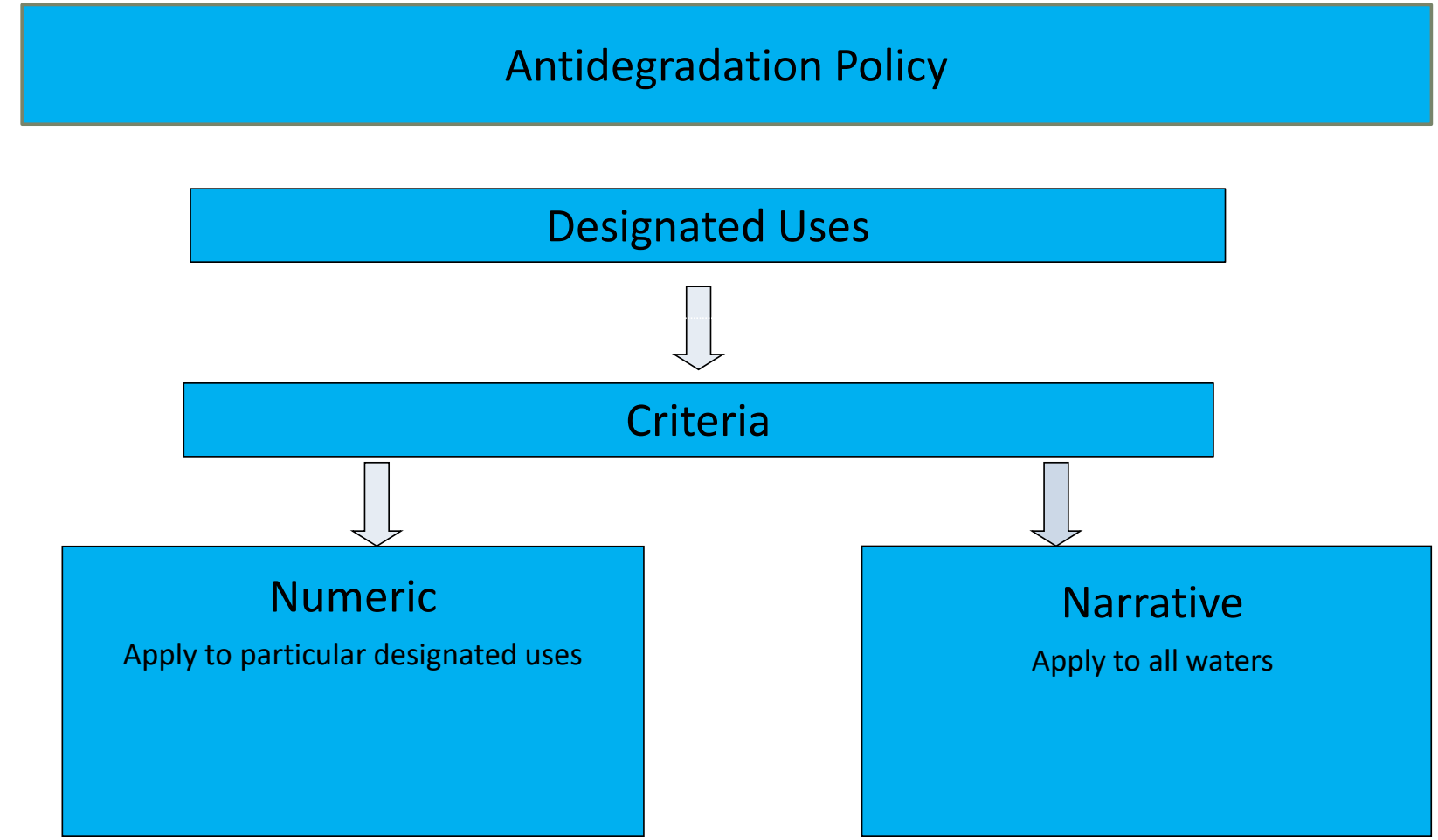
Water Quality Control Commission ("WQCC")

The WQCC, having no administrative staff of its own, has delegated the responsibilities for water quality management and CWA activities involving surface waters to the New Mexico Environment Department ("NMED")

20.6.4 New Mexico Administrative Code ("NMAC")

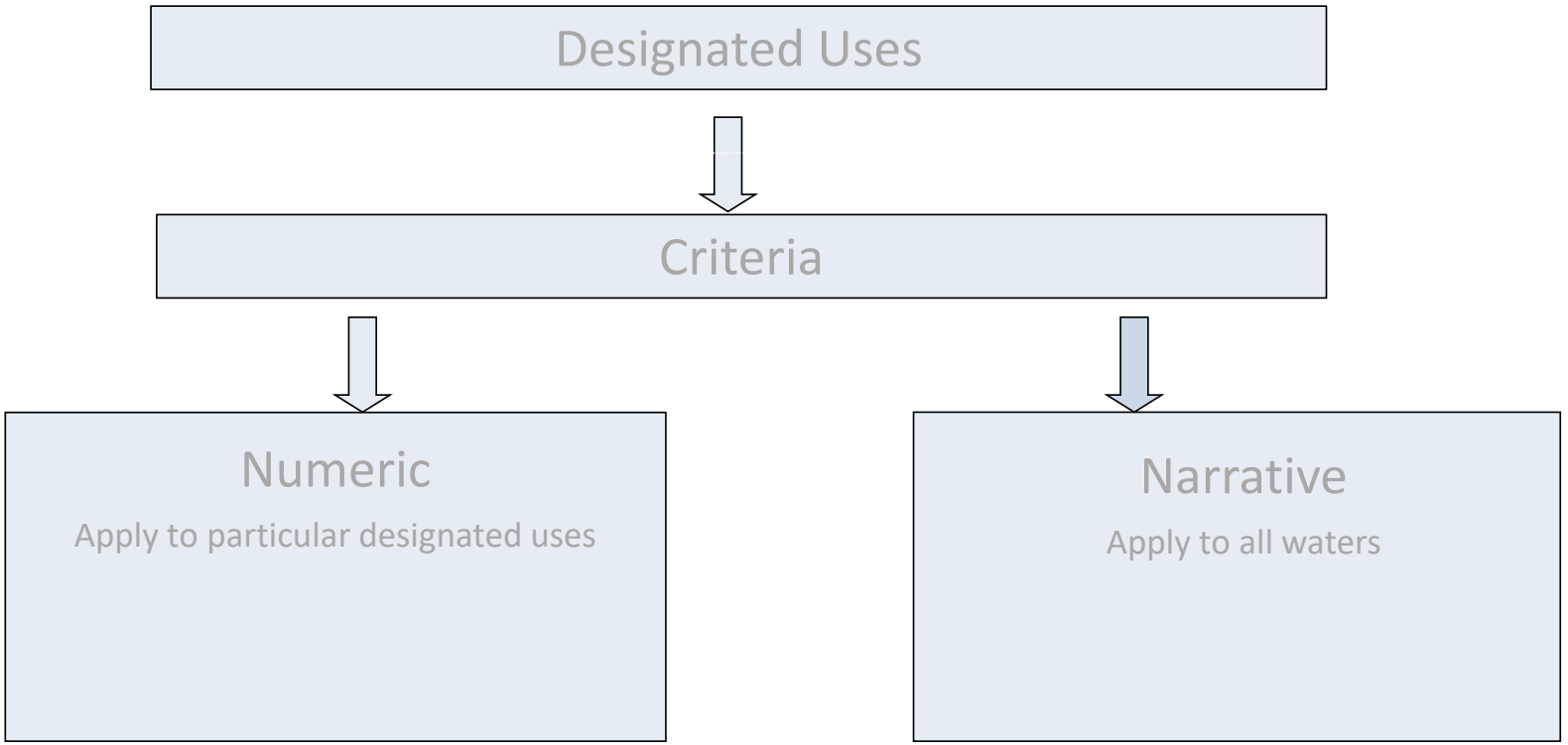
The WQCC has codified its water quality standards for interstate and intrastate surface waters

Water Quality Standards



Water Quality Standards

Antidegradation Policy



Water Quality Standards

Antidegradation Policy

Designated Uses

Criteria

Numeric

Apply to particular designated uses

Narrative

Apply to all waters

Water Quality Standards

Antidegradation Policy

Designated Uses

Criteria

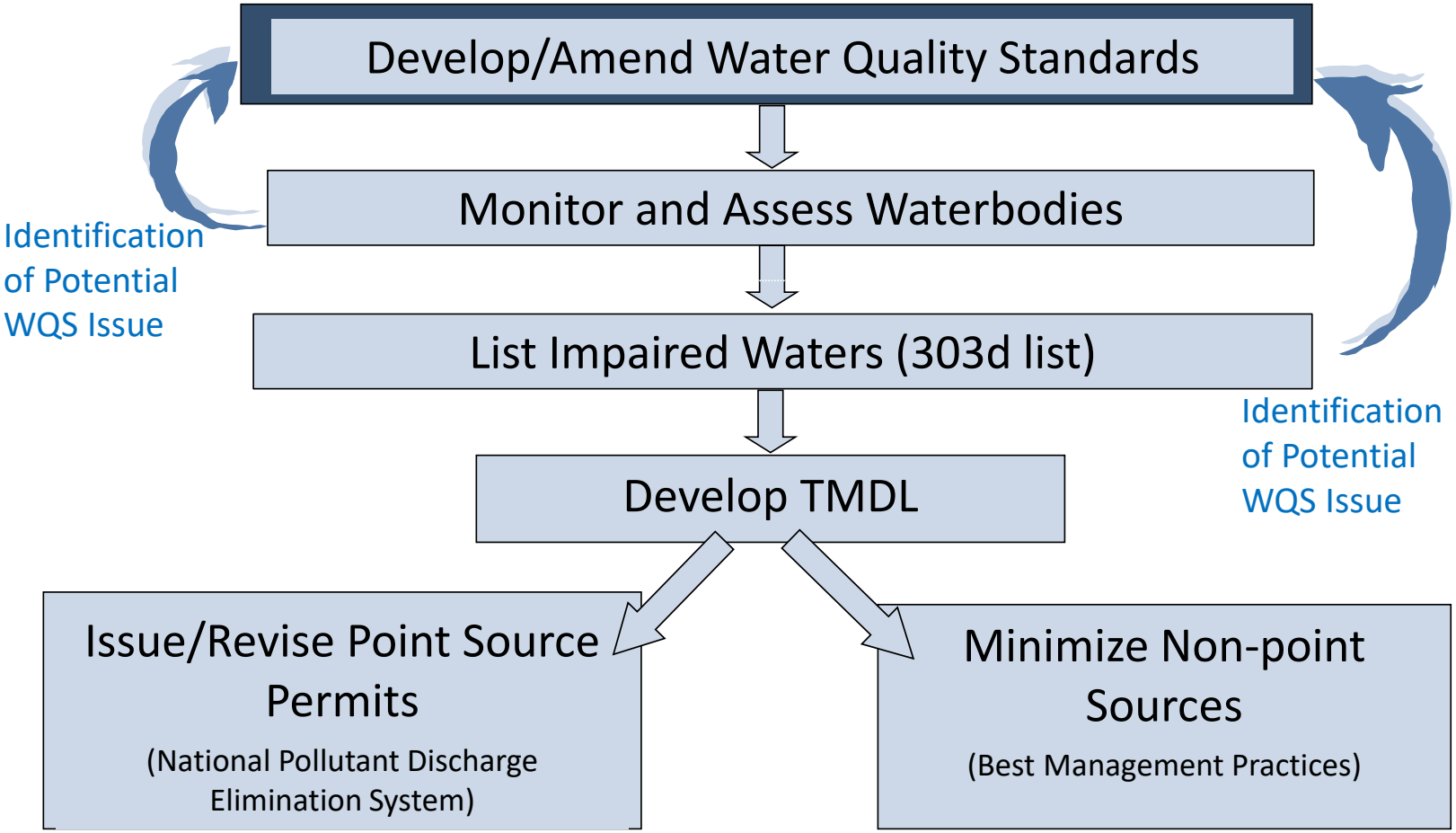
Numeric

Apply to particular designated uses

Narrative

Apply to all waters

Clean Water Act Framework

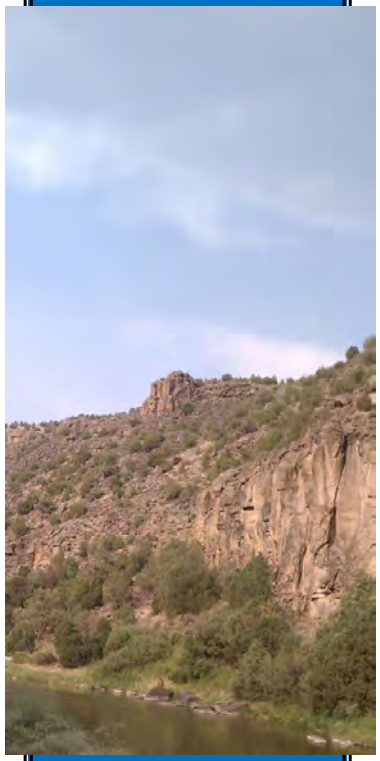


II. Proposed Amendments

Review Process

- Evaluation of needs
- Ranking of proposed amendments
  - **Tier I**- Required to be reviewed for Triennial
  - **Tier II**-Can only be updated during a Triennial and implications for implementing WQS if change not made at this time
  - **Tier III**-Can only be updated during a Triennial but no direct implications for implementing WQS if change not made at this time
  - **Tier IV**-Can be made outside the Triennial
- Prioritization
- Verification of information in sections
- Evaluation of history and supporting evidence for amendment
- Final identification of actions for this Triennial

Changes Being Proposed



Rio Grande at John Dunn's Bridge, 2011

- Objective
- Definitions
- Amendments associated with providing greater consistency and clarity
- Amendments to clarify regulatory processes
- Designated Uses as a result of Existing Uses
- Numeric Criteria

20.6.4.6 NMAC Objective

Effects of Climate Change on Water Quality

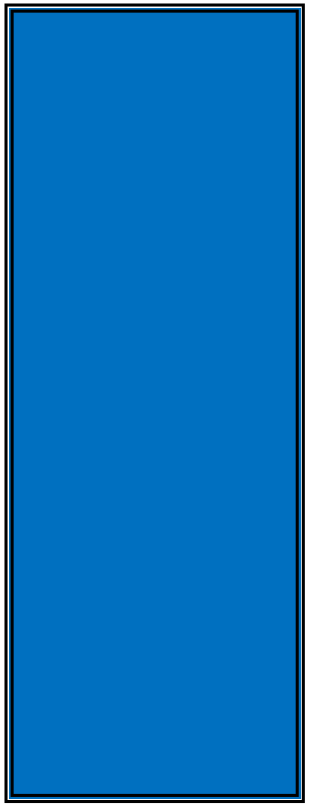
Erosion

Extreme Events

Habitat Loss and
Loss of Property

Definition Name	Type of Change	Reasoning
4Q3	New	Defines the critical low flow needed to develop point source discharge requirements
Attainable Use	Amendment	Provides consistency with federal terminology and clarifies that the attainable use may or may not be as stringent as the designated use
Baseflow	New	Provides clarification to term as referenced
Climate Change	New	Provides definition as term is used specifically in 20.6.4 NMAC
Contaminants of Emerging Concern	New	Codifies use of term used both currently as well as historically
Effluent Dominated	New	Clarify the application of water quality standards as they pertain to certain permitted discharges
Hardness	New	Codifies use of term used both currently as well as historically
Harmonic Mean Flow	New	Moving from 20.6.4.11(B)(1) for consistency purposes
Limited Aquatic Life	Amendment	Clarifying that this designated use is not limited to just ephemeral or intermittent waters
Marginal Coldwater	Amendment	Clarifying that this designated use is not limited to just ephemeral or intermittent waters and includes conditions distinguishing it from the designated coldwater aquatic life use
Persistent Toxic Pollutants	New	Clarifying the meaning as referenced in 20.6.4.900(J) NMAC
Surface Waters of the State	Amendment	Reformatting for readability and referencing
Unclassified Waters of the State	New	Moving from 20.6.4.11(H) for consistency purposes

General Amendments for Clarity and Consistency Purposes



- Antidegradation Policy (20.6.4.8 NMAC)
- Outstanding National Resource Waters (20.6.4.9 NMAC)
- Applicability of Water Quality Standards (20.6.4.11 NMAC)
- Compliance with Water Quality Standards (20.6.4.12 NMAC)
- General Criteria (20.6.4.13 NMAC)
- Classified waters (Sections 108, 115, 206, 208, 209, 215, 220, 307 and 309, 311 and 312, 405, and 408)
- Criteria Applicable to Existing, Designated or Attainable Uses (20.6.4.900 NMAC)
- Publication References (20.6.4.901 NMAC)

Review of Standards (20.6.4.10 NMAC)

20.6.4.10 REVIEW OF STANDARDS; NEED FOR ADDITIONAL STUDIES:

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

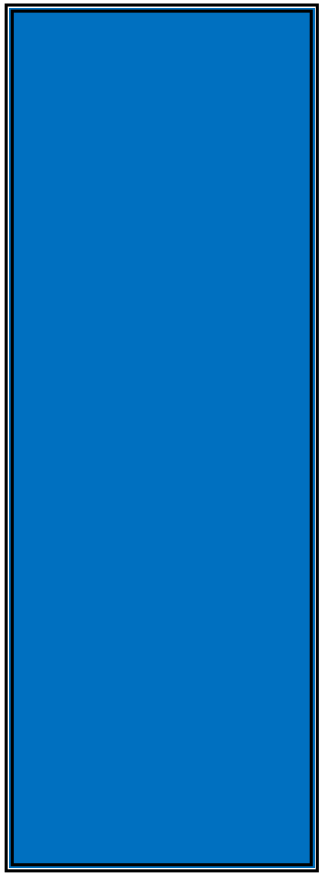
B. In accordance with 40 CFR 131.10(i), when an existing use, as defined in 20.6.4.7 NMAC, is more stringent than the designated use and supporting evidence demonstrates the presence of that use, the designated use shall be amended to be no less stringent than the existing use.

[~~B.~~] C. It is recognized that, in some cases, numeric criteria [~~have been adopted that reflect use designations rather than existing conditions of surface waters of the state.~~] **for a particular designated use may not adequately reflect the local conditions and the adaptive nature of particular organisms to utilize a water without harm. In these cases, a water quality criterion may be modified to reflect the natural condition of a specific waterbody**. [~~Narrative criteria are required for many constituents because accurate data on background levels are lacking. More intensive water quality monitoring may identify surface waters of the state where existing quality is considerably better than the established criteria.~~] When justified by sufficient data and information, **a numeric** [~~the~~] water quality [~~criteria~~]**criterion** [~~will~~] **may** be **adopted or** modified to **a less stringent criterion and still protect the attainable uses of the waterbody. The modification of the criterion does not necessarily change the designated use. The removal or amendment of a designated use to a less stringent use can only be done through a use attainability analysis in accordance with 20.6.4.15 NMAC.**

Use Attainability Analysis (20.6.4.15 NMAC)

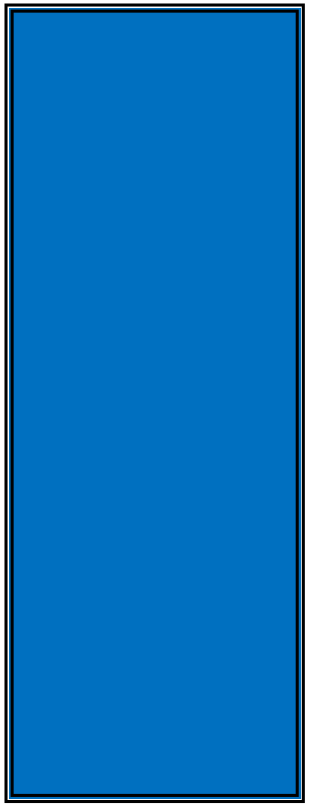
- Applicability of the Hydrology Protocol
- Determining highest attainable use
- Process for removal and replacement of a designated use
- Process for Use Attainability Analysis by another entity

Existing Use Analysis Being Prepared by the Department



- Recreational designated use changes based on existing use (Sections 103, 116, 204 and 206)
- Designated Uses for waters within Los Alamos National Laboratory (Sections 126, 128 and 140)

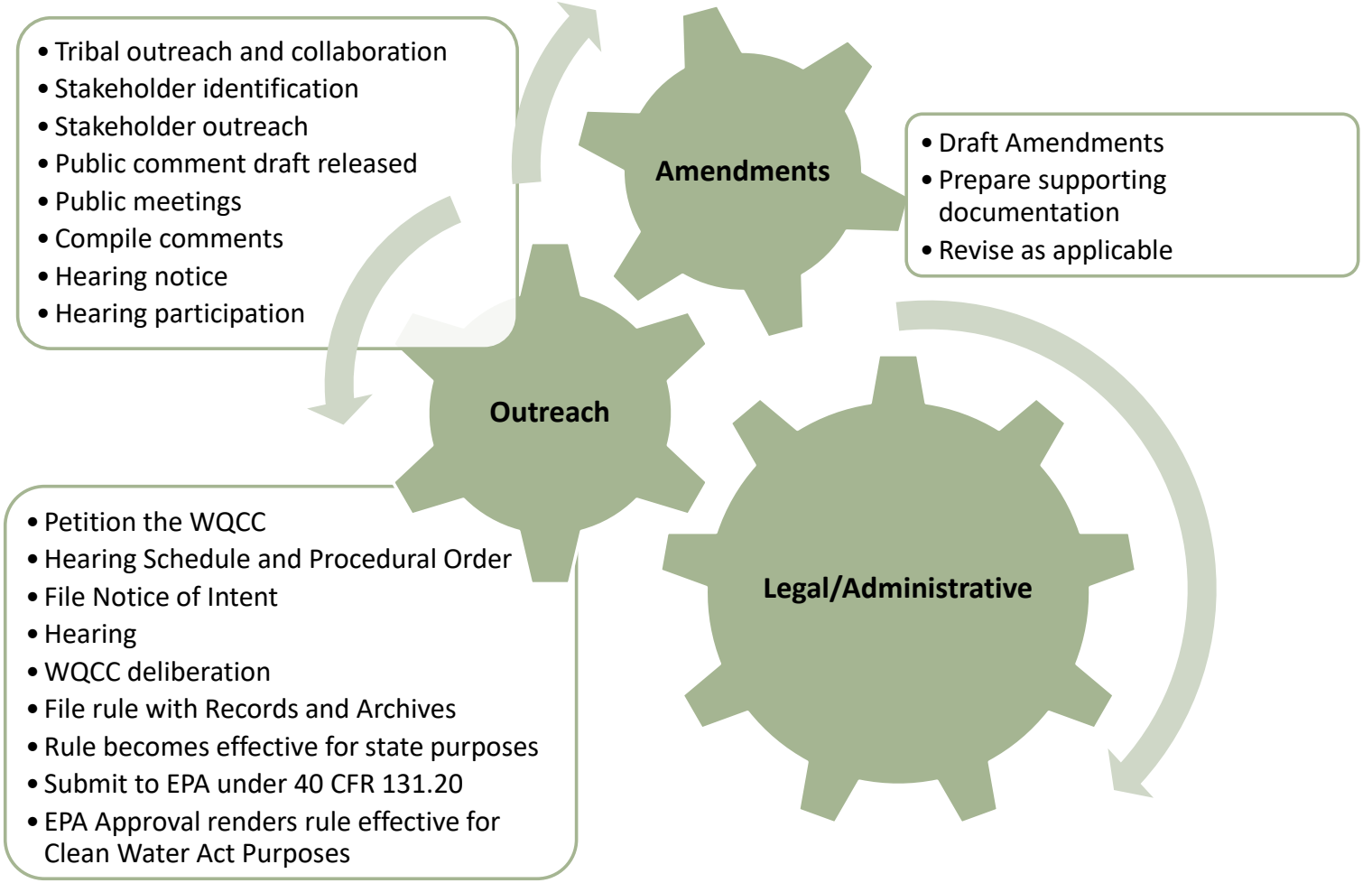
Criteria Applicable to Existing, Designated or Attainable Uses (20.6.4.900 NMAC)



- Primary Contact Criteria
- Aluminum (dissolved and total recoverable)
- Updates to the aquatic life and human health criteria
- Updates to ammonia criteria

III. Process and Tentative Timelines

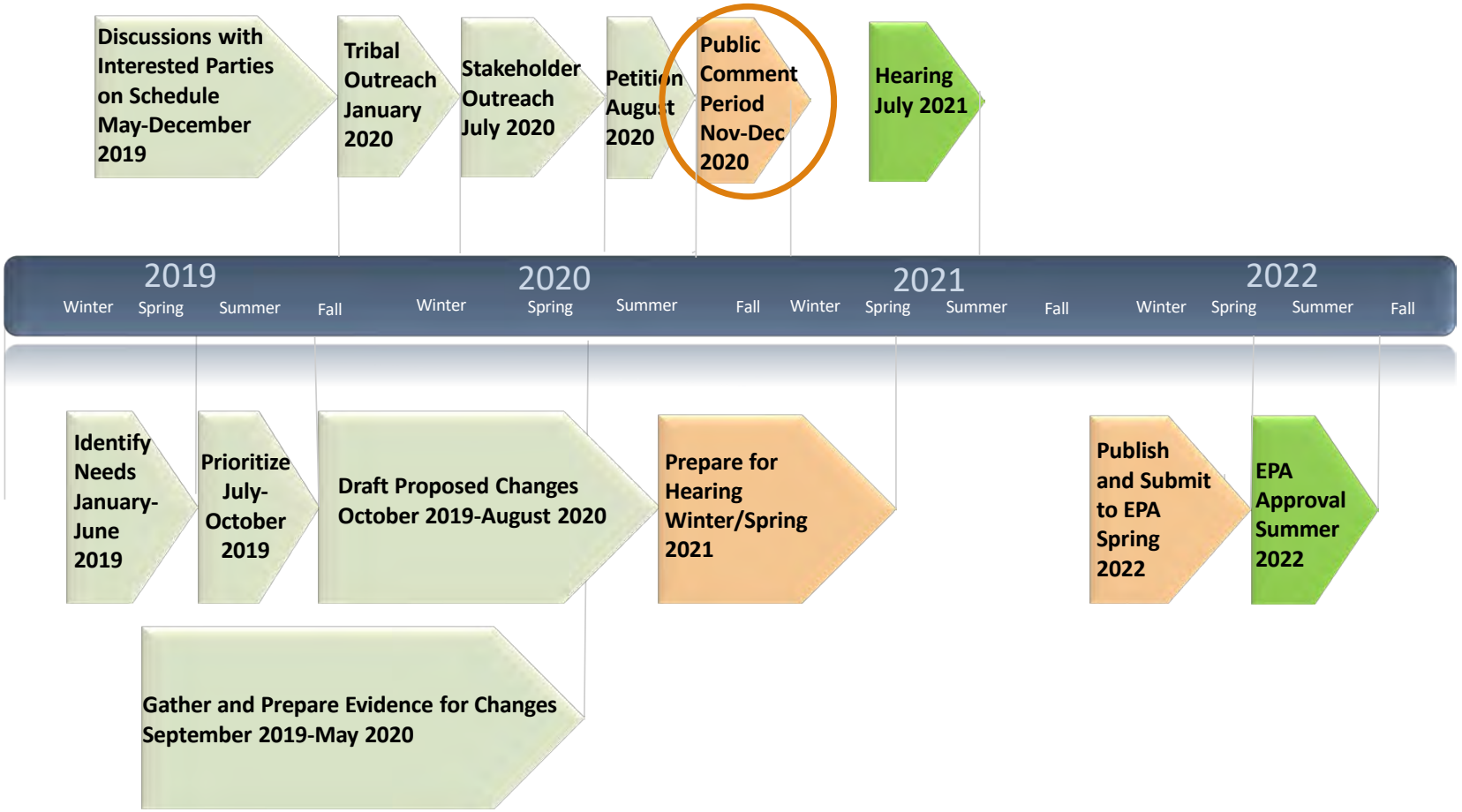
Rulemaking Process



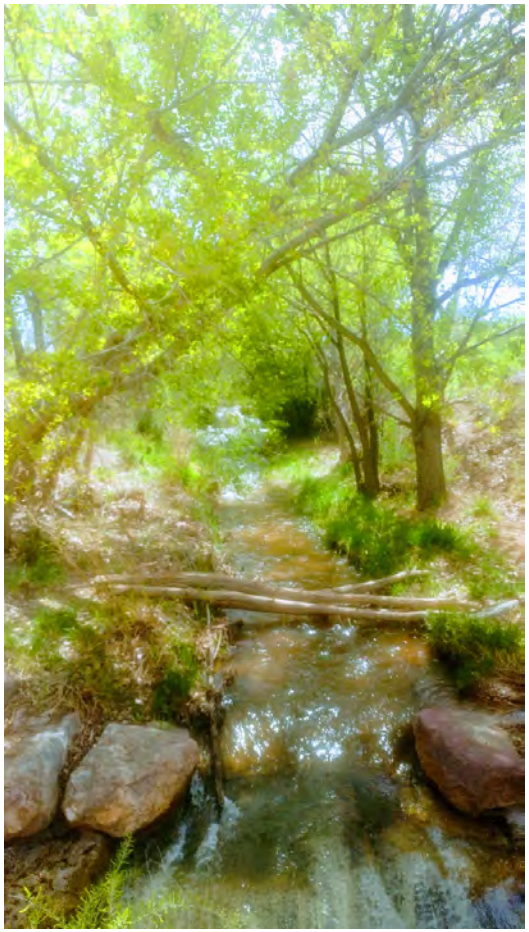
Administrative Requirements

Task	Responsible Entity	Estimated Timeline
Outreach in accordance with the WQMP/CPP	NMED/SWQB	July 2020
Draft out for public review and comment	NMED/SWQB	November 2020
Petition to Commission for Hearing Date	NMED/SWQB	August 2020
60-day hearing notice in State Register	NMED/SWQB	February 2021
Submittal of Notice of Intent to Provide Technical Testimony	All	April 2021
Hearing	All	July 2021
Deliberation	WQCC	~Winter 2022
Approval and Statement of Reasons by Commission	WQCC	~Winter 2022
Publish final rule in State Register with effective date	NMED/SWQB	~Spring 2022
Submittal to EPA Region 6 for review and approval	NMED/SWQB	~Spring 2022
EPA Approval for purposes of the Clean Water Act	EPA Region 6	~Summer 2022
Notification of Approval	NMED/SWQB	~Summer 2022

Tentative Timeline



Questions/Discussion



Written Comments

Wednesday, December 2, 2020

Jennifer Fullam

Standards, Planning & Reporting Team Leader

Surface Water Quality Bureau

New Mexico Environment Department

jennifer.fullam@state.nm.us

https://www.env.nm.gov/surface-water-quality/wqs/

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM
DALLAS, TX 75202-2733

December 22, 2020

Jennifer Fullam
Standards, Planning & Reporting Team Leader
Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr.
Santa Fe, NM 87505

Re: New Mexico Environment Department 2020 Triennial Review

Dear Ms. Fullam:

In response to the New Mexico Environment Department (NMED) announcement and extended public comment period on proposed revisions to the New Mexico *Standards for Interstate and Intrastate Surface Waters*, 20.6.4 New Mexico Administrative Code (NMAC), the Environmental Protection Agency (EPA) Region 6 would like provide comments and recommendations as part of the state's 2020 triennial review process.

The NMED's proposal includes both substantive and non-substantive revisions to New Mexico's water quality standards. The EPA has provided comments and recommendations on the substantive revisions where appropriate. The substantive revisions included definitions that influence implementation, regulatory segment and designated use determinations, and a number of new and revised criteria. The comments and recommendations provided in the enclosed document are intended to address these and other complex issues that may need to be addressed in incremental stages through the state's water quality standards and associated implementation over time. We would like to encourage discussions about these recommendations and suggestions as part the current and future water quality standards program-related planning. Where non-substantive revisions occur, typically grammatical, renumbering or other minor changes that do not alter the context or meaning of a provision, comments are typically necessary.

It should be noted that the recommendations and suggestions provided here are preliminary and do not represent a finding under §303(c) of the Clean Water Act or Standards Regulation (40 CFR 131). Any decisions on new and revised water quality standards will be made by the EPA Region 6 following their adoption by the New Mexico Water Quality Control Commission and submission to the Region.

The EPA would also like to take this opportunity to commend the NMED and the Surface Water Quality Board's efforts in the continuing development of New Mexico's water quality standards program. I look forward to continuing work with you and your staff on the protection of New Mexico's water resources. If you have any questions, please contact me or Russell Nelson at nelson.russell@epa.gov or (214) 665-6646.

Sincerely,

Richard A. Wooster

Richard Wooster
Chief
Water Quality Protection Section

Enclosure

cc: Shelly Lemon, Chief, Surface Water Quality Bureau, New Mexico Environment Department (via email to Shelly.Lemon@state.nm.us)

Kris Barrios, Program Manager - Monitoring, Assessment, and Standards Section, New Mexico Environment Department, (via email to Kristopher.Barrios@state.nm.us)

EPA COMMENTS ON THE NEW MEXICO ENVIRONMENT DEPARTMENT'S

PROPOSED TRIENNIAL REVISIONS TO THE STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS (20.6.4 NMAC)

The following detail the Environmental Protection Agency's (EPA) comments and recommendations on the New Mexico Environment Department's (NMED) proposed revisions to the state's Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC). It should be noted that the comments and recommendations provided here or in any enclosures are preliminary and do not represent a finding under Section 303(c) of the Clean Water Act (CWA) or the Standards Regulation (40 CFR 131). Any decisions on new and revised water quality standards will be made by the EPA following their adoption and submission to Region 6 for review by the New Mexico Water Quality Control Commission (WQCC or Commission).

General Comments

As cited in new proposed language at NMAC 20.6.4.10(A), § 303(c)(1) of the CWA requires that "the Governor of a State or the State water pollution control agency of such State shall from time to time (but at least once each three year period beginning with October 18, 1972) hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards." The CWA requirement means that for a state's review to be considered a triennial review, the state must open the entirety of a state's water quality standard(s) (WQS) and solicit comments on the entire document.

For future triennial reviews, the EPA recommends that the NMED ensure a hearing that is open to the general public for the purpose of reviewing New Mexico's WQS is held three years from the date of the state's prior hearing to review its WQS to meet the requirement in § 303(c)(1) of the CWA. The purpose of this review is to, at a minimum, identify WQS changes necessary to meet the requirements of the CWA. This includes the requirement in 40 CFR § 131.20(a) to re-examining any waterbody segment with designated uses less than the CWA § 101(a)(2) uses to determine if those designations are still appropriate.

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

20.6.4.6 OBJECTIVE:
D. In accordance with Executive Order on Addressing Climate Change and Energy Waste Prevention (2019-003), these standards serve to address the inherent threats to water quality due to climate change by setting water quality goals and fostering resiliency.
[20.6.4.6 NMAC - Rp 20 NMAC 6.1.1006, 10/12/2000; A, 5/23/2005; A, XX/XX/XXXX]

The EPA supports NMED's commitment to addressing threats to water quality consistent with the statewide climate strategy outlined in the Governor's Executive Order referenced in this provision.

20.6.4.7 DEFINITIONS: Terms defined in the New Mexico Water Quality Act, but not defined in this part will have the meaning given in the Water Quality Act.
A. Terms beginning with numerals or the letter "A," and abbreviations for units.
(1) "4Q3" means the critical low flow as determined by the minimum average flow over four consecutive days that occurs with a frequency of once in three years.

As described in Chapter 5 of the EPA's WQS Handbook, referring to the Technical Support Document for Water Quality Based Controls (1991) and Appendix D of the TSD, the EPA describes and recommends two methods for calculating acceptable critical low-flow values: the traditional hydrologically based method developed by the United States Geological Survey (USGS) and a biologically based method developed by the EPA. The hydrologically based critical low-flow value determined statistically using probability and extreme values for acute and chronic criteria (1Q10 and 7Q10), and the biologically based critical low flow is determined empirically using the specific duration and frequency associated with the criterion (1B3 and 4B3). The Handbook notes that when a criterion specifies a four-day average concentration that should not be exceeded more than once every three years, this condition should not be interpreted as implying that a 4Q3 low flow is appropriate for use as the hydrologically based critical low-flow value for assessing impacts on the receiving water.

[~~(7)~~](8) "Attainable Use**"** means a use that is achievable by the imposition of effluent limits required under sections 301(b) and 306 of the federal Clean Water Act and implementation of cost-effective and reasonable best management practices for nonpoint source control. An attainable use may or may not be as stringent as the designated use.

The revisions to this definition remain generally consistent with Chapter 2 of the EPA's Water Quality Standards Handbook and has no comment on these revisions.

B. Terms beginning with the letter "B".

(1) "Baseflow" refers to the sustained flow volume of a stream or river. In natural systems, baseflow is comprised from regional groundwater inflow and local shallow subsurface inflow that is temporarily stored in the watershed during snowmelt and rain events and slowly released to the stream or river over time. In effluent dominated systems, baseflow is comprised predominantly from effluent with little to no subsurface contributions. Baseflow in both scenarios is critical for sustaining flow in streams and rivers over seasonal and longer timeframes.

This definition appears intended to define baseflow conditions specific not only for ephemeral streams, but more specifically to support the definition for effluent dominated streams. Given that as this definition itself states, baseflow may be comprised of regional groundwater inflow and local shallow subsurface inflow that is temporarily stored in the watershed and slowly released to the stream or river over time, the definition becomes inconsistent by stating that in effluent dominated systems, baseflow is comprised predominantly from effluent with little to no subsurface contributions. Baseflow in both scenarios is critical for sustaining flow in streams and rivers over seasonal and longer timeframes. The EPA recommends that "with little to no subsurface contributions" be rephrased to "with limited subsurface contributions."

C. Terms beginning with the letter "C".

(4) "Climate change" refers to any significant change in the measures of climate lasting for an extended period of time and includes major changes in temperature, precipitation, wind patterns or other effects, that occur over several decades or longer.

The EPA has no comment on this definition.

(7) "Contaminants of emerging concern" refers to water contaminants, including pharmaceuticals and personal care products, that may cause ecological or human health impacts at low concentrations. Contaminants of emerging concern are 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.

The EPA has no comment on this revision.

E. Terms beginning with the letter "E".

(1) "E. coli" means the bacteria Escherichia coli.

(2) "Effluent dominated" refers to a tributary that has, over a 12-month average, more than three-quarters of its baseflow attributed to discharges from a permitted effluent discharge. Waters that are effluent dominated are of significant value to providing aquatic life habitat but are not intended for primary contact.

The EPA recommends replacing the reference to "tributary" to "water." EPA recommends deleting or revising the last sentence of this proposed new definition. EPA considers the same standards for water quality applicable to effluent-dominated waters as to non-effluent-dominated waters, including primary contact recreation and other designated uses from CWA section 101(a)(2), unless a use attainability analysis supports a use downgrade consistent with one of the six factors at 40 CFR 131.10(g).

H. Terms beginning with the letter "H".

(1) "Hardness" means the measure of calcium and magnesium salts in water expressed as dissolved calcium carbonate (CaCO3) unless otherwise noted.

The EPA has no comment on the inclusion of this definition.

(2) "Harmonic mean flow" is the number of daily flow measurements divided by the sum of the reciprocals of the flows; that is, it is the reciprocal of the arithmetic mean of reciprocal daily flow measurements consistent with the equations in Paragraph (1) of Subsection B of 20.6.4.11 NMAC.

The EPA has no comment on the inclusion of this definition.

L. Terms beginning with the letter "L".

(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, [~~ephemeral or intermittent water,~~] high turbidity, fluctuating temperature, low dissolved oxygen content or unique chemical characteristics.

Deleting the reference to "ephemeral or intermittent water" leaves the definition less specific but does not alter the meaning. The EPA recommends considering using the phrase "…changes, e.g. flow, high turbidity…"

M. Terms beginning with the letter "M".

(1) "Marginal coldwater" in reference to an aquatic life use means that natural [~~intermittent or low-flows, or other natural habitat~~] conditions severely limit maintenance of a coldwater aquatic life population during at least some portion of the year or historical data indicate that the temperature [~~in~~] of the surface water of the state may exceed that which could continually support aquatic life adapted to coldwater[~~25°C (77°F)~~].

Similar to the revisions to the "limited aquatic life," striking the reference to flow leaves this definition less specific. In addition, the inclusion of the narrative referring to coldwater aquatic life and striking the low-end of applicable water temperature does not affect the understanding of this definition.

P. Terms beginning with the letter "P".

(3) "Persistent toxic pollutants" means pollutants, generally organic, that are resistant to

environmental degradation through chemical, biological and photolytic processes and can bioaccumulate in organisms, causing adverse impacts on human health and aquatic life.

The EPA supports the inclusion of this definition.

S. Terms beginning with the letter "S".

(5) "Surface water(s) of the state"

(i) means all surface waters situated wholly or partly within or bordering upon the state, including the following:

(1) lakes[,];
(2) rivers[,];
(3) streams (including intermittent and ephemeral streams) [,];
(4) mudflats[,];
(5) sandflats[,];
(6) wetlands[,];
(7) sloughs[,];
(8) prairie potholes [,];
(9) wet meadows[,];
(10) playa lakes[,];
(11) reservoirs[,]; [~~or~~] and
(12) natural ponds.

(ii) [~~Surface waters of the state~~] also means all tributaries of such waters, including adjacent wetlands, any manmade bodies of water that were originally created in surface waters of the state or resulted in the impoundment of surface waters of the state, and any "waters of the United States" as defined under the Clean Water Act that are not included in the preceding description.

(iii) [~~Surface waters of the state~~] does not include private waters that do not combine with other surface or subsurface water or any water under tribal regulatory jurisdiction pursuant to Section 518 of the Clean Water Act. Waste treatment systems, including treatment ponds or lagoons designed and actively used to meet requirements of the Clean Water Act (other than cooling ponds as defined in 40 CFR Part 423.11(m) that also meet the criteria of this definition), are not surface waters of the state, unless they were originally created in surface waters of the state or resulted in the impoundment of surface waters of the state.

The EPA supports the inclusion of the term "ephemeral" in this definition. Other formatting changes, including striking the term "Surface waters of the state" in sections (ii) and (iii) are not substantive.

20.6.4.10 REVIEW OF STANDARDS; NEED FOR ADDITIONAL STUDIES:

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

B. 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.

[~~B.~~] C. It is recognized that, in some cases, numeric criteria [~~have been adopted that reflect use designations rather than existing conditions of surface waters of the state.~~] for a particular designated use may not adequately reflect the local conditions and the adaptive nature of particular organisms to utilize a water without harm. In these cases, a water quality criterion may be modified to reflect the natural condition of a specific waterbody. [~~Narrative criteria are required for many constituents because accurate data on background levels are lacking. More intensive water quality monitoring may identify surface waters of the state where existing quality is considerably better than the established criteria.~~] When justified by sufficient data and information, a numeric [~~the~~] water quality [~~criteria~~]criterion [~~will~~]may be adopted or modified to a less stringent criterion and still protect the attainable uses of the waterbody. The modification of the criterion does not necessarily change the designated use. The removal or amendment of a designated use to a less stringent use can only be done through a use attainability analysis in accordance with 20.6.4.15 NMAC.

[~~F.~~]G. Temporary standards[~~:~~].

The proposed revisions to 20.6.4.10 A and B clarify the required process the NMED will use in amending a designated use where the existing use is more stringent than the current designated consistent with 40 C.F.R. 131.10(i).

Although the NMED did not propose any revisions to subparagraph G. Temporary standards, the EPA recommends that this provision be revised to clarify that work plans should be designed to meet the highest attainable condition rather than the underlying standard, consistent with 40 CFR 131.14.

20.6.4.11 APPLICABILITY OF WATER QUALITY STANDARDS:

A. [RESERVED]

B. Critical low flow: The critical low flow of a stream at a particular site shall be used in developing point source discharge permit requirements to meet numeric criteria set in 20.6.4.97 through 20.6.4.900 NMAC and Subsection F of 20.6.4.13 NMAC.

(1) For human health-organism only criteria, the critical low flow is the harmonic mean flow[~~; "harmonic mean flow" is the number of daily flow measurements divided by the sum of the reciprocals of the flows; that is, it is the reciprocal of the mean of reciprocals~~]. For ephemeral waters the calculation shall be based upon the nonzero flow intervals and modified by including a factor to adjust for the proportion of intervals with zero flow. The equations are as follows:

The deletion of the definition of harmonic mean flow here is nonsubstantive given that the term has been defined previously.

[~~**H. Unclassified waters of the state:** Unclassified waters of the state are those surface waters of the state not identified in 20.6.4.101 through 20.6.4.899 NMAC. An unclassified surface water of the state is presumed to support the uses specified in Section 101(a)(2) of the federal Clean Water Act. As such, it is subject to 20.6.4.98 NMAC if nonperennial or subject to 20.6.4.99 NMAC if perennial. The commission may include an ephemeral unclassified surface water of the state under 20.6.4.97 NMAC only if a use attainability analysis demonstrates pursuant to 20.6.4.15 NMAC that attainment of Section 101(a)(2) uses is not feasible.~~]

The deletion of the definition of "unclassified waters of the state" here is nonsubstantive given that the term has been defined previously.

20.6.4.12 COMPLIANCE WITH WATER QUALITY STANDARDS:

G. Compliance schedules: [~~It shall be the policy of the commission to allow on a case-by-case basis t~~]The commission may allow the inclusion of a schedule of compliance in a NPDES permit issued to an existing facility on a case-by-case basis. Such schedule of compliance will be for the purpose of providing a permittee with adequate time to make treatment facility modifications necessary to comply with water quality based permit limitations determined to be necessary to implement new or revised water quality standards or wasteload allocation. Compliance schedules may be included in NPDES permits at the time of permit renewal or modification and shall be written to require compliance at the earliest practicable time. Compliance schedules shall also specify milestone dates so as to measure progress towards final project completion (e.g., design completion, construction start, construction completion, date of compliance).

The rephrasing here is nonsubstantive – no comment is necessary.

20.6.4.13 GENERAL CRITERIA:

F. Toxic pollutants:

(1) Except as provided in 20.6.4.16 NMAC, surface waters of the state shall be free of toxic pollutants, including but not limited to contaminants of emerging concern and those toxic pollutants defined in 20.6.2 NMAC, from other than natural causes in amounts, concentrations or combinations that affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or that will or can reasonably be expected

to bioaccumulate in tissues of fish, shellfish and other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers of aquatic organisms.

The inclusion of this language is consistent with the addition of the definition of persistent toxic pollutants.

20.6.4.15 USE ATTAINABILITY ANALYSIS:

A. Authority to remove a designated use. A use attainability analysis is a scientific study conducted for the purpose of assessing the factors affecting the attainment of a use. Whenever a use attainability analysis is conducted, it shall be subject to the requirements and limitations set forth in 40 CFR Part 131, Water Quality Standards; specifically, Subsections 131.3(g), 131.10(g), 131.10(h) and 131.10(j) shall be applicable.

(1) The commission may remove a designated use, that is not an existing use, specified in Section 101(a)(2) of the federal Clean Water Act or adopt subcategories of a Section 101(a)(2) of the federal Clean Water Act use requiring less stringent criteria only if a use attainability analysis demonstrates that attaining the use is not feasible because of a factor listed in 40 CFR 131.10(g). Section 101(a)(2) of the federal Clean Water Act uses, which refer to the protection and propagation of fish, shellfish and wildlife and recreation in and on the water, are also specified in Subsection B of 20.6.4.6 NMAC.

(2) A designated use cannot be removed if it is an existing use unless a use requiring more stringent criteria is designated.

B. The mechanism to remove a designated use. A use attainability analysis shall assess the physical, chemical, biological, economic or other factors affecting the attainment of a use. The analysis shall rely on scientifically defensible methods such as the methods described in the following documents:

(1) *Technical Support Manual: Waterbody Surveys And Assessments For Conducting Use Attainability Analyses*, volume I (November 1983) and volume III (November 1984) or latest editions, United States environmental protection agency, office of water, regulations and standards, Washington, D.C., for the evaluation of aquatic life or wildlife uses;

(2) the department's *Hydrology Protocol*, latest edition, approved by the commission, for identifying ephemeral, ~~[and]~~ intermittent, and perennial waters; or

(3) *Interim Economic Guidance For Water Quality Standards - Workbook*, March 1995, United States environmental protection agency, office of water, Washington, D.C. for evaluating economic impacts.

C. Determining the highest attainable use. If the use attainability analysis determines that the designated use is not attainable based on one of the factors in 40 CFR 131.10(g), the use attainability analysis shall then determine the highest attainable use for the protection and propagation of fish, shellfish and wildlife and recreation in and on the water based on methods described in Subsection B of this section.

D. Process to remove a designated use and establish the highest attainable use.

(1) The process for developing a use attainability analysis and petitioning the commission for removing a designated use and establishing the highest attainable use shall be done in accordance with the State's current *Water Quality Management Plan/Continuing Planning Process*.

~~[C.]~~(2) 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 process in accordance with the State's current *Water Quality Management Plan/Continuing Planning Process*. The following elements must be met for the expedited use attainability analysis process to be authorized and implemented:

(a) The department is the primary investigator of the use attainability analysis;

(b) The use attainability analysis determined, through the application of the *Hydrology Protocol*, that the water being investigated is ephemeral and has no effluent discharges of sufficient volume that could compensate for the low-flow;

(c) The use attainability analysis determined that the existing uses of the water being investigated are not more stringent than those in 20.6.4.97 NMAC;

(d) The designated uses in 20.6.4.97 NMAC have been determined to be the highest attainable uses for the water being analyzed;

(e) The department ~~[shall]~~posted the use attainability analysis on its water quality standards website and ~~[notify]~~ notified its interested parties list of a 30-day public comment period~~.~~;

(f) ~~[After reviewing]~~The department reviewed and responded to any comments received during the

30-day public comment period~~,~~; and

(g) The department [~~may proceed by submitting~~]submitted the use attainability analysis and response to comments to region 6 EPA for technical approval.

If technical approval is granted by region 6 EPA, the water shall be subject to 20.6.4.97 NMAC for federal Clean Water Act purposes. The use attainability analysis, the technical approval, and the applicability of 20.6.4.97 NMAC to the water shall be posted on the department's water quality standards website. The department shall periodically petition the commission to list ephemeral waters under Subsection C of 20.6.4.97 NMAC and to incorporate changes to classified segments as appropriate.

[~~D.~~] E. Use attainability analysis conducted by an entity other than the department. Any person may submit notice to the department stating their intent to conduct a use attainability analysis. The proponent shall provide such notice along with [~~develop~~]a work plan supporting [~~to conduct~~]the development of a use attainability analysis[~~, and shall submit the work plan~~] to the department and region 6 EPA for review and comment. Upon approval of the work plan by the department, the proponent shall conduct the use attainability analysis and implement public noticing in accordance with the approved work plan. The work plan shall identify, at a minimum, the waterbody of concern and the reasoning for conducting a use attainability analysis, the [~~scope~~]source and validity of data [~~currently available and the scope of data to be gathered~~]to be used to demonstrate that the current use is not attainable, the factors in 40 CFR 131.10(g) affecting [~~use~~]the attainment of that use, [~~that will be analyzed~~]a description of the data being proposed to be used to demonstrate the highest attainable use, [~~and~~]the provisions for consultation with appropriate state and federal agencies, description of how stakeholders and potentially affected tribes will be identified and engaged, a description of the public notice mechanisms to be employed and [~~consultation with appropriate state and federal agencies~~]the expected timelines and administrative involvement with petitioning for a rulemaking, pending the outcome of the use attainability analysis. [~~Upon approval of the work plan by the department, the proponent shall conduct the use attainability analysis in accordance with the approved work plan. The cost of such analysis shall be the responsibility of the proponent.~~] Upon completion of the use attainability analysis, the proponent shall submit the data, findings and conclusions to the department, and provide public notice of the use attainability analysis in accordance with the approved work plan. Pending the conclusions of the use attainability analysis and as described in the approved work plan, [~~T~~]the department or the proponent may petition the commission to modify the designated use [~~if the conclusions of the analysis support such action~~]. The cost of such use attainability analysis shall be the responsibility of the proponent. Subsequent costs associated with the administrative rulemaking process shall be the responsibility of the petitioner.
[20.6.4.15 NMAC - Rp 20 NMAC 6.1.1107, 10/12/2000; Rn, 20.6.4.14 NMAC, 5/23/2005; A, 5/23/2005; A, 7/17/2005; A, 12/1/2010; A, XX/XX/XXXX]

The revised language appears generally consistent with New Mexico's recently revised Water Quality Management Plan/Continuing Planning Process (WQMP/CPP) document that the EPA approved on October 23, 2020. However, the EPA recommends that the reference to "technical approval" by the EPA be struck from this provision and the WQMP/CPP during the next periodic update of that document. The EPA specifically recommends deleting 20.6.4.15(D)(g) and revising the phrase "If technical approval is granted by region 6 EPA" to "If EPA approves the revision under section 303(c) of the CWA,…" The EPA encourages the NMED to provide the EPA with the opportunity to review workplans and draft UAAs in order to discuss and resolve concerns at an early stage to expedite future 303(c) review. However, the EPA will not provide technical approval for any UAA to ensure that associated comments or recommendations are not considered a final decision or finding under §303(c) of the CWA or Water Quality Standards Regulation (40 CFR 131). The NMAC does not supersede the CWA requirement that water quality standards be adopted by the state before they can be approved by the EPA as effective for CWA purposes. Any decisions on the effectiveness of new and revised water quality standards for CWA purposes will be made by the EPA following their adoption and submission to Region 6 by the WQCC.

The EPA also recommends that the NMED extend the public comment period from 30 days to 45 days. 40 CFR Part 25.5(b) requires that the hearing notice and relevant documents for public review be provided at least 45 days in advance of the hearing, unless there are no substantial documents for review and the matter is not substantive or controversial.

20.6.4.97 EPHEMERAL WATERS: Ephemeral surface waters of the state as identified below and additional ephemeral waters as identified on the department's water quality standards website pursuant to Paragraph (2) of **Subsection** [~~C~~]D **of 20.6.4.15 NMAC are subject to the designated uses and criteria as specified in this section. Ephemeral waters classified in 20.6.4.101-899 NMAC are subject to the designated uses and criteria as specified in those sections.**

The rephrasing here is nonsubstantive – no comment is necessary.

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

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

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

C. Remarks: flow in this reach of the Rio Grande main stem is dependent upon release from Elephant Butte dam.

[20.6.4.103 NMAC - Rp 20 NMAC 6.1.2103, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

The EPA supports the revision to the primary contact use and the applicable criteria for segment 20.6.4.103. This is consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.105 RIO GRANDE BASIN: [-] The main stem of the Rio Grande from the headwaters of Elephant Butte reservoir upstream to Alameda bridge (Corrales bridge), excluding waters on Isleta pueblo.

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

B. Criteria:

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

(2) At mean monthly flows above 100 cfs, the monthly average concentration for: TDS 1,500 mg/L or less, sulfate 500 mg/L or less and chloride 250 mg/L or less.

(3) Criteria referenced in 20.6.2.2102 NMAC, Rio Grande basin-community sewerage systems, apply if the applicability conditions in 20.6.2.2100 NMAC are met.

[20.6.4.105 NMAC - Rp 20 NMAC 6.1.2105, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

The new language here is specific to New Mexico's Part 2 regulations for Ground and Surface Water Protection and is not related to surface water quality standards regulated under section 303(c) of the CWA. However, since the NMED often conditions Pollution Discharge Elimination System (NPDES) permits through its 401-certification authority on inclusion of standards for groundwater and surface water protection, it is relevant to the EPA NPDES permitting program. As a result, the EPA recommends that the NMED provide specific guidance for NPDES permit writers in implementing the criteria in 20.6.2.2192 NMAC.

20.6.4.106 RIO GRANDE BASIN: [-] The main stem of the Rio Grande from Alameda bridge (Corrales bridge) upstream to the Angostura diversion works, excluding waters on Santa Ana pueblo, and intermittent water in the Jemez river below the Jemez pueblo boundary, excluding waters on Santa Ana and Zia pueblos, that enters the main stem of the Rio Grande. Portions of the Rio Grande in this segment are under the joint jurisdiction of the state and Sandia pueblo.

A. Designated uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact; and public water supply on the Rio Grande.

B. Criteria:

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

designated uses.

(2) At mean monthly flows above 100 cfs, the monthly average concentration for: TDS 1,500 mg/L or less, sulfate 500 mg/L or less and chloride 250 mg/L or less.

(3) Criteria referenced in 20.6.2.2102, NMAC Rio Grande basin-community sewerage systems, apply if the applicability conditions in 20.6.2.2100 NMAC are met.

[20.6.4.106 NMAC - Rp 20 NMAC 6.1.2105.1, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

As noted in comments for the prior provision, the new language here is specific to New Mexico's Part 2 regulations for Ground and Surface Water Protection and is not related to surface water quality standards regulated under section 303(c) of the CWA. However, the previous comments on proposed revisions to 20.6.4.105 related to NPDES permitting remain relevant.

20.6.4.108 RIO GRANDE BASIN: [-] Perennial reaches of the Jemez river and [~~all its~~]perennial reaches of tributaries to the Jemez river above Soda dam near the town of Jemez Springs, except San Gregorio lake and Sulphur creek above its confluence with Redondo creek, and perennial reaches of the Guadalupe river and perennial reaches of [~~all its~~] tributaries to the Guadalupe river and reaches of Calaveras Canyon.

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

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 400 µS/cm or less (800 µS/cm or less on Sulphur creek); the monthly geometric mean of *E. coli* bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less; and pH within the range of 2.0 to 8.8 on Sulphur creek.

[20.6.4.108 NMAC - Rp 20 NMAC 6.1.2106, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, 7/10/2012; A, XX/XX/XXXX]

[**NOTE:** The segment covered by this section was divided effective 5/23/2005. The standards for the additional segment are under 20.6.4.124 NMAC. The standards for San Gregorio lake are in 20.6.4.134 NMAC, effective 7/10/2012]

The new language in 20.6.4.108 NMAC is intended to clarify that non-perennial tributaries to the named waters, including the Jemez River, Guadalupe River and some reaches of Calaveras Canyon are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or any non-perennial portions or non-perennial tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

20.6.4.115 RIO GRANDE BASIN: [-] The perennial reaches of Rio Vallecitos and [~~its~~]perennial reaches of tributaries to Rio Vallecitos except Hopewell lake, and perennial reaches of Rio del Oso and perennial reaches of El Rito creek above the town of El Rito.

A. Designated uses: domestic water supply, irrigation, high quality coldwater aquatic life, livestock watering, wildlife habitat and primary contact; public water supply on the Rio Vallecitos and El Rito creek.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 µS/cm or less; the monthly geometric mean of *E. coli* bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

[20.6.4.115 NMAC - Rp 20 NMAC 6.1.2112, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, 7/10/2012; A, XX/XX/XXXX]

[**NOTE:** The standards for Hopewell lake are in 20.6.4.134 NMAC, effective 7/10/2012]

The new language in 20.6.4.115 NMAC is intended to clarify that non-perennial tributaries to the Rio Vallecitos are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or classification the non-perennial tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

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

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

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

[20.6.4.116 NMAC - Rp 20 NMAC 6.1.2113, 10/12/2010; A, 5/23/2005; A, 12/1/2010; A, 3/2/2017; A, XX/XX/XXXX]

The EPA supports the revision to the primary contact use and the applicable criteria for segment 20.6.4.116. This is consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.126 RIO GRANDE BASIN: [-] Perennial portions of Cañon de Valle from Los Alamos national laboratory (LANL) stream gage E256 upstream to Burning Ground spring, Sandia canyon from Sigma canyon upstream to LANL NPDES outfall 001, Pajarito canyon from Arroyo de La Delfe upstream into Starmers gulch and Starmers spring[~~and~~], Water canyon from Area-A canyon upstream to State Route 501, and DP canyon, Ancho canyon, and additional perennial portions of Water canyon.

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

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

[20.6.4.126 NMAC - N, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

The revisions to 20.6.4.126 NMAC expands the description to include DP canyon, Ancho canyon and additional perennial portions of Water canyon (although the latter are not clearly defined) to those waters within lands managed by the United States Department of Energy within Los Alamos National Laboratory (LANL). This segment retains both the previously designated coldwater aquatic life and the secondary contact recreation uses. Since the perennial portions of DP canyon, Ancho canyon and additional perennial portions of Water canyon have not been previously described in a regulatory segment, the NMED/SWQB must provide a UAA supporting the secondary contact recreation use as required by 40 CFR 131.10.

20.6.4.128 RIO GRANDE BASIN: [-] Ephemeral [~~and intermittent~~]waters or ephemeral portions of waters [~~watercourses~~]within lands managed by U.S. department of energy (DOE) within LANL 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~~]. (Surface waters 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;
[20.6.4.128 NMAC - N, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]
[**NOTE:** This section was divided effective XX/XX/XXXX. The standards for the intermittent portions of watercourses within LANL are in 20.6.4.140 NMAC.]

The revisions to 20.6.4.128 NMAC strikes the term intermittent and limits the segment definition to include only the named ephemeral waters or portions of those waters within lands managed by the United States Department of Energy/LANL. The restructuring of the waters contained in this segment are listed but does not alter the previous designated uses and criteria that are applicable to the remaining named waters identified in this provision and does not require supporting documentation. The intermittent waters now excluded from this regulatory segment are now contained in the new regulatory segment 20.6.4.140 NMAC discussed below.

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 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, Pajarito canyon, Two-Mile canyon, and Water canyon. (Surface waters within lands scheduled for transfer from DOE to tribal, state or local authorities are specifically excluded.)

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

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

[20.6.4.140 NMAC - N, XX/XX/XXXX]

This new regulatory segment is the result of parsing out the non-perennial/intermittent waters or portions of waters that were previously identified in segment 20.6.4.128 NMAC. See prior comments on 20.6.4.128. Since this new segment specifies the warmwater aquatic life and primary contact designated uses, no supporting UAA would be required.

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

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

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

[20.6.4.204 NMAC - Rp 20 NMAC 6.1.2204, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]
[**NOTE:** The segment covered by this section was divided effective 5/23/2005. The standards for Avalon Reservoir are under 20.6.4.219 NMAC.]

The EPA supports the revision to the primary contact use and the applicable criteria for segment 20.6.4.204. This action is consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

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

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

B. Criteria:

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

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

[20.6.4.206 NMAC - Rp 20 NMAC 6.1.2206, 10/12/2010; A, 5/23/2005; A, 12/1/2010; A, 3/2/2017; A, XX/XX/XXXX]

[**NOTE:** This segment was divided effective XX/XX/XXXX. The standards for the main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, and perennial reaches of the Rio Hondo are under 20.6.4.231 NMAC.]

The revisions to 20.6.4.206 NMAC moves the main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, perennial reaches of North Spring river and perennial reaches of the Rio Hondo downstream of Bonney canyon to the new segment, 20.6.4.231 NMAC, reflecting the primary contact recreation use. Revisions also specify the perennial tributaries of the Rio Hondo downstream of Bonney canyon excluding the North Spring River, and retain the perennial reaches of the Rio Felix in this segment. The restructuring of the WQS applicable to the waters contained in this segment does not alter the designated uses and criteria that are applicable to the remaining named waters and does not require supporting documentation.

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

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

B. Criteria:

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

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

[20.6.4.207 NMAC - Rp 20 NMAC 6.1.2207, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

EPA supports the revision to the primary contact use and the applicable criteria for segment 20.6.4.207. This is consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.208 PECOS RIVER BASIN: [-] Perennial reaches of the Rio Peñasco above state highway 24 near Dunken and [~~its~~]perennial reaches of tributaries to the Rio Peñasco above state highway 24 near Dunken and perennial reaches of Cox canyon, perennial reaches of the Rio Bonito downstream from state highway 48 (near Angus), the Rio Ruidoso downstream of the U.S. highway 70 bridge near Seeping Springs lakes, perennial reaches of the Rio Hondo upstream from Bonney canyon and perennial reaches of Agua Chiquita.

A. Designated uses: fish culture, irrigation, livestock watering, wildlife habitat, coldwater aquatic life and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: temperature 30°C (86°F) or less, and phosphorus (unfiltered sample) less than 0.1 mg/L.

[20.6.4.208 NMAC - Rp 20 NMAC 6.1.2208, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

The revisions to 20.6.4.208 NMAC redefines the coverage of the Rio Peñasco to the perennial portions and perennial tributaries to the Rio Peñasco above Hwy 24 and adds the perennial portions of Cox canyon to clarify that non-perennial tributaries are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment any non-perennial portions or non-perennial tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

20.6.4.209 PECOS RIVER BASIN: [-] Perennial reaches of Eagle creek upstream of Alto dam to the Mescalero Apache boundary, perennial reaches of the Rio Bonito upstream of state highway 48 (near Angus) excluding Bonito lake and [~~its~~]perennial reaches of tributaries to the Rio Bonito upstream of state highway 48 (near Angus) , and perennial reaches of the Rio Ruidoso upstream of the U.S. highway 70 bridge near Seeping Springs lakes[,] above and below the Mescalero Apache boundary and [~~its~~]perennial reaches of tributaries to the Rio Ruidoso upstream of the U.S. highway 70 bridge near Seeping Springs lakes[,] above and below the Mescalero Apache boundary.

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

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 600 µS/cm or less in Eagle creek, 1,100 µS/cm or less in Bonito creek and 1,500 µS/cm or less in the Rio Ruidoso; phosphorus (unfiltered sample) less than 0.1 mg/L; the monthly geometric mean of *E. coli* bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

[20.6.4.209 NMAC - Rp 20 NMAC 6.1.2209, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, 7/10/2012; A, XX/XX/XXXX]

[**NOTE:** The standards for Bonito lake are in 20.6.4.223 NMAC, effective 7/10/2012]

The new language in 20.6.4.209 NMAC redefines this regulatory segment, narrowing application to the perennial reaches of the Rio Bonito to those perennial portions upstream of Hwy 48, excluding Bonito Lake, and the perennial tributaries to the Rio Bonito upstream of Hwy 48. It also redefines application to the perennial reaches and perennial tributaries of the Rio Ruidoso to those upstream of the U.S. Hwy 70 bridge near Seeping Springs Lake above the Mescalero Apache boundary to clarify that non-perennial tributaries are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or any non-perennial portions or non-perennial tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

20.6.4.215 PECOS RIVER BASIN: [-] Perennial reaches of the Gallinas river upstream of the diversion for the Las Vegas municipal reservoir and [~~all its~~]perennial reaches of tributaries to the Gallinas river upstream of the diversion for the Las Vegas municipal reservoir, perennial reaches of Tecolote creek upstream of Blue creek[,] and all perennial reaches of tributaries [~~of~~]to Tecolote creek upstream of Blue creek.

A. Designated uses: domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat, industrial water supply and primary contact; and public water supply on the Gallinas river.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 µS/cm or less (450 µS/cm or less in Wright Canyon creek); the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

[20.6.4.215 NMAC - Rp 20 NMAC 6.1.2212, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, 2/13/2018; A, XX/XX/XXXX]

[**NOTE:** This segment was divided effective 2/13/2018. The standards for Tecolote creek from I-25 to Blue creek are under 20.6.4.230 NMAC.]

The new language in 20.6.4.215 NMAC redefines this regulatory segment, narrowing application to the perennial reaches of the of the Gallinas River upstream of the diversion for the Las Vegas municipal reservoir and the perennial tributaries to the Gallinas. It also narrows the application to the perennial tributaries of Tecolote Creek upstream of Blue Creek. These revisions are intended to clarify that non-perennial tributaries are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or classification any non-perennial portions or non-perennial tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from

this regulatory segment.

20.6.4.220 PECOS RIVER BASIN: [-] Perennial reaches of the Gallinas river and [~~its~~]perennial reaches of tributaries to the Gallinas river from its mouth upstream to the diversion for the Las Vegas municipal reservoir, except Pecos Arroyo.

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

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 30°C (86°F) or less.

[20.6.4.220 NMAC - N, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

The new language in 20.6.4.220 NMAC redefines this regulatory segment for the Gallinas River, narrowing application to the perennial reaches of its tributaries upstream of the diversion for the Las Vegas municipal reservoir. The new language in 20.6.4.215 NMAC redefines this regulatory segment, narrowing application to the perennial reaches of the of the Gallinas River upstream of the diversion for the Las Vegas municipal reservoir and the perennial tributaries to the Gallinas. It also narrows the application to the perennial tributaries of Tecolote Creek upstream of Blue Creek. These revisions are intended to clarify that non-perennial tributaries are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or classification any non-perennial portions or tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

20.6.4.231 PECOS RIVER BASIN: The main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, perennial reaches of North Spring river and perennial reaches of the Rio Hondo downstream of Bonney canyon.

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

B. Criteria:

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

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

This new regulatory segment contains the perennial waters originally contained in segment 20.6.4.206 NMAC. These include the mainstem of the Pecos River from the headwaters of Brantly Reservior upstream to Salt Creek and perennial reaches of the Rio Peñasco and the perennial reaches of the North Spring River and the Rio Hondo. These waters retain the warmwater aquatic life use and now include the more protective primary contact recreation designation. No supporting documentation is necessary for this new segment.

20.6.4.307 CANADIAN RIVER BASIN: [-] Perennial reaches of the Mora river from the USGS gaging station near Shoemaker upstream to the state highway 434 bridge in Mora, all perennial reaches of tributaries to the Mora river downstream from the USGS gaging station at La Cueva in San Miguel and Mora counties except lakes identified in 20.6.4.313 NMAC, perennial reaches of Ocate creek downstream of Ocate and[~~its~~]perennial reaches of tributaries to Ocate creek downstream of Ocate, and perennial reaches of Rayado creek downstream of Miami lake diversion in Colfax county.

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

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

[20.6.4.307 NMAC - Rp 20 NMAC 6.1.2305.3, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, 7/10/2012; A,

XX/XX/XXXX]

The new language in 20.6.4.307 NMAC redefines this regulatory segment, narrowing application to the perennial reaches of the of Ocate Creek to the portion downstream of Ocate and the perennial tributaries to Ocate Creek. This segment retains the current marginal coldwater aquatic life, primary contact and other designated uses. These revisions are intended to clarify that non-perennial tributaries are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or classification any non-perennial portions or tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

20.6.4.308 CANADIAN RIVER BASIN: [-] Charette lakes.

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

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

[20.6.4.308 NMAC - Rp 20 NMAC 6.1.2305.5, 10/12/2000; A, 5/23/2005; A, 12/1/2010; A, XX/XX/XXXX]

20.6.4.309 CANADIAN RIVER BASIN: [-] The Mora river and perennial reaches of its tributaries upstream from the state highway 434 bridge in Mora except lakes identified in 20.6.4.313 NMAC, all perennial reaches of tributaries to the Mora river upstream from the USGS gaging station at La Cueva, perennial reaches of Coyote creek and [~~its~~] perennial reaches of tributaries to Coyote creek, the Cimarron river above state highway 21 in Cimarron except Eagle Nest lake and [~~its~~]perennial reaches of tributaries to the Cimarron river above state highway 21 in Cimarron[~~ except Eagle Nest lake~~], all perennial reaches of tributaries to the Cimarron river north and northwest of highway 64 except north and south Shuree ponds, perennial reaches of Rayado creek above Miami lake diversion and [~~its~~]perennial reaches of tributaries to Rayado creek above Miami lake diversion, Ocate creek and perennial reaches of its tributaries upstream of Ocate, perennial reaches of the Vermejo river upstream from Rail canyon and all other perennial reaches of tributaries to the Canadian river northwest and north of U.S. highway 64 in Colfax county unless included in other segments.

A. Designated uses: domestic water supply, irrigation, high quality coldwater aquatic life, livestock watering, wildlife habitat, and primary contact; and public water supply on the Cimarron river upstream from Cimarron and on perennial reaches of Rayado creek and its tributaries.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 500 µS/cm or less; the monthly geometric mean of *E. coli* bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

[20.6.4.309 NMAC - Rp 20 NMAC 6.1.2306, 10/12/2000; A, 7/19/2001; A, 5/23/2005; A, 12/1/2010; A, 7/10/2012; A, XX/XX/XXXX]

[**NOTE:** The segment covered by this section was divided effective 5/23/2005. The standards for the additional segment are under 20.6.4.310 NMAC. The standards for Shuree ponds are in 20.6.4.314 NMAC and the standards for Eagle Nest lake are in 20.6.4.315 NMAC, effective 7/10/2012]

The new language in 20.6.4.309 NMAC redefines this regulatory segment, narrowing application to the perennial reaches of tributaries to Coyote Creek, the Cimarron River itself above Hwy 21 except Eagle Lake, and the perennial reaches of tributaries to the Cimarron River above Hwy 21, perennial reaches of Rayado Creek above the Miami Lake diversion and perennial reaches of tributaries to Rayado Creek. This segment retains the current high quality coldwater aquatic life, primary contact and other designated uses. These revisions are intended to clarify that non-perennial tributaries are not classified under perennial sections of 20.6.4 NMAC. The EPA recommends that NMED clarify what regulatory segment or classification any non-perennial portions or tributaries of these waters will be contained in. Supporting documentation is required if less protective designated uses will apply to waters now excluded from this regulatory segment.

20.6.4.900 CRITERIA APPLICABLE TO EXISTING, DESIGNATED OR ATTAINABLE USES

UNLESS OTHERWISE SPECIFIED IN 20.6.4.97 THROUGH 20.6.4.899 NMAC:

D. Primary contact: The monthly geometric mean of E. coli bacteria of 126 cfu/100 mL or MPN/100 ml and single sample of 410 cfu/100 mL or MPN/100 mL, [~~and~~]a pH within the range of 6.6 to 9.0 apply to this use, a maximum of 8 µg/L for total microcystins, and a maximum of 15 µg/L for cylindropermopsin. The results for *E. coli* may be reported as either colony forming units (CFU) or the most probable number (MPN) depending on the analytical method used.

The proposed criteria in 20.6.4.900 D. for total microcystin and cylindrospermopsin are consistent with EPA's current national recommendations. However, in addition to specifying the magnitude, the EPA recommends that the NMED include duration and frequency to be protective of human health in recreational waters. As written, these values will be interpreted as never to be exceeded criteria, which is more stringent than EPA's 304(a) recommendations. The EPA's guidance for these parameters can be found at: https://www.epa.gov/sites/production/files/2019-05/documents/hh-rec-criteria-habs-factsheet-2019.pdf.

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

(6) Marginal warmwater: dissolved oxygen 5 mg/L or more, pH within the range of 6.6 to 9.0 and [~~maximum~~]temperatures that may routinely exceed 32.2°C (90°F). Where a segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature.

The revised language in 20.6.4.900 H.(6) eliminates the maximum temperature limitation in the marginal warmwater aquatic life use provision consist with the definition of marginal warmwater held in 20.6.4.7 M(2). No comment is necessary.

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

(1) Acute aquatic life criteria for metals: The equation to calculate acute criteria in µg/L is $\exp(m_A[\ln(\text{hardness})] + b_A)(CF)$. Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that has a pH between 6.5 and 9 and is filtered to minimize mineral phases as specified by the department. [~~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 equation parameters are as follows:

(2) Chronic aquatic life criteria for metals: The equation to calculate chronic criteria in µg/L is $\exp(m_C[\ln(\text{hardness})] + b_C)(CF)$. Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that has a pH between 6.5 and 9 and is filtered to minimize mineral phases as specified by the department.[~~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 equation parameters are as follows:

In its April 30, 2012 action, the EPA disapproved the application of the hardness-based equation in 20.6.4.900 I.(1) and (2) for waters where the pH is below 6.5 as not protective of applicable designated uses in waters below that pH. The revised language here and in 20.6.4.900 J.(1), clarifies that the previously approved 750 and 87 µg/L 304(a) criteria for aluminum are and will remain the applicable water quality standards for CWA purposes in waters where the pH is at or below 6.5. In that 2012 action, the EPA also recommended that the State insert a footnote

specifying that the hardness-based equations only apply at a pH of 6.5 to 9.0 to resolve the disapproval. The revised language in both 20.6.4.900 I.(1) and (2), specifying a pH range between 6.5 and 9.0 and the inclusion of a footnote in 20.6.4.900 J.(1) would resolve EPA's 2012 disapproval. EPA also recommends that NMED clarify applicability in the new footnote in 20.6.4.900 J.(1)(i) which is discussed in more detail in comments specific to that section.

Subsequent to the 2012 action, the EPA published updated §304(a) criteria for aluminum for freshwater (Aquatic Life Ambient Water Quality Criteria for Aluminum - 2018, EPA-822-R-18-001). The updated aluminum criteria are based on the latest science on aluminum toxicity to aquatic life and apply to waters within a pH range of 5.0 – 10.5. The EPA recommends that the NMED update its current aluminum criteria for waters within this pH range with the updated §304(a) aluminum criteria. However, given that there are waters in New Mexico with pH levels below 3, it would be appropriate to also retain and continue to apply the 750 and 87 µg/L criteria in waters with a pH below 5.0 and is also discussed in more detail in section 20.6.4.900 J.(1).

Please note that the 2015 revisions to the EPA's water quality standards (WQS) regulation at 40 CFR §131.20(a) require any state that chooses not to adopt new or revised criteria for any parameters for which the EPA has published new or updated criteria recommendations under CWA §304(a) to explain its decision when reporting the results of its triennial review to the EPA. The goal of the revised regulation is to ensure public transparency about state WQS decisions.

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

The EPA supports the proposed revisions in 20.6.4.900 I (3) for acute and chronic hardness-based metals criteria. The EPA used the hardness-based equations in 20.6.4.900 (I) to calculate and confirm that the revisions to acute and chronic criteria are consistent with the EPA's current national recommendations.

J. Use-specific numeric criteria.

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

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

(i) The acute and chronic aquatic life criteria for dissolved aluminum is only applicable when the concurrent pH is outside the range established for the hardness-based total recoverable criteria for aluminum in Paragraphs (1) and (2) of Subsection I of 20.6.4.900 NMAC.

Based on the proposed revisions to 20.6.4.900 J.(1), including the criteria table and the new footnote in 20.6.4.900 J.(1)(i), it is clear that the NMED is working to meet the requirements in 40 CFR §131.20(a) by adopting or revising both aquatic life and human health criteria consistent with the EPA's recommended § 304(a) criteria. The EPA supports the new/revised criteria proposed in 20.6.4.900 J.(1).

The NMED has proposed the reinsertion of 750 ug/L acute and 87 ug/L chronic aluminum criteria that have remained effective for CWA purposes in 20.6.4.900 J.(1) although previously deleted from the 20.6.4.900 J.(1) numeric criteria table. As noted above, the revised language in both 20.6.4.900 I.(1) and (2), specifying a pH range between 6.5 and 9.0 and the inclusion of the related footnote in

20.6.4.900 J.(1) address the EPA's 2012 disapproval. If the 1988 aluminum criteria and this footnote are retained as proposed, the EPA recommends incorporating the numerical pH range between 6.50 and 9.0 in footnote (i) to clarify the conditions under which the 750 ug/L acute and 87 ug/L chronic aluminum criteria will apply. In addition, the EPA suggests that all section 20.6.4.900 J.(1) footnotes be reordered consistent with how they appear in the criteria table cells, replacing what is now 20.6.4.900 J(1)(a) with the new (i) and continue that format with all footnotes progressing down the table.

However, the EPA recommends that the NMED adopt the updated §304(a) aquatic life criteria for aluminum. The EPA's updated 304(a) aluminum criteria are based on a multiple linear regression model using pH, dissolved organic carbon, and hardness. The EPA also developed an aluminum criteria calculator based on site-specific information which is available from the website in both Excel and R formats (in footnote 2). The latest science shows that pH is important in determining the mechanism of toxicity of aluminum. While increased toxicity at low pH is common for all metals, pH appears to be particularly important with aluminum due to the drastic change in solubility and increase in the bioavailable fraction of the metal at low pH. Given that the pH in New Mexico's waters is highly variable, with ranges of 2.8-3.3 in waters flowing through volcanic rock to a pH of 8.0 or possibly higher in waters flowing through alkaline desert soils, it is important to consider these conditions in determining how criteria are applied. Although the updated criteria address conditions in the neutral to high pH ranges, it should not preclude consideration of the likelihood of increased bioavailability and toxicity at low pH. Then it is reasonable to retain the EPA's 1988 criteria for waters with exceptionally low pH ranges and rely on the updated criteria in the majority of the state's waters.

In addition to the adoption of the updated aquatic life criteria for aluminum, the EPA recommends that NMED consider updating the aquatic life criteria for the following pollutants to reflect the latest science as contained in EPA's latest criteria recommendation documents: EPA-822-R-18-001); Cadmium (Aquatic Life Ambient Water Quality Criteria for Cadmium - 20 I 6. EPA-820-R-16-002); Copper (Aquatic Life Ambient Water Quality Criteria for Copper - 2007, EPA-822-R-07-001); and Selenium (Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016, EPA 822-R-16-006).

<u>Cadmium:</u> EPA published revised aquatic life criteria recommendations for cadmium in 2016. The updated saltwater criteria are 33 ug/L (acute) and 7.9 ug/L (chronic). The updated freshwater criteria are hardness-based equations similar to the freshwater criteria in the current NMAC:

- *acute criterion* $= e^{(0.9789(\ln(\text{hardness}))-3.866}$
- *chronic criterion* $= e^{0.79779(\ln(\text{hardness}))-3.909}$

<u>Copper:</u> EPA revised the hardness-based aquatic life criteria for freshwater copper in 2007, to a biotic ligand model (BLM). The BLM was developed using data that became available after the development of EPA's 1984 criteria document and updated criteria recommendations published in 1995. The BLM utilizes a model that incorporates the characteristics of the receiving water body that can affect the toxicity of copper. Ten input parameters are included in the model to determine accurate criteria that are neither over nor under protective.

Selenium: EPA published an updated freshwater aquatic life criterion for selenium in 2016, which consists of several components to protect for chronic effects. Aquatic communities are expected to be protected by this chronic criterion from any potential acute effects of selenium, so there is no

acute criterion in the 2016 criteria document.

If the NMED does not adopt the most recent revised for aluminum and the other 304(a) criteria recommendations that the EPA has published that are described above, New Mexico is obligated to provide an explanation why it has not adopted these criteria when it submits the results of its triennial review to the EPA as noted above.

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

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

Acute TAN Criterion Magnitude for 1-hour average=

$$\text{MIN}\left(\left(\frac{0.275}{1+10^{7.204-pH}}+\frac{39}{1+10^{pH-7.204}}\right)\left(0.7249\left(\frac{0.0114}{1+10^{7.204-pH}}+\frac{1.6181}{1+10^{pH-7.204}}\right)\left(23.12\times 10^{0.036(20-T)}\right)\right)\right)$$

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

The EPA supports the proposed revisions to language in 20.6.4.900(K) and 20.6.4.900(L), which are consistent with EPA guidance for aquatic life ambient water quality criteria for ammonia. The temperature and pH-dependent values in tables L.(1) and L.(2) are also consistent with the values in EPA's current nationally recommended freshwater ammonia criteria. However, the equation for acute criterion magnitude is missing a comma after the first close parenthesis, and a multiplication sign between the second close parenthesis and the fifth open parenthesis. The EPA recommends correcting these typos; the placement of the comma is critical because the equation contains a minimum (MIN) function. The minimum function returns the item with the lowest value from the elements separated by a comma. Without the placement of a comma the equation is subject to misinterpretation.

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

(2) Temperature and pH-dependent values for the acute TAN criterion magnitude - *Oncorhynchus* spp. are present.

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

Chronic TAN Criterion Magnitude for 30-day average=

$$0.8876\times\left(\frac{0.0278}{1+10^{7.688-pH}}+\frac{1.1994}{1+10^{pH-7.688}}\right)\times\left(2.126\times 10^{0.028\times(20-MAX(T,7))}\right)$$

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

The EPA supports the proposed revision to aquatic life criteria for ammonia in 20.6.4.900(M). The temperature- and pH-dependent values in table M(1) are consistent with EPA's current nationally

recommended freshwater ammonia criteria. The EPA recommends adding the criterion component limiting the highest four-day average within the 30-day averaging period to no more than 2.5 times the chronic criterion magnitude (CCC), for consistency with EPA's current nationally recommended ammonia criteria. As described in EPA's ammonia criteria document, this criterion component is critical to minimize variability in ammonia levels within a given 4-day period that could harm aquatic life.

EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

December 9, 2020

Transmitted via email: jennifer.fullam@state.nm.us

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

Re: Public Comment on NMED's proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC).

Ms. Fullam:

The Environmental Defense Fund (EDF) appreciates the opportunity to submit comments regarding the New Mexico Environment Department's (NMED's) Surface Water Quality Bureau (SWQB) Triennial Review (TR) of New Mexico's Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC). EDF is an international organization with over 2,000,000 members and activists worldwide, with more than 18,000 residing in New Mexico, many of whom care deeply about the potential health and environmental impacts of oil and gas development.

New Mexico's surface water quality standards (WQS), codified at 20.6.4 NMAC, define water quality goals by designating uses for rivers, streams, lakes and other surface waters; setting criteria to protect those uses; and establishing antidegradation provisions to preserve water quality. These WQS, after an opportunity for public review and comment, are adopted by the Water Quality Control Commission (WQCC), then approved by the United States Environmental Protection Agency (US EPA) under the authority of the federal Clean Water Act (CWA). They are then available for use by NMED in permitting discharges to surface waters, assessing whether its surface waters are impaired, and establishing restoration goals.

In its effort to implement House Bill 546, New Mexico will need to carefully assess whether these standards adequately address the potential pollutants in oil and gas produced waters, given that the bill contemplates the treatment and release of this wastewater in ways that may impact surface waters of the state. NMED itself has rightfully acknowledged this duty, sharing

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with the public that the Produced Water Act presents the agency with a research question to assess "what changes are needed to our state water quality standards to protect water resources and human health?"[1]

EDF recognizes the knowledge, time and resource challenges at play in revisiting and improving regulatory programs and standards in order to appropriately address the complexities of produced water. With this in mind, we can appreciate the potential reasons why NMED has chosen not to include or address produced water chemicals in its November 2020 draft proposed amendments to 20.6.4 NMAC. Nevertheless, EDF—as we did in informal commentary during the public involvement stage—would like to respectfully emphasize again the importance of beginning to address these constituents in the near-term by utilizing currently available information and eventually building on those initial efforts as science and technology allows.

EDF acknowledges that NMED will not be able to consider and develop individual standards for all of the many compounds in produced water at any one time, including during this TR, due to time and research constraints. However, EDF remains concerned that the current standards are not adequate to protect surface water quality or human health and the environment from permitted discharges of treated produced water should they occur in the future. Timely action to begin addressing gaps in existing standards is vital to ensure the proper baseline regulatory protections are in place *prior to* considering actual permitting programs. Given the time needed to modify standards and the research requirements necessary to gather supporting data and develop necessary analytical tools, an effort to consider new or modified standards to address produced water constituents should be launched as soon as reasonably practicable, if not within this TR.

Furthermore, a phased approach to comprehensively address produced water constituents makes sense, focusing first on improvements to the NMED water quality standards that can be made with existing knowledge and tools and next on improvements that prove necessary following research advancements. Research conducted by EDF has shown that there are known chemicals in produced waters that have existing surface water quality standards, or enough toxicity information to begin considering development of human health and/or aquatic life water quality criteria that could be incorporated into the New Mexico water quality standards in the near-term. Although criteria and standards based solely on this existing body of knowledge would only be a first step, action on these constituents presents a practical "phase one" effort toward developing a baseline (such as for initial pilot projects) that could then be supplemented and strengthened by ongoing research identified by the Produced Water Research Consortium toward the development of more substantial pilot testing conditions or broader permit conditions if the scientific research supports that outcome. This 'process of continuous improvement' approach to the establishment of guidelines or standards applicable to the reuse or discharge of treated produced water is vital to advance protection of the health and safety of New Mexico's surface waters and its citizens as NMED contemplates various pathways for implementing HB546.

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[1] NMED Public engagement meeting presentation: Produced Water Management in New Mexico (Nov. 14, 2019), https://www.env.nm.gov/new-mexico-produced-water/wp-content/uploads/sites/16/2019/11/Produced-Water-Public-Meeting-Presentation_ENGLISH_FINAL-191114.pdf

To summarize, EDF strongly believes that an initial phase of near-term action, either during this TR or outside of the review but before the next TR, should be taken on as many as possible chemicals potentially found in New Mexico produced water that:

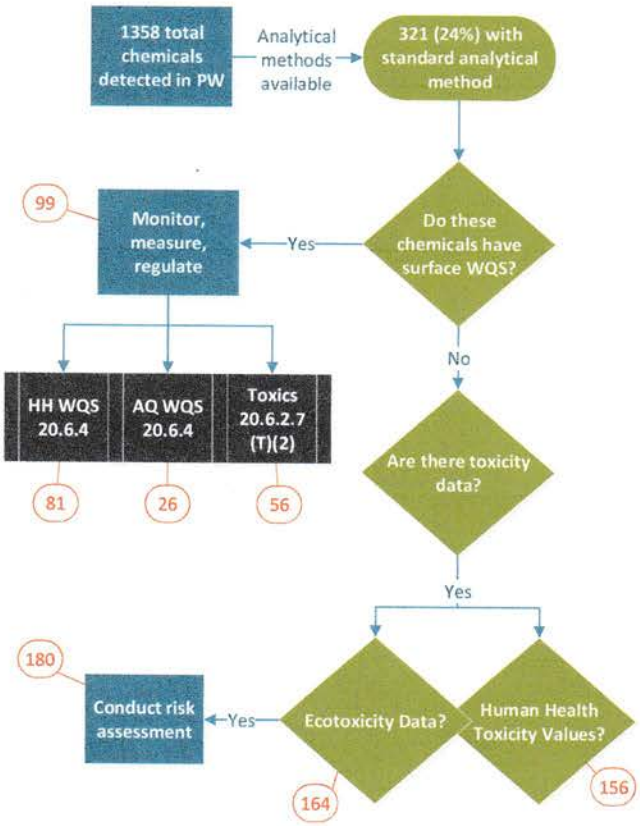
(i) have a standard, approved analytical method currently available;

(ii) are not covered by existing numeric standards; and

(iii) have the toxicity values that are necessary to assess risk and consider regulatory modification.

EDF has initiated an effort to elucidate the produced water chemicals that may meet this initial threshold. Through an extensive literature review, EDF has identified approximately 1,360 chemicals that can be found in produced water nationally and therefore have the potential to be found in New Mexico produced waters. An estimated 88 of those already have New Mexico surface water quality standards that could be immediately applied in a potential pilot testing or preliminary permitting program. Of the remainder, about 180 chemicals—which are not already considered under NMAC 20.6.2.7(T)(2), as discussed below—have an approved standard method associated with them, and toxicity values that could be used to conduct human health or aquatic life risk assessments that are the prelude to developing water quality criteria to adopt into a WQS. In other words, EDF estimates that at least 180 potential produced water chemicals have the type of tools and data necessary to begin a process of considering associated water quality criteria and standard updates *today*.

In addition to considering water quality numeric criteria improvements, there are other aspects of the holistic standards that deserve consideration in addressing produced water. For example, there are important protections related to "toxic pollutants," as defined in NMAC 20.6.2.7(T)(2) to include a list of 104 chemicals; of those, 56 have been identified in produced water and are potentially present in New Mexico produced water. While 45 of the 56 defined toxic pollutants found in produced water already have numeric surface water standards in New Mexico, there are 11 additional toxic pollutants that should be considered for a numeric standard. Importantly, toxic pollutants are also associated with a narrative requirement in the Surface Water General Criteria, which states "[e]xcept as provided in 20.6.4.16 NMAC, surface waters of the state shall be free of toxic pollutants from other than natural causes in amounts, concentrations or combinations that affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or that will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish and other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers of aquatic organisms" (see NMAC Section 20.6.4.12(F)(1)). This narrative standard could be translated into numerical limits for toxics identified in produced water where pilot or other eventual permits are issued for the potential discharge of treated produced water to surface water bodies.



Initial comparison of chemicals identified in produced water (as reported nationally in the literature) to NM surface water quality standards, toxic pollutants, and available ecotoxicity and human health data. Chemicals, citations, and associated data are reported in the attachment to this letter. This represents ongoing work by EDF and partners that is expected to be presented in future peer-reviewed publications. Preliminary outputs are current as of November 2020.

EDF strongly encourages, at a minimum and as part of the 2020 TR or another near-term action prior to the next TR, that NMED conduct an assessment of the New Mexico surface water quality standards in relation to what is already known regarding the chemical character and toxicity of produced water. Based on that assessment, NMED should identify the suite of surface water quality standards already in place that may be utilized to address produced water in the nearer term, alongside the gaps that exist in coverage for the remaining potential chemicals. NMED should also identify and consider opportunities for an adaptive management approach to future actions on new standards as data and analytical tools allow – as represented by the EDF analysis here showcasing constituents with data currently available to conduct risk assessments toward the establishment of new criteria.

Finally, it is important to emphasize that even such an effort only scratches the surface of changes that would need to be in place before considering a move to implement any treatment and discharge of produced water into surface waters of the state. Pointedly, 76% of the potential chemicals in produced water were removed from EDF's analysis altogether simply because a standard analytical method does not exist for their detection and quantification in the regulatory context. This fact underscores why the recommendations for near-term action included here do not obviate the need for additional research but rather emphasize the importance of that research, while highlighting opportunities to—at a minimum—use available tools and

information to inform pilot studies, assess risk, and begin to strengthen regulatory programs in advance of real-world permitting scenarios.

Sincerely,

Cloelle Danforth, Ph.D.
Scientist
Environmental Defense Fund

Dan Mueller, P.E.
Senior Manager
Environmental Defense Fund

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Consultant to EDF

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Attachment

cc (via email);
Rebecca Roose, Rebecca.Roose@state.nm.us
Shelly Lemon, Shelly.Lemon@state.nm.us

NM surface water quality standards, toxic pollutants, and available ecotoxicity and human health data and produced water chemicals

Produced water chemicals identified in literature with standard analytical method (Part 136, SW-846, or NEMI)
Chemical constituents identified in produced water as reported in the literature (181 peer-reviewed and grey; citations available upon request)
Toxicity value and ecotoxicity data sourced from Chemistry Dashboard database of toxicity values (ToxValDB, https://comptox.epa.gov/dashboard/)

Total		Counts				
279		81	26	56	250	255
Descriptor		HH WQS (20.6.4)	AQ WQS (20.6.4)	Toxics (20.6.2.7, T2)	Toxicity Values	Ecotoxicity Data
CAS	Name					
309-00-2	Aldrin	✓	✓	✓	✓	✓
60-57-1	Dieldrin	✓	✓	✓	✓	✓
72-20-8	Endrin	✓	✓	✓	✓	✓
76-44-8	Heptachlor	✓	✓	✓	✓	✓
58-89-9	Lindane	✓	✓	✓	✓	✓
12672-29-6	Aroclor 1248	✓	✓	✓	✓	✓
7440-38-2	Arsenic	✓	✓		✓	✓
7440-43-9	Cadmium	✓	✓		✓	✓
7440-50-8	Copper	✓	✓		✓	✓
57-12-5	Cyanide	✓	✓		✓	✓
959-98-8	Endosulfan I	✓	✓		✓	✓
33213-65-9	Endosulfan II	✓	✓		✓	✓
1024-57-3	Heptachlor epoxide B	✓	✓		✓	✓
7439-92-1	Lead	✓	✓		✓	✓
7439-97-6	Mercury	✓	✓		✓	✓
7440-02-0	Nickel	✓	✓		✓	✓
72-55-9	p,p'-DDE	✓	✓		✓	✓
7782-49-2	Selenium	✓	✓		✓	✓
7440-66-6	Zinc	✓	✓		✓	✓
7429-90-5	Aluminum	✓	✓		✓	✓
7782-50-5	Chlorine		✓		✓	✓
16065-83-1	Chromium (III)		✓		✓	✓
18540-29-9	Chromium (VI) ion		✓		✓	
7439-96-5	Manganese		✓		✓	✓
7439-98-7	Molybdenum		✓		✓	✓
7440-22-4	Silver		✓		✓	✓
156-60-5	(E)-1,2-Dichloroethylene		✓		✓	✓
79-34-5	1,1,2,2-Tetrachloroethane	✓		✓	✓	✓
120-82-1	1,2,4-Trichlorobenzene	✓		✓	✓	✓
95-50-1	1,2-Dichlorobenzene	✓		✓	✓	✓
107-06-2	1,2-Dichloroethane	✓		✓	✓	✓
122-66-7	1,2-Diphenylhydrazine	✓		✓	✓	✓
106-46-7	1,4-Dichlorobenzene	✓		✓	✓	✓
120-83-2	2,4-Dichlorophenol	✓		✓	✓	✓
107-13-1	Acrylonitrile	✓		✓	✓	✓
319-84-6	alpha-1,2,3,4,5,6-Hexachlorocyclohexane	✓		✓	✓	✓
120-12-7	Anthracene	✓		✓	✓	✓
71-43-2	Benzene	✓		✓	✓	✓
92-87-5	Benzidine	✓		✓	✓	✓
50-32-8	Benzo(a)pyrene	✓		✓	✓	✓
205-99-2	Benzo(b)fluoranthene	✓		✓	✓	✓
207-08-9	Benzo(k)fluoranthene	✓		✓	✓	✓
319-85-7	beta-Hexachlorocyclohexane	✓		✓	✓	✓
111-44-4	bis(2-Chloroethyl) ether	✓		✓	✓	✓
117-81-7	bis(2-Ethylhexyl) phthalate	✓		✓	✓	✓
75-27-4	Bromodichloromethane	✓		✓	✓	✓
75-25-2	Bromoform	✓		✓	✓	
108-90-7	Chlorobenzene	✓		✓	✓	✓
67-66-3	Chloroform	✓		✓	✓	✓
84-74-2	Dibutyl phthalate	✓		✓	✓	✓
75-09-2	Dichloromethane	✓		✓	✓	✓
84-66-2	Diethyl phthalate	✓		✓	✓	✓
131-11-3	Dimethyl phthalate	✓		✓	✓	✓
100-41-4	Ethylbenzene	✓		✓	✓	✓
206-44-0	Fluoranthene	✓		✓	✓	✓
86-73-7	Fluorene	✓		✓	✓	✓
118-74-1	Hexachlorobenzene	✓		✓	✓	✓
78-59-1	Isophorone	✓		✓	✓	✓
74-83-9	Methyl bromide	✓		✓	✓	✓
98-95-3	Nitrobenzene	✓		✓	✓	✓
86-30-6	N-Nitrosodiphenylamine	✓		✓	✓	✓
108-95-2	Phenol	✓		✓	✓	✓
129-00-0	Pyrene	✓		✓	✓	✓
127-18-4	Tetrachloroethylene	✓		✓	✓	✓
108-88-3	Toluene	✓		✓	✓	✓
79-01-6	Trichloroethylene	✓		✓	✓	✓
541-73-1	1,3-Dichlorobenzene	✓		✓	✓	✓
105-67-9	2,4-Dimethylphenol	✓			✓	✓
83-32-9	Acenaphthene	✓			✓	✓
12587-46-1	Alpha particle	✓			✓	✓
7440-36-0	Antimony	✓				
7440-39-3	Barium	✓			✓	✓
56-55-3	Benz(a)anthracene	✓			✓	✓
85-68-7	Benzyl butyl phthalate	✓			✓	✓
7440-41-7	Beryllium	✓			✓	✓
124-48-1	Chlorodibromomethane	✓			✓	✓
7440-47-3	Chromium	✓			✓	✓
218-01-9	Chrysene	✓			✓	✓
53-70-3	Dibenz(a,h)anthracene	✓			✓	✓
1031-07-8	Endosulfan sulfate	✓			✓	
7421-93-4	Endrin aldehyde	✓			✓	✓
193-39-5	Indeno(1,2,3-cd)pyrene	✓				
14797-55-8	Nitrate	✓			✓	✓
13982-63-3	Radium-226	✓			✓	✓

NM surface water quality standards, toxic pollutants, and available ecotoxicity and human health data and produced water chemicals

Produced water chemicals identified in literature with standard analytical method (Part 136, SW-846, or NEMI)
Chemical constituents identified in produced water as reported in the literature (181 peer-reviewed and grey; citations available upon request)
Toxicity value and ecotoxicity data sourced from Chemistry Dashboard database of toxicity values (ToxValDB, https://comptox.epa.gov/dashboard/)

Total 279		Counts 81	26	56	250	255
Descriptor						
CAS	Name	HH WQS (20.6.4)	AQ WQS (20.6.4)	Toxics (20.6.2.7, T2)	Toxicity Values	Ecotoxicity Data
15262-20-1	Radium-228	✓				
10098-97-2	Strontium-90	✓				
7440-28-0	Thallium	✓			✓	✓
7440-61-1	Uranium	✓			✓	✓
75-34-3	1,1-Dichloroethane			✓	✓	✓
123-91-1	1,4-Dioxane			✓	✓	✓
90-12-0	1-methylnaphthalene			✓	✓	✓
91-57-6	2-Methylnaphthalene			✓	✓	✓
74-87-3	Chloromethane			✓	✓	✓
108-38-3	m-xylene			✓	✓	✓
91-20-3	Naphthalene			✓	✓	✓
95-47-6	o-Xylene			✓	✓	✓
85-01-8	Phenanthrene			✓	✓	✓
106-42-3	p-xylene			✓	✓	✓
100-42-5	Styrene			✓	✓	✓
87-61-6	1,2,3-Trichlorobenzene				✓	✓
526-73-8	1,2,3-trimethylbenzene				✓	
95-63-6	1,2,4-Trimethylbenzene				✓	✓
84-69-5	1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester					✓
573-98-8	1,2-dimethylnaphthalene					✓
57-55-6	1,2-Propylene glycol				✓	✓
108-67-8	1,3,5-Trimethylbenzene				✓	✓
106-51-4	1,4-Benzoquinone				✓	✓
2245-38-7	1,6,7-Trimethylnaphthalene					✓
575-43-9	1,6-dimethylnaphthalene					✓
71-36-3	1-Butanol				✓	✓
611-14-3	1-Ethyl-2-methylbenzene				✓	
832-69-9	1-Methyl phenanthrene					✓
2381-21-7	1-Methylpyrene					✓
90-15-3	1-Naphthol				✓	✓
71-23-8	1-Propanol				✓	✓
829-26-5	2,3,6-Trimethylnaphthalene					✓
118-79-6	2,4,6-Tribromophenol				✓	✓
95-87-4	2,5-dimethylphenol					✓
581-42-0	2,6-dimethylnaphthalene					✓
576-26-1	2,6-dimethylphenol				✓	✓
111-76-2	2-Butoxyethanol				✓	✓
110-75-8	2-Chloroethyl vinyl ether				✓	✓
104-76-7	2-Ethyl-1-hexanol				✓	✓
591-78-6	2-Hexanone				✓	✓
149-30-4	2-Mercaptobenzothiazole				✓	✓
109-06-8	2-Methylpyridine				✓	✓
88-74-4	2-Nitroaniline				✓	✓
122-99-6	2-Phenoxyethanol				✓	✓
95-65-8	3,4-dimethylphenol				✓	✓
108-68-9	3,5-dimethylphenol					✓
140-66-9	4-(1,1,3,3-tetramethylbutyl)-Phenol					✓
7005-72-3	4-Chlorodiphenyl ether				✓	✓
622-96-8	4-Ethyltoluene				✓	
108-10-1	4-Methyl-2-pentanone				✓	✓
100-01-6	4-Nitroaniline				✓	✓
56-57-5	4-Nitroquinoline-1-oxide					✓
57-97-6	7,12-Dimethylbenz(a)anthracene				✓	✓
208-96-8	Acenaphthylene				✓	✓
75-07-0	Acetaldehyde				✓	✓
64-19-7	Acetic acid				✓	✓
67-64-1	Acetone				✓	✓
98-86-2	Acetophenone				✓	✓
79-06-1	Acrylamide				✓	✓
7664-41-7	Ammonia				✓	✓
14798-03-9	Ammonium					✓
62-53-3	Aniline					
100-52-7	Benzaldehyde				✓	✓
191-24-2	Benzo(g,h,i)perylene				✓	✓
205-82-3	Benzo(j)fluoranthene				✓	✓
65-85-0	Benzoic Acid				✓	
119-61-9	Benzophenone				✓	✓
95-16-9	Benzothiazole				✓	✓
100-51-6	Benzyl alcohol				✓	✓
100-44-7	Benzyl Chloride				✓	✓
92-52-4	Biphenyl				✓	✓
7440-69-9	Bismuth				✓	✓
80-05-7	Bisphenol A				✓	✓
7440-42-8	Boron				✓	✓
123-86-4	Butyl acetate				✓	✓
104-51-8	Butylbenzene				✓	✓
58-08-2	Caffeine				✓	
7440-70-2	Calcium					✓
471-34-1	Calcium Carbonate				✓	
105-60-2	Caprolactam				✓	✓
7440-44-0	Carbon				✓	✓
124-38-9	Carbon Dioxide				✓	✓
75-15-0	Carbon disulfide				✓	✓
7440-45-1	Cerium				✓	✓

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Total 279		Counts 81	26	56	250	255
Descriptor		HH WQS (20.6.4)	AQ WQS (20.6.4)	Toxics (20.6.2.7, T2)	Toxicity Values	Ecotoxicity Data
CAS	Name					
7440-46-2	Cesium				✓	✓
16887-00-6	Chloride				✓	✓
7440-48-4	Cobalt				✓	✓
98-82-8	Cumene				✓	✓
110-82-7	Cyclohexane				✓	✓
108-94-1	Cyclohexanone				✓	✓
108-91-8	Cyclohexylamine				✓	✓
556-67-2	Cyclotetrasiloxane, octamethyl-				✓	✓
112-31-2	Decanal				✓	✓
124-18-5	Decane				✓	
134-62-3	DEET				✓	✓
319-86-8	Delta-Hexachlorocyclohexane				✓	✓
132-64-9	Dibenzofuran					✓
132-65-0	Dibenzothiophene				✓	✓
3252-43-5	Dibromoacetonitrile				✓	✓
117-84-0	Di-n-octyl phthalate					✓
122-39-4	Diphenylamine				✓	✓
298-04-4	Disulfoton				✓	✓
5989-27-5	D-Limonene				✓	✓
629-97-0	Docosane				✓	✓
112-40-3	Dodecane					✓
64-17-5	Ethanol				✓	
141-78-6	Ethyl Acetate				✓	✓
62-50-0	Ethyl methanesulfonate				✓	✓
107-21-1	Ethylene glycol				✓	✓
16984-48-8	Fluoride				✓	✓
50-00-0	Formaldehyde				✓	✓
68334-30-5	Fuels, diesel				✓	
7440-55-3	Gallium				✓	
7440-56-4	Germanium				✓	✓
7440-57-5	Gold				✓	✓
7440-58-6	Hafnium				✓	✓
142-82-5	Heptane				✓	✓
544-76-3	Hexadecane				✓	✓
66-25-1	Hexanal				✓	✓
142-62-1	Hexanoic acid				✓	✓
7647-01-0	Hydrochloric acid				✓	✓
7783-06-4	Hydrogen sulfide				✓	✓
7440-74-6	Indium				✓	✓
7553-56-2	Iodine				✓	✓
7439-89-6	Iron				✓	✓
67-63-0	Isopropanol				✓	✓
119-65-3	Isoquinoline					✓
8008-20-6	Kerosine					
7439-91-0	Lanthanum				✓	
7439-93-2	Lithium				✓	✓
7439-95-4	Magnesium				✓	✓
108-39-4	m-Cresol				✓	✓
74-82-8	Methane				✓	
67-56-1	Methanol				✓	
78-93-3	Methyl Ethyl Ketone				✓	✓
80-62-6	Methyl methacrylate				✓	✓
66-27-3	Methyl methanesulfonate				✓	✓
108-87-2	Methylcyclohexane				✓	✓
68-12-2	N,N-Dimethylformamide				✓	✓
110-54-3	n-Hexane				✓	✓
14797-65-0	Nitrite				✓	✓
7727-37-9	Nitrogen				✓	✓
10595-95-6	N-Nitroso-N-methylethylamine				✓	
95-48-7	o-Cresol				✓	✓
630-02-4	Octacosane				✓	✓
593-45-3	Octadecane				✓	
7440-04-2	Osmium				✓	
7440-05-3	Palladium				✓	✓
106-44-5	p-Cresol				✓	✓
99-87-6	p-Cymene				✓	✓
307-55-1	Perfluorododecanoic acid					✓
198-55-0	Perylene					✓
7723-14-0	Phosphorus					✓
85-44-9	Phthalic anhydride				✓	✓
7440-06-4	Platinum				✓	✓
25322-68-3	Polyethylene glycol				✓	✓
25322-69-4	polypropylene glycol				✓	✓
7440-09-7	Potassium				✓	✓
50-24-8	Prednisolone					✓
107-19-7	Propargyl alcohol				✓	✓
79-09-4	Propionic acid				✓	✓
103-65-1	Propylbenzene				✓	✓
110-86-1	Pyridine				✓	✓
91-22-5	Quinoline				✓	✓
7440-15-5	Rhenium					✓
7440-16-6	Rhodium					✓
7440-17-7	Rubidium				✓	✓
7440-18-8	Ruthenium				✓	✓

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Total		Counts				
279		81	26	56	250	255
	Descriptor	HH WQS (20.6.4)	AQ WQS (20.6.4)	Toxics (20.6.2.7, T2)	Toxicity Values	Ecotoxicity Data
CAS	Name					
7440-20-2	Scandium				✓	✓
135-98-8	sec-Butylbenzene				✓	
7631-86-9	Silica				✓	✓
7440-21-3	Silicon				✓	✓
7440-23-5	Sodium				✓	✓
7440-24-6	Strontium				✓	✓
14808-79-8	Sulfate				✓	✓
18496-25-8	Sulfide					✓
7704-34-9	Sulfur				✓	✓
7446-09-5	Sulfur dioxide				✓	
7440-25-7	Tantalum				✓	✓
13494-80-9	Tellurium				✓	✓
75-65-0	tert-Butyl alcohol				✓	✓
98-06-6	tert-Butylbenzene				✓	✓
629-59-4	Tetradecane				✓	
7440-29-1	Thorium				✓	✓
7440-31-5	Tin				✓	✓
7440-32-6	Titanium				✓	✓
126-73-8	Tributyl phosphate				✓	✓
25167-82-2	Trichlorophenol					✓
115-86-6	Triphenyl phosphate				✓	✓
78-51-3	Tris(2-butoxyethyl) phosphate				✓	✓
115-96-8	Tris(2-chloroethyl) phosphate				✓	✓
7440-33-7	Tungsten				✓	✓
7440-62-2	Vanadium				✓	✓
7440-65-5	Yttrium				✓	✓
7440-67-7	Zirconium				✓	✓

EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

January 6, 2021

Transmitted via email: jennifer.fullam@state.nm.us

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

Re: Supplemental Letter - Public Comment on NMED's proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC).

Ms. Fullam:

The Environmental Defense Fund (EDF) appreciates the opportunity to submit this supplemental comment for your consideration in the Triennial Review process.

EDF has read the comprehensive comments submitted by Amigos Bravos and a coalition of other environmental groups. In line with our own comments submitted on December 6, 2020, we would like to emphasize our agreement with section I(H) regarding the importance of addressing constituents of concern in produced water, specifically the below recommendation:

> *Recommendation: Identify constituents found in produced water for which there is available data for inclusion in 20.6.4.900 NMAC during the current Triennial Review. In addition, start now to develop numeric criteria for the close to 200 constituents common in produced water for which we currently do not have a standard.*

Beyond produced water, the comments raise a number of other important points and EDF respectfully encourages NMED to seriously consider recommendations made by experts at Amigos Bravos and other signatories.

Sincerely,

Nichole Saunders
Senior Attorney
Environmental Defense Fund

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Austin, TX 78701

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Los Alamos
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Environmental Protection & Compliance Division
Compliance Programs Group
Los Alamos National Laboratory
PO Box 1663, K490
Los Alamos, NM 87545
505-667-0666

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)
Date: 2021.01.06 13:36:44 -07'00'

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

Copy: Shelly Lemon, NMED/SWQB, Shelly.Lemon@state.nm.us
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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 <u>of test procedures approved under 40 CFR Part 136</u>. In such cases, the water quality standard is enforceable at the minimum quantification level. <u>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.</u>"

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

EPA. 1988. Ambient Water Quality Criteria for Aluminum – 1988. Office of Water. EPA 440/5-86-008.

EPA. 1992. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliances ("National Toxics Rule"). U.S. Environmental Protection Agency, Office of Water, Washington, D.C. Federal Register, Volume: 57, Issue: 246, Page: 60848 (57 FR 60848), Tuesday, December 22, 1992.

EPA. 2002a. Columbia River Basin fish contaminant survey, 1996-1998. U.S. Environmental Protection Agency, Region 10 Seattle, Washington. EPA 910/R-02/006.

EPA. 2002b. National recommended water quality criteria: 2002. Human health criteria calculation matrix. EPA-822-R-02-012. US Environmental Protection Agency, Washington, DC.

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.

EPA. 2008. Letter re Existing Uses from D. Keehner, USEPA Standards and Health Protection Division to D. Smithee, OK Water Resources Board (Sept. 5, 2008).

EPA. 2019. Updated Problem Formulation and Systematic Review Protocol for the Inorganic Arsenic IRIS Assessment (Report). US Environmental Protection Agency, Washington, DC.

EPA. 2015. Chemical-specific inputs for the 2015 final updated human health ambient water quality criteria. US Environmental Protection Agency, Washington, DC.

IDEQ. 2010. Arsenic, mercury, and selenium in fish tissue and water from Idaho's major rivers: a statewide assessment.

NMED. 2009. USEPA-approved Total Maximum Daily Load (TMDL) for the Jemez River Watershed (from San Ysidro to headwaters excluding waters in the Valles Caldera National Preserve). September 15, 2009.

NMED. 2011. State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process. New Mexico Water Quality Control Commission. WQCC Approval Date: May 10, 2011. EPA Approval Date: December 23, 2011.

NMED. 2018. Quality assurance project plan for water quality management programs 2018. New Mexico Environment Department Surface Water Quality Bureau.

NMED. 2020. New Mexico Environment Department Triennial Review of Standards for Interstate and Intrastate Surface Waters (Public Presentation). New Mexico Environment Department Surface Water Quality Bureau. November 12, 2020.

New Mexico Mining Association

January 6, 2021

Via Electronic and U.S. Mail

Attn: Jennifer Fullam- 2020 Triennial Review
Surface Water Quality Bureau
New Mexico Environment Department
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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.

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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

- Wilcox, R. 1997. Concentrations of Selected Trace Elements and Other Constituents in the Rio Grande and in Fish Tissue in the Vicinity of Albuquerque, New Mexico, 1994 to 1996. United States Geologic Survey Open File Report 97-667. Available at: https://pubs.er.usgs.gov/publication/ofr97667

- Oregon DEQ, 2011. Water Quality Standard Review and Recommendations Arsenic. Available at: https://www.oregon.gov/deq/wq/Pages/WQ-Standards-Metals.aspx

- Schoof, R.A. and J.W. Yager. 2007. Variation of total and speciated arsenic in commonly consumed fish and seafood. Human and Ecological Risk Assessment, 13:946-965.

- USEPA, 1980. Ambient Water Quality Criteria for Arsenic. EPA 440/5-80-021. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/ambient-wqc-arsenic-1980.pdf

- USEPA, 2002. National Recommended Water Quality Criteria: 2002 Human Health Criteria Calculation Matrix. EPA-822-R-02-012. Available at: https://www.epa.gov/sites/production/files/2018-12/documents/hh-criteria-calculation-matrix-2002.pdf

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od=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000019%5CP1002YTX.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL

- 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

San Juan Water Commission
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MEMBERS:
City of Aztec
City of Bloomfield
City of Farmington
San Juan County
S.J. County Rural Water Users Assoc.

January 6, 2021

New Mexico Environment Department
Surface Water Quality Bureau
Attn: Jennifer Fullam-2020 Triennial Review
P.O. Box 5469
Santa Fe, NM, 87502

Via U.S. Mail and E-mail to:
jennifer.fullam@state.nm.us

Re: San Juan Water Commission Comments on August 19, 2020, Triennial Review Rulemaking Petition, Statement of Reasons, and Proposed Amendments

Dear Ms. Fullam:

Pursuant to the November 2 and 25, 2020, notices of a public comment period for the proposed amendments to the State's Standards for Interstate and Intrastate Surface Waters (20.6.4 New Mexico Administrative Code ("NMAC")), I hereby provide the following comments on behalf of the San Juan Water Commission ("SJWC") to the New Mexico Environment Department Surface Water Quality Bureau ("NMED"). These comments are based on our review of NMED's August 19, 2020, Petition and Statement of Reasons for the proposed amendments to the surface water quality standards, as well as the information provided by NMED personnel at the virtual meetings held on November 12 and 16, 2020. SJWC appreciates the opportunity provided by NMED to comment on the Petition and Statement of Reasons.

General Comment

SJWC has been hampered in its review of, and development of comments concerning, NMED's proposed changes to the surface water quality standards because of the lack of information about the bases for the proposed changes. Although NMED has provided a Statement of Reasons, that Statement merely provides a general description of NMED's proposals—it provides almost no bases for the proposals. In past Triennial Reviews, NMED's petition has included extensive descriptions of the bases for each proposed change to a surface water quality standard. Those bases aided interested parties in their review of the scientific and/or regulatory appropriateness of each proposed standard change. For example, see NMED's 2013 Triennial Review Petition filed with the WQCC on June 25, 2014.

NMED Exhibit 92

SJWC encourages NMED to amend its Petition and, in accordance with its historical practice, provide both the general public and future parties to the Triennial Review with adequate information concerning the bases for NMED's proposals. Without such information, it is not possible to adequately review NMED's proposals and consider whether to support them.

Substantive Comments

1. Climate Change – New 20.6.4.6.D and 20.6.4.7.C(4) NMAC. These provisions are very general and could have far-reaching implications. The Statement of Reasons (paragraphs 1 and 2.iii) does not clearly explain the intent behind these additions to the surface water quality standards. SJWC therefore requests that NMED explain, in more detail, its reasons for referencing climate change and how it intends to implement the climate change "standard." Without such information, SJWC is unable to determine whether the proposals are workable or, indeed, whether they are within the WQCC's statutory authority. SJWC suggests that NMED simply treat "climate change" as any other "cause" of an impairment. Also, the terms within the definition of "climate change" (*i.e.*, "significant change," "extended period of time," and "major changes") need to be defined.

2. Baseflow – New 20.6.4.7.B(1) NMAC. SJWC agrees this is a very useful concept to add to the surface water quality standards. However, more detail for calculating baseflow is needed. A formula approach like that used in the new definitions for "4Q3" or "harmonic mean flow" may be useful. The definition of "effluent dominated" proposed in the new 20.6.4.7.E(2) NMAC implies "baseflow" would be based on a 12-month average. Because few streams have flow gages, NMED should provide additional explanation concerning what readily available data will be used for determining baseflow.

3. Contaminants of Emerging Concern – New 20.6.4.7.C(7) NMAC and Amended 20.6.4.13.F(1) NMAC. This language will allow NMED to regulate contaminants that are not routinely monitored and for which there are no regulatory standards. It therefore will be difficult to determine whether the concentrations of these contaminants are in amounts that will cause the effects listed in 20.6.4.13.F(1) NMAC. Furthermore, it is not clear whether, by specifically referencing this category of contaminants, NMED is given any additional authority. NMED should provide additional explanation concerning the bases of, and its intent for, these provisions.

4. Existing Use Analysis – New 20.6.4.10.B NMAC. NMED proposes to add language to this section that is directly from 40 CFR § 131.10. At the same time, NMED is proposing to implement this provision and use it to support the modification of the recreational use for several stream segments from "secondary" to "primary" contact. The proposed changes to the recreational uses for those segments are premature. The process for the "existing use analysis" should be

defined and approved prior to implementing it. "Supporting evidence" (the type and amount of data required) for this type of demonstration also should be defined. In addition, NMED should provide any analysis it has done in support of its proposals to upgrade recreational uses from secondary to primary contact.

5. Toxic Pollutants – Amendment to 20.6.4.13.F(1) NMAC. NMED is proposing to add a reference to the definition of "toxic pollutants" found in the Ground and Surface Water Protection Rules (20.6.2 NMAC) to the toxic pollutants regulation in the surface water quality standards. "Toxic pollutants" already is defined in the surface water quality standards at 20.6.4.7.T(2) NMAC. The inclusion of a reference to the 20.6.2 NMAC definition within the surface water quality standards is confusing and may cause conflict. The two definitions have existed in separate rules for many years, and NMED should explain why it is now proposing this amendment. In addition, like SJWC's comment concerning contaminants of emerging concern, NMED should explain how it intends to implement this provision for toxic pollutants for which there are no regulatory standards or very limited monitoring data.

6. Section 900 Criteria.

   a. 20.6.4.900.D NMAC - New Recreational Criteria for Microcystins and Cylindrospermopsin. NMED proposes to adopt maximum criteria for these cyanotoxins. Criteria for E. coli bacteria are based on a monthly geometric mean and single sample maximum. In *Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin* (EPA 822-R-19-001, page 76), EPA specified: "recommended criteria for these cyanotoxins that provide a magnitude (8 µg/L microcystins or 15 µg/L cylindrospermopsin) and duration (not to be exceeded in more than three 10-day assessment periods over the course of a recreational season)." *See* https://www.epa.gov/sites/production/files/2019-05/documents/hh-rec-criteria-habs-document-2019.pdf) EPA recommended the use of a "maximum" for swimming advisories only. NMED should justify the proposed duration as "maximum" for the cyanotoxins or change it to a monthly statistic similar to E. coli bacteria.

   b. 20.6.4.900.H(6) NMAC – Amendment to the Marginal Warmwater Aquatic Life Designated Use. NMED proposes to revise the language from "maximum temperature 32.2°C" to "temperatures that may routinely exceed 32.2°C." SJWC agrees that it is helpful to include language to distinguish between the warmwater and marginal warmwater designated uses. NMED should explain how it intends to implement this language, especially including detail on what "routinely" means.

   c. 20.6.4.900.I(1) and (2) NMAC - Proposed Revisions to Metals Tables.

i. The values for $\mathbf{m}_A$, $\mathbf{b}_A$, $\mathbf{m}_C$, $\mathbf{b}_C$ for Cadmium (Cd) and Zinc (Zn) are different than the current EPA recommended values. NMED should provide the basis for the difference. In most cases the values generate a more stringent criterion than the federal criterion.

ii. NMED should explain the basis for the Copper (Cu) and Manganese (Mn) values. EPA does not specify aquatic life criteria for those metals.

iii. EPA issued a new aluminum criterion in 2018 based on multiple linear regression (MLR) models. The criteria are a function of pH, total hardness, and dissolved organic carbon (DOC). NMED does not propose to adopt the MLR approach. NMED should explain why it is not proposing the MLR approach.

d. 20.6.4.900.I(3) NMAC. NMED proposes to amend select acute and chronic hardness-based metals criteria values for Chromium (Cr) III, Lead (Pb), Nickel (Ni), and Silver (Ag) without explanation. The equations in 20.6.4.900.I(1) and (2) NMAC have not changed. NMED should specify the reason(s) for its proposed changes.

e. 20.6.4.900.J NMAC. NMED proposes the following changes to be consistent with federal criteria pursuant to 40 CFR § 131.20. SJWC notes the following discrepancies.

i. NMED should provide the basis for the aquatic life criteria for Molybdenum, total recoverable. Currently, there are no equivalent EPA ambient water quality criteria for Molybdenum.

ii. NMED has not adopted acute and chronic criteria for Acrolein.

iii. The proposed changes for Benzene do not appear to meet the EPA recommended criteria. NMED should provide specific justification for the Benzene criteria.

iv. The human health organism only criterion for Dichlorodiphenyl-dichloroethylene (DDE) should be 0.00018 ug/L instead of 0.000018 ug/L because the surface water quality standards specify protection at 10^{-5} risk level.

Editorial Comments

1. Deletion of spacing. NMED should explain why it is proposing to delete certain spaces in the subject lines of many sections of the standards. This comment concerns the standards for which the deletion of spacing is the only proposed

change (subsections 107, 109, 111, 113-114, 117-123, 125, 127, 129-139, 201-205, 210-214, 216-219, 221-230, 301-306, 308, 310, 313–317, 401-402, 405-410, 451-453, 501, 504-505, 601-603, 701-702, 801-802, and 805-806 of 20.6.4 NMAC). NMED has proposed to include an "amendment" notation in the brackets containing the historical notes to reflect this formatting change. SJWC believes such a notation will cause confusion in the future when anyone is researching the substantive standards changes for a particular year. If the spaces proposed for deletion must be eliminated per *New Mexico Register* formatting requirements, perhaps a waiver is available that would eliminate the need to include the date of this non-substantive amendment in the history notes.

2. Definitions in General. SJWC supports the proposals to add newly defined terms and to move language from the substantive sections to the definitions.

3. 20.6.4.900.D NMAC. "Cylindropermopsin" should be "Cylindrospermopsin."

4. 20.6.4.900.J(1) NMAC. For "pentachlorobenzene," the CAS # should be 608-93-5 instead of 608-63-5.

Thank you for the opportunity to comment on NMED's proposed revisions to the State's surface water quality standards. SJWC reserves the right to supplement these comments, and to comment on any additional proposed changes, as the Triennial Review process proceeds.

Sincerely,

Aaron Chavez
Executive Director
San Juan Water Commission

GEI Consultants

January 5, 2021

Consulting Engineers and Scientists

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RE: Chevron Mining, Inc.'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,

On behalf of Chevron Mining, Inc. – Questa Mine (CMI), GEI Consultants Inc. (GEI) has reviewed the New Mexico Environment Department's (NMED's) Proposed Amendments to Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) - Triennial Review (hereafter: NMED 2020 proposal). This letter provides comments on the NMED 2020 proposal filed on behalf of CMI.

20.6.4.10 Review of Standards; Need For Additional Studies

The 2020 proposal includes slight adjustments to the language to clarify that a change to less stringent standards is allowable on a site-specific basis as long as the attainable uses are protected. GEI suggests adding a sentence to specify that the change to a less stringent standard would not trigger an antidegradation evaluation in permits where the less stringent standard is being implemented. While this is current practice, the language would provide clarity when future changes occur to standards on a site-specific basis. Proposed language below in ***blue bold italics***.

> **~~B.~~ C.** It is recognized that, in some cases, numeric criteria ~~have been adopted that reflect use designations rather than existing conditions of surface waters of the state.~~ for a particular designated use may not adequately reflect the local conditions and the adaptive nature of particular organisms to utilize a water without harm. In these cases, a water quality criterion may be modified to reflect the natural condition of a specific waterbody. ~~Narrative criteria are required for many constituents because accurate data on background levels are lacking. More intensive water quality monitoring may identify surface waters of the state where existing quality is considerably better than the established criteria.~~ When justified by sufficient data and information, a numeric ~~the~~ water quality ~~criteria~~criterion ~~will~~may be adopted or modified to a less stringent criterion and still protect the attainable uses of the waterbody ***without triggering an antidegradation review***. The modification of the criterion does not necessarily change the designated use. The removal or amendment of a designated use to a less stringent use can only be done through a use attainability analysis in accordance with 20.6.4.15 NMAC.

20.6.4.900 Aluminum

The NMED 2020 Proposal includes a recommendation to re-establish dissolved acute and chronic aquatic life criteria for aluminum in waters with pH outside the range approved by USEPA (2012) for the hardness-based aluminum criteria (pH 6.5 – 9.0) under 20.6.4.900(I) NMAC. The proposed criteria outside this pH range are fixed value acute and chronic criteria values of 750 and 87 µg/L dissolved aluminum, respectively. This proposal is being made by NMED to address and be consistent with USEPA's disapproval of the 20.6.4.900(I) NMAC aluminum criteria for use in waters outside the acceptable pH range of 6.5 – 9.0 (USEPA 2012). This disapproval also included a requirement to apply the 1988 Nationally Recommended Criteria (USEPA 1988) to waters below this pH range.

However, the new language proposed by NMED under 20.6.4.900(J)(2)(i) NMAC is not consistent with requirements of the USEPA disapproval. This new proposed language states:

> *The acute and chronic aquatic life criteria for dissolved aluminum is only applicable when the concurrent pH is outside the range established for the hardness-based total recoverable criteria for aluminum in Paragraphs (1) and (2) of Subsection I of 20.6.4.900 NMAC.* [emphasis added]

In contrast, the USEPA disapproval language only applies to waters with pH less than 6.5:

> *…EPA is disapproving the application of this equation in waters where the pH is below 6.5 as it may not be protective of applicable uses below that pH range.* [emphasis added]

Therefore, to be fully consistent with USEPA (2012) we recommend revising the proposed language under 20.6.4.900(J)(2)(i) NMAC as follows:

> The acute and chronic aquatic life criteria for dissolved aluminum is only applicable when the concurrent pH is ~~outside~~ below the lower end of the range (6.5) established for the hardness-based total recoverable criteria for aluminum in Paragraphs (1) and (2) of Subsection I of 20.6.4.900 NMAC

20.6.4.900 Dissolved Manganese

The NMED 2020 Proposal includes proposed amendments to human health organism only (HH-OO) criteria (20.6.4.900(J)(1) NMAC) for some pollutants to comply with 40 C.F.R. 131.20. For manganese, NMED proposes to add a HH-OO criterion of 0.1 mg/L which appears to be based on the 1993 national criterion USEPA. However, this value is not based on the toxic effects of drinking water exposure to humans, and instead the criterion is based only on an "observation that manganese can bioaccumulate in marine mollusks" (USEPA 1993). No other technical rationale was provided.

Given that there are no marine waters in New Mexico, GEI believes that this criteria value is inappropriate for the freshwaters of New Mexico. Therefore, we suggest that NMED withdraw its proposed addition of the 0.1 mg/L HH-OO criterion value for use with 20.6.4.900(J)(1) NMAC.

Please feel free to contact us should you require any additional information.

Sincerely,
GEI Consultants, Inc.

Natalie Love
Laboratory Director

Robert W. Gensemer, Ph.D.
Vice President, Senior Ecotoxicologist

Cc: Cynthia Gulde, Chevron Mining Inc.
Louis W. Rose, Montgomery & Andrews, P.A.

References

U.S. Environmental Protection Agency (USEPA). 1988. Ambient aquatic life water quality criteria for aluminum. August 1988. United States Environmental Protection Agency. Office of Water, Regulations and Standards, Criteria and Standards Division. Washington, D.C. EPA-440-5-88-008.

U.S. Environmental Protection Agency (USEPA). 1993. Drinking Water Criteria Document for Manganese. USEPA Office of Water, Cincinnati, OH. ECAO-CIN-D003.

U.S. Environmental Protection Agency (USEPA). 2012. Letter Dated April 30, 2012 from William K. Honker, USEPA Region 6 to James P. Bearzi, New Mexico Environment Department.

From:	Joni Arends
To:	Fullam, Jennifer, NMENV
Subject:	[EXT] CCNS Comments about Triennial Review
Date:	Wednesday, January 6, 2021 4:58:12 PM
Attachments:	BDDB Nov. 16 2020 Triennial Review.pdf

January 6, 2021

Sent via email to: jennifer.fullam@state.nm.us

Ms. Jennifer Fullam
Standards, Planning & Reporting Team Leader
Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr.
Santa Fe, NM 87505

Re: Comments about the New Mexico Environment Department's Proposed Amendments to New Mexico's Water Quality Standards (20.6.4 NMAC) Triennial Review

Dear Ms. Fullam:

Concerned Citizens for Nuclear Safety ("CCNS") submits the following comments in response to the New Mexico Environment Department Surface Water Quality Bureau's ("NMED") request for comments on draft proposed changes to 20.6.4 NMAC as part of the Triennial Review of Water Quality Standards. As you know, one of the primary facilities that CCNS addresses is the NMED-regulated Los Alamos National Laboratory ("LANL"). These comments address those sections that apply to LANL.

Waters Within Los Alamos National Laboratory (20.6.4.126 NMAC, 20.6.4.128 NMAC and 20.6.4.140 NMAC)

The proposed changes for the classified segments of waters within Los Alamos National Laboratory are appropriate and necessary for protecting water quality on the Pajarito Plateau and the Rio Grande. These proposed changes appropriately apply the same level of protections as provided to other waters in state.

Nevertheless, CCNS notes and supports the November 16, 2020 comments of the Buckman

Direct Diversion Board, which are attached to these comments. We excerpt portions below:

> Many stream segments on the Pajarito Plateau outside of lands managed by the U.S. Department of Energy ("USDOE") within LANL are listed as impaired, with NMED noting in its draft CWA §303(d)/305(b) Integrated Report ("Integrated Report") that application of the Hydrology Protocol resulted in a classification of segments or subsegments as ephemeral, intermittent, or perennial. However, for Segment 128 waters, the Board is concerned that the parties to the Joint Stipulation Regarding Proposed Changes to 20.6.4.128 NMAC (i.e., NMED, LANL, the USDOE, and Amigos Bravos) have not fully implemented the Stipulation by applying the Hydrology Protocol to all waters on the Plateau. **This could result in perennial waters receiving the lesser protections of ephemeral streams, and therefore not being assessed as impaired when in fact they are.** The Board also notes that for Segment 128 waters listed as impaired none are as yet subject to TMDLs, a necessary first step to improving water quality, despite being listed as impaired for, in some cases, over ten years. **In the absence of TMDLs NMED should propose new standards based on full implementation of the Stipulation.** [Emphasis added.]
>
> General Procedural Comments
>
> The Board is nevertheless concerned that NMED is engaging in the Triennial Review at the same time it is developing the Integrated Report. **As the List of Impaired Waters contained in the Integrated Report is intended to inform changes to State Standards, NMED does not have the benefit of transparently using the most current assessments in its amendments to be proposed to the WQCC.** We ask NMED to consider allowing the Integrated Report process to proceed to its completion before NMED proposes amendments to State Standards to the WQCC. [Emphasis added.]

As you know, the time between the Triennial Reviews is often too long - sometimes double or more of the regulatory required three-year review period. For example, the last Triennial Review began in 2013 – a seven-year period. https://www.env.nm.gov/surface-water-quality/2013-triennial-review/ Before the 2013 Triennial Review, the Triennial Review began in or about 2004 – a nine-year period of time. For those concerned about LANL pollutants harming water quality and water uses on the Pajarito Plateau, it is essential for NMED to complete the Integrated Report first before proposing amendments to the State Standards to the WQCC.

CCNS and our members cannot wait until 2028 or 2030 for the next Triennial Review to learn what NMED proposed amendments were submitted to the WQCC – and then go

through the Triennial Review process to accept or challenge those State Standards.

CCNS Recommendation: We also recommend NMED complete the Integrated Report process before it proposes amendments to the New Mexico Standards at 20.6.4.126 NMAC (perennial waters); 20.6.4.128 NMAC (ephemeral waters), and 20.6.4.127 (perennial waters); 20.6.4.140 NMAC (non-perennial waters) for waters on the Pajarito Plateau in the Rio Grande Basin.

CCNS appreciates the opportunities for public engagement and comment. We look forward to participating in the Triennial Review hearing. Thank you for carefully considering these comments. Please do not hesitate to contact me should you need further clarification or information about the issues we have raised.

Sincerely,

Joni Arends, Executive Director
Concerned Citizens for Nuclear Safety
P. O. Box 31147
Santa Fe, NM 87594-1147
505 986-1973
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Attached: November 16, 2020 Comments of the Buckman Direct Diversion Board about the Triennial Review

Amigos Bravos • Audubon New Mexico • Defenders of Wildlife • Flower Hill Institute • Gila Resources Information Project • Honor Our Pueblo Existence • Molino de la Isla Organics LLC • New Mexico Environmental Law Center • New Mexico Wild • New Mexico Wildlife Federation • Partnership for Earth Spirituality • Rio Grande Restoration • Rivers and Birds • Sierra Club, Rio Grande Chapter • Tewa Women United • Trout Unlimited • Upper Pecos Watershed Alliance • Western Environmental Law Center

January 6, 2021

Jennifer Fullam
Standards, Planning & Reporting Team Leader
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New Mexico Environment Department
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Santa Fe, NM 87505

Sent via email to: jennifer.fullam@state.nm.us

RE: Comments on the New Mexico Environment Department's Proposed Amendments to New Mexico's Water Quality Standards (20.6.4 NMAC) – Triennial Review

Dear Ms. Fullam,

The undersigned organizations submit the following comments in response to the New Mexico Environment Department Surface Water Quality Bureau's ("NMED") request for comments on draft proposed changes to 20.6.4 NMAC as part of the Triennial Review of Water Quality Standards. Collectively, we represent thousands of New Mexicans that care about protecting clean water in New Mexico for drinking, irrigation, wildlife, recreation, and spiritual practices and traditions. We have come together to submit these comments with a common goal of ensuring that New Mexico's water quality standards support the diverse human and non-human uses of our state's water resources.

As a primary matter, we emphasize the State's obligation, pursuant to the Clean Water Act ("CWA"), to "protect the public health or welfare, enhance the quality of water," and wherever possible, ensure that water quality allows for the "protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." 33 U.S.C. § 1313(c)(2)(A); 33 U.S.C. § 1251(a)(2). Similarly, the New Mexico Water Quality Act ("WQA") directs the Commission to adopt standards that "shall at a minimum protect the public health or welfare, enhance the quality of water and serve the purposes of the Water Quality Act." NM Stat. 74-6-4(D). These goals, in particular the emphasis on standards that enhance the quality of water, represent a fundamental truth in New Mexico: that water is the lifeblood of our communities, ecosystems, economy, and way of life.

Below, we provide recommendations on priorities for NMED to consider during the Triennial Review as well as comments on NMED's specific proposed amendments

I. PRIORITY ISSUES TO INCLUDE DURING THE 2021 TRIENNIAL REVIEW

We are fully cognizant that NMED is constrained by an inadequate budget and lack of staff resources. Nonetheless, there are numerous issues that we urge NMED to proactively consider during this Triennial Review.

A. Outstanding Waters (20.6.4.8 NMAC and 20.6.4.9 NMAC)

1. Waters in the Columbine Hondo Wilderness

It was the understanding of the undersigned organizations that NMED planned to nominate the waters in the Columbine Hondo Wilderness area as an Outstanding National Resource Water ("Outstanding Water") during this Triennial Review. NMED communicated its intention to add these waters to the existing wilderness Outstanding Waters to several representatives of the undersigned organizations during in-person meetings and conversations. We are disappointed that NMED has not included nominating these waters in its proposed changes at this time.

As background, in 2010, the NMED, the Energy Minerals and Natural Resources Department ("EMNRD") and the New Mexico Department of Game and Fish ("NMDGF") nominated all the waters in United States Department of Agricultural Forest Service Wilderness Areas as Outstanding Waters and the Water Quality Control Commission ("WQCC") subsequently designated these waters. The Columbine Hondo Wilderness had not yet been designated at that time and thus the waters of the Columbine Hondo were not included in this 2010 designation. Moreover, at the time of the 2010 nomination, NMED, EMNRD, and NMDGF did not provide detailed information about why every single waterbody in every New Mexico wilderness area met the Outstanding Water criteria at 20.6.4.9.B NMAC. Instead, information about why wilderness waterbodies as a class of waterbodies as a whole met these criteria was presented. The Columbine Hondo has since been officially designated as wilderness, and the waters within the Columbine Hondo now fall into this class waterbodies and meet the criteria laid out in the 2010 nomination. Thus, if NMED decided to move forward with nominating these waters, the bulk of the work has already been completed.

In addition, nominating the waters of the Columbine Hondo as Outstanding Waters meets objectives set out by Governor Lujan Grisham in her 2019 Climate Plan where she identified nominating Outstanding Waters as an important step for mitigating the impacts of a changing climate. While that language has since been removed, it does not obviate the imperative to strengthen protections for New Mexico's watersheds as a mechanism to bolster climate resilience.

Recommendation: We strongly urge NMED to nominate the waters of the Columbine Hondo as Outstanding Waters during the Triennial Review.

2. Change "Outstanding National Resource Waters" to "Outstanding Waters"

The unwieldy name of Outstanding National Resource Waters (ONRWs) is constantly being confused and mixed up. People consistently call them Outstanding *Natural* Resource Waters or mix up the order of the letters in the acronym and call them ORNWs or some other combination. We

suggest that NMED seek a change in name from "Outstanding National Resource Waters" to "Outstanding Waters." Not only will this make the name easier to remember, but it will also clear up the common misconception that ONRW protections are a federal designation, when in fact ONRWs are designated at the state level by the New Mexico Water Quality Control Commission.

While there may be some argument for maintaining the existing name due to the fact that ONRW protections are laid out in the federal Clean Water Act and associated regulations (specifically in Tier III of the federal antidegradation policy), these federal requirements and connections will not disappear by changing the name to something more approachable and easier to remember. This is especially the case if it is explicitly stated in 20.6.4 NMAC that Outstanding Waters are protected under Tier III of the federal antidegradation policy.

Other states have, notably, adopted different names for their Tier III waters. Pennsylvania for example calls their Tier III waters "Exceptional Value Waters." Alternatively, instead of replacing the name completely, NMED could consider a different abbreviation of Outstanding National Resource Waters. Instead of "ONRW," the abbreviation could be changed to "Outstanding Waters" throughout the 20.6.4 NMAC

Recommendation: Replace the name "Outstanding National Resource Waters" or "ONRW" or both with "Outstanding Waters".

3. Strengthen Outstanding Waters Implementation

Changes to the antidegradation policy and implementation plan are needed to ensure that appropriate steps are taken to address degradation to Oustanding Waters. Currently, the Outstanding Waters language found at 20.6.4.8.A(3)(a) and (4)(a) NMAC consists primarily of constraints on degradation to Outstanding Waters from future restoration or emergency activities. While these components of the standards are important to ensure that restoration and emergency activities can occur, protections should be expanded in 20.6.4.8 NMAC to prevent and at least mitigate *ongoing* degradation.

To do this, we recommend adopting specific requirements and steps in 20.6.4.8 NMAC to actively ensure that degradation is not occurring in New Mexico's designated Outstanding Waters from either ongoing or other proposed activities. Currently, all of the Outstanding Waters in New Mexico are on U.S. Forest Service (USFS) lands which, by law, must conform to state-defined water quality standards. 33 U.S.C. § 1323(a). 20.6.4.8.B NMAC should include requirements for cross agency consultation and engagement. 20.6.4.8.B NMAC could also outline how implementation of Outstanding Waters protection shall be assessed and summarized in the Clean Water Act 303d/305b Report. When degradation is found to Outstanding Waters, 20.6.4.8 NMAC should include requirements to sample more frequently, engage with landowners and other stakeholders to identify sources of degradation, prioritize restoration dollars in these waters, and prohibit all short and temporary degradation besides that associated with restoration.

Recommendation: Consider adding language along the lines of the following:

20.6.4.8.A Antidegradation Policy

(5) If degradation, besides the short-term degradation allowed under Subsection A(3)(a) through (e) and Subsection A(4) of this Section, is detected in an Outstanding Water:

(a) no additional short-term degradation, besides that allowed under Subsection A(4) and A(3)(c) shall be allowed;

(b) increased monitoring of the Outstanding Water by the Department at a frequency of at least once a year shall be conducted; and

(c) additional actions as outlined in the continuing planning process shall be initiated to determine the source of the degradation and to identify mitigating measures.

~~(5)~~ **(6)** In those cases where potential water quality impairment associated with a thermal discharge is involved, this antidegradation policy and implementing method shall be consistent with Section 316 of the federal Clean Water Act.

~~(6)~~ **(7)** In implementing this section, the commission through the appropriate regional offices of the United States environmental protection agency will keep the administrator advised and provided with such information concerning the surface waters of the state as he or she will need to discharge his or her responsibilities under the federal Clean Water Act.

20.6.4.8.B. Implementation Plan

(3) assesses the probable impact of the effluent on the receiving water relative to its ~~attainable~~ **existing** or designated uses and numeric and narrative criteria;

(**16**) develops list of surface waters of the state not attaining designated uses, pursuant to Sections 305(b) and 303(d) of the federal Clean Water Act**; and**

(17) develops list of designated Outstanding Waters where degradation has been detected and identifies potential sources of pollution, enforcement actions to be taken, and BMPs to be implemented to halt or remedy the degradation.

B. Definition of Existing Use (20.6.4.7.E(4))

We recommend amending this definition to include language from EPA's Water Quality Standards Handbook[1] to clarify how an existing use is demonstrated.

Recommendation: Add the following language to the definition of "existing use":

(4) "Existing Use" means a use actually attained in a surface water of the state on or after November 28, 1975, whether or not it is a designated use. **An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975; or that the water quality is suitable to allow the use to be attained.**

C. Definition of Highest Attainable Use (20.6.4.7.H NMAC)

The "highest attainable use" is referred to several times in the standards and it would be helpful to define it in 20.6.4.7 NMAC. We recommend incorporating the definition for highest attainable use included in Clean Water Act regulations.[2]

Recommendation: Add a definition for "highest attainable use" to 20.6.4.7.H(4):

[1] https://www.epa.gov/sites/production/files/2014-10/documents/handbook-chapter4.pdf (page 4).

[2] Definition found at 40CFR131.3

(4) "Highest attainable use" is the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Act and attainable, based on the evaluation of the factor(s) in 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability.

D. Critical Low Flow (20.6.4.11.B NMAC)

Critical low flow is another area of the standards that should be updated to reflect the impacts of climate change. Climate change causes or contributes to increased drought and flashier flows in New Mexico's waters. More regular attention to calculating the critical low flow is therefore needed. At a minimum, we suggest requiring that 4Q3 be freshly calculated during every permit renewal process.

Recommendation: Add the following language to 20.6.4.11.B NMAC:

(3) Critical low flow of receiving waters shall be calculated during permit issuance, modifications, and renewals.

E. Mixing Zones (20.6.4.11.E and F NMAC)

Climate change is causing or contributing to massive, previously unseen, fluctuations of flow in New Mexico's rivers and streams, making it impossible to ensure that mixing zones are protective. If the flow in a receiving waterbody swings from large flood events to very low flows, as we can expect, and in fact are already seeing in a changing climate, it is difficult to determine the dilution factor to use to calculate a mixing zone. In addition, increased flooding events can result in increased pollutant loads in receiving waters from many different sources, making mixing zones all the more inappropriate. Our concern is amplified by the fact that climate change is not a static event, but ongoing and intensifying event that will, even if we constrain fossil fuel and other carbon emissions, transpire for decades and even centuries. Therefore, a concrete step to make New Mexico standards more responsive to climate change is to stop allowing mixing zones.

Recommendation: Eliminate mixing zones in New Mexico as an appropriate step in response to the massive, ongoing changes and fluctuations in flow we are seeing and expect to see as a result of a changing climate.

F. Applicability of Water Quality Standards – Exceptions (20.6.4.11.H(1))

It is not clear whether or how increased storm events due to climate change taken into account by this section. It appears that this section of the standards could be read to exempt climate change impacts, such as increased intensity of storm events and faster spring runoff, from applicability of water quality standards. Even without considering climate change impacts, this section is inappropriately broad and we recommend deleting it.

NMED itself has identified stormwater as "a leading cause of water pollution" in New Mexico.[3] It does not make sense to have a whole exception for the applicability of water quality standards

[3] New Mexico Environment Department/Surface Water Quality Bureau (NMED/SWQB). 2020. 303d/305b Report for 2020-2022. Santa Fe, NM. Pg. 52. Available at: https://www.env.nm.gov/surface-water-quality/wp-content/uploads/sites/25/2018/03/WQCC-approved-2020-IR_120820.pdf

during storm events. Fish still swim in our rivers during storm events and need dissolved oxygen to breathe. People boat and swim in waters that have stormflow impacts. In some cases, these impacts can be seen hours or even up to a day after a storm event. In addition, it is difficult to understand how this exception is implemented. For example, how does NMED determine what contaminants in stormwater runoff are from natural causes? Many of the contaminants we see in stormwater are from poor land use management, which certainly is not "natural".

Climate change adds another layer of complexity and difficulty in implementing this exception, because with a changing climate we are likely to see increased intensity of storm events that will result in increased pollutant loading. Climate change is driven by anthropogenic factors upsetting natural climatic and ecological regimes, and water quality impacts from climate change should not be folded into this exception. We therefore strongly recommend deleting this section. However, if it remains in the standards, NMED should add language to constrain this section so that designated uses are better protected. Specifically, language could be added to exclude climate change impacts from this exception.

Recommendation: We strongly propose deleting this section (20.6.4.11.H(1)) in its entirety. At the very least, impacts from climate change should be specifically excluded:

> H. Exceptions: Numeric criteria for temperature, dissolved solids, dissolved oxygen, sediment or turbidity adopted under the Water Quality Act do not apply when changes in temperature, dissolved solids, dissolved oxygen, sediment or turbidity in a surface water of the state are attributable to:
>
> (1) natural causes (**water quality impacts from climate change and** discharges from municipal separate storm sewers are not covered by this exception.); or

G. Compliance with Water Quality Standards (20.6.4.12.G NMAC)

We recommend putting constraints on compliance schedules to guard against overuse and abuse of this important tool. For example, we suggest adding a time limit of 5-years and requirements for revisiting compliance schedules during permit renewals. In addition, if a permit is administratively extended, any compliance schedule included in the permit should be reviewed 5-years after issuance of the permit.

Recommendation: Include time constraints and review requirements for compliance schedules:

> G. ……Compliance schedules may be included in NPDES permits at the time of permit renewal or modification and shall be written to require compliance at the earliest practicable time, **but not longer than 5-years.** Compliance schedules shall also specify milestone dates so as to measure progress towards final project completion (e.g., design completion, construction start, construction completion, date of compliance). **If a permit is administratively continued, a facility with a compliance schedule must show compliance at end of the initial 5-year permit period.**

H. Incorporate Produced Water Constituents into 20.6.4.900 NMAC

With the passage of HB 546, it is imperative that NMED take steps to identify and propose adoption of numeric criteria for the numerous contaminants that are found in produced water to ensure that these constituents can be properly regulated and monitored. We urge NMED to begin the process of developing numeric criteria for the numerous constituents that are found in produced water that do not currently have numeric water quality standards in 20.6.4 NMAC.

There is substantial data available, including in many cases approved analytical methods, for close to 200 constituents found in produced water for which New Mexico currently does not have standards. We urge NMED to look at the list submitted by the Environmental Defense Fund ("EDF") on 12/9/20 as part of this comment period to see if there are some easy-to-implement criteria, in terms of available data and information, that would enable NMED to propose several constituents during the current Triennial Review.

In addition, we urge NMED to immediately begin to develop numeric criteria to propose for adoption within the next 2 years. While we realize that developing numeric criteria can be a long and arduous process, it is essential that the standards are robust enough to protect the existing and designated uses of New Mexico's water resources *before* produced water is discharged into surface waterbodies.

Recommendation: Identify constituents found in produced water for which there is available data for inclusion in 20.6.4.900 NMAC during the current Triennial Review. In addition, start now to develop numeric criteria for the close to 200 constituents common in produced water for which we currently do not have a standard.

I. Propose Standards for PFAS

PFOA and PFOS belong to a large class of synthetic chemicals known as per- and polyfluoroalkyl substances, or PFAS. PFAS contamination is a major water quality issue facing New Mexico that has resulted in economic losses to our state's dairy industry and substantial impacts to public health and wildlife populations. Other states are starting to adopt numeric standards for PFAS and New Mexico could easily learn from and borrow from these efforts. For example, New Jersey has recently adopted the following PFAs criteria for drinking and groundwater:

- 14 parts per trillion for PFOA
- 13 parts per trillion for PFOS

Minnesota has recently set the following PFAS standards for several surface waterbodies:

- 0.37 nanograms PFOS per gram (ng/g) in fish tissue
- 0.05 ng/L PFOS in water

Recommendation: We urge NMED to propose numeric criteria for PFAS to apply at a minimum to the public water supply use.

J. Develop and Propose Wetland Specific Water Quality Standards.

Developing wetland water quality criteria is a critical step the state could take to help New Mexico mitigate the impacts of the changing climate and the impacts from the disastrous Dirty Water Rule. Wetlands, especially in the arid west, provide many critical functions to downstream users, wildlife, and communities and protecting these resources should be a priority. For example, wetlands can

help sustain flows in our streams throughout the growing season by soaking up snowmelt and then gradually releasing water to create more sustained downstream flows. In addition, wetlands can serve to filter pollutants, help with flood control, and provide wildlife habitat. We need to be able to identify which wetlands are impaired so we can work to mitigate impacts and prioritize restoration. Wetland water quality standards would help the state protect and restore the limited remaining wetland resources in New Mexico.

Recommendation: Develop and proposed wetland specific water quality standards.

II. COMMENTS ON NMED'S PROPOSED AMENDMENTS

Generally, we thank NMED for including language on climate, emerging contaminants, and toxic pollutants. Our specific comments below are organized in order that these topics appear in the standards.

A. Executive Order on Climate Change (20.6.4.6.D NMAC)

We support the inclusion of the reference to the 2019 Executive Order on Climate Change and thank NMED for including it in its proposed changes. It would be useful to contextualize how climate change is expected to impact water quality in this section, otherwise this section and the definition of climate change provided at 20.6.4.7.C(4) NMAC are left hanging there without a reference point. NMED has done a good job of detailing the climate change impacts that we are seeing and expect to see on New Mexico's water quality in its proposed 2020-2022 303b/305b Report. We recommend adding this 303d/305b language to this section as proposed below.

Recommendation: Considering adding the following language to 20.6.4.6.D:

> D. In accordance with Executive Order On Addressing Climate Change And Energy Waste Prevention (2019-003), these standards serve to address the inherent threats to water quality due to climate change by setting water quality goals and fostering resiliency. **The impact of climate change on the state's water resources should be acknowledged because the science shows that these changes will lead to further problems and uncertainties. Droughts are predicted to increase in both frequency and severity in many regions of the world, including the southwestern U.S., due to climate change. In general, droughts and the immediate recovery period have substantial water quality effects on the waterbody and its watershed. For example, decreases in stream flow typically increase pollutant concentrations due to evaporation and less dilution. Other water quality impacts associated with climate change and drought include higher water temperatures, enhanced algal production, toxic algal blooms, and lower dissolved oxygen levels, all of which are stressors to aquatic life. As temperature and precipitation patterns undergo extreme cycles, more frequent and more powerful storms will increase pollutant runoff from the watershed, physically modify and erode riparian habitat, and disrupt biological communities that depend on these habitats. In addition, shifting temperature and precipitation patterns affect vegetation composition and density and increase the propensity for wildfire in non-fire adapted ecosystems.**

B. Definition of Baseflow (20.6.4.7.B(1) NMAC)

While we support adding a definition of baseflow to the standards, we question the need to reference effluent dominated systems. This is particularly so because it appears that this reference

then appears to result in the need to add a problematic definition of effluent dominated systems under 20.6.4.7.E(2) NMAC. Referencing effluent dominated systems does not add to the definition of baseflow and we therefore recommend removing the reference.

Recommendation: Amend the Baseflow definition to remove reference to effluent dominated systems:

> (7) "Baseflow" refers to the sustained flow volume of a stream or river. In natural systems, baseflow is comprised from regional groundwater inflow and local shallow subsurface inflow that is temporarily stored in the watershed during snowmelt and rain events and slowly released to the stream or river over time. ~~In effluent dominated systems,~~ **In some systems,** baseflow is comprised predominantly from effluent with little to no subsurface contributions. Baseflow in both scenarios is critical for sustaining flow in streams and rivers over seasonal and longer timeframes.

C. Definition of Climate Change (20.6.4.7.C(4) NMAC)

Adding a definition of climate change to the standards is appropriate and helpful in positioning the state to be responsive to the challenges that climate change poses to water quality in New Mexico. It would be helpful to include the language suggested above for 20.6.4.6.D NMAC to provide guidance as to how climate change is relevant to water quality to provide more context for this definition. In addition, we recommend clarifying that impacts from climate change are not natural causes.

Recommendation: Include the following clarification in the climate change definition:

> (4) Climate Change refers to any significant change in the measures of climate lasting for an extended period of time and includes major changes in temperature, precipitation, wind patterns or other effects, that occur over several decades or longer. **Climate change is not considered a natural cause of water quality impairment.**

D. Contaminants of Emerging Concern (20.6.4.7.C(7) NMAC)

We support the addition of this definition and thank NMED for proposing it in its proposed amendments. In addition to referencing pharmaceuticals and personal care products, we recommend also listing per- and polyfluoroalkyl substances (PFAS) as an example of a contaminant of emerging concern, especially if NMED is not going to suggest adding a numerical PFAS water quality standard. In addition, we suggest adding language taken from EPA's definition of contaminants of emerging concern[4] where they detail the impacts of these contaminants to aquatic life.

Recommendation: Consider changing the definition as follows:

> (7) "Contaminants of Emerging Concern" refers to water contaminants, including **per- and polyfluoroalkyl substances (PFAS),** pharmaceuticals, and personal care products, that may cause ecological or human health impacts at low concentrations. Contaminants of emerging concern are generally chemical compounds, that although

[4] https://www.epa.gov/wqc/contaminants-emerging-concern-including-pharmaceuticals-and-personal-care-products

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. **Emerging contaminants may demonstrate low acute toxicity but cause significant reproductive effects at very low levels of exposure. In addition, the effects of exposure to aquatic organisms during the early stages of life may not be observed until adulthood.**

E. Definition of Effluent Dominated (20.6.4.7.E(2) NMAC)

We question the need for this definition and suggest that NMED remove it from its proposed amendments. While it is unclear how NMED intends to use this definition, it appears that perhaps the definition was added only in response to the new definition for baseflow, which includes a mention of effluent dominated waters. As noted above, it is not necessary to include the term effluent dominated in the baseflow definition. Adding this definition may only cause confusion as there are several effluent dominated systems included in classified segments under 20.6.4.101-899 NMAC with specific standards, including protections for primary contact. If NMED does move forward with this definition, we recommend either removing the secondary contact reference from the definition, or making the definition more seasonally specific than a 12-month average. For example, there could be high natural seasonal flows that allow some primary contact in waters where the 12-month average was still three quarters effluent.

F. Definition of Persistent Toxic Pollutants (20.6.4.7.P(3) NMAC)

We thank NMED for including this definition and support its inclusion in the standards.

G. Antidegradation – Existing Uses (20.6.4.8.A(1) NMAC)

To ameliorate confusion, it would be helpful to include additional language defining how to identify existing uses, either here in this section or in the definition section as we have proposed above.

Recommendation: Include the following language from EPA's Water Quality Standards Handbook either here in this section or in the definition section as suggested in our comment above: "An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975; or that the water quality is suitable to allow the use to be attained."

H. Review of Standards (20.6.4.10 NMAC)

1. 20.4.6.10.B NMAC

The addition of proposed Section 20.6.4.10.B is helpful and provides useful clarity and guidance to ensure that existing uses are protected.

2. Proposed 20.6.4.10.C NMAC

This section in general is confusing and unnecessary and seems aimed at providing flexibility that is already provided in 20.6.4.10.E and F. NMAC. We suggest entirely deleting this section.

In addition, the proposed language of this section focuses entirely on downgrading criteria without presenting avenues for setting more protective criteria. If NMED does not propose to delete this section, we recommend making changes to reflect the ability to set more protective criteria.

Recommendation: We strongly recommend deleting proposed 20.6.4.19.C NMAC in its entirety. If NMED is unwilling to propose deleting this section in its entirety we suggest the following changes to NMED's proposed language:

> C. It is recognized that, in some cases, numeric criteria for a particular designated use may not adequately reflect the local conditions and the adaptive nature **or lack thereof** of particular organisms to utilize a water without harm. In these cases, a water quality criterion may be modified to reflect the natural condition of a specific waterbody. When justified by sufficient data and information, a numeric water quality criterion may be adopted or modified to ~~a less stringent criterion and still~~ protect the attainable uses of the waterbody. The modification of the criterion does not necessarily change the designated use. The removal or amendment of a designated use to a less stringent use can only be done through a use attainability analysis in accordance with 20.6.4.15 NMAC.

3. Proposed 20.6.4.10.D. NMAC

Similar to our comments for 20.6.4.10.C above, this section appears redundant and unnecessary given the flexibility provided in 20.6.4.10.E and F. NMAC. We propose deleting this section in its entirety.

Recommendation: Delete proposed section 20.6.4.10.D NMAC in its entirety.

I. Toxic Pollutants (20.6.4.13.F NMAC)

The reference to toxic pollutants found in 20.6.2 NMAC is useful, and we support this proposed change. All too often the surface and groundwater bureaus are siloed into separate worlds when in reality groundwater and surface water are very much connected and interrelated. We urge NMED to explore additional ways to create crossover between the two agencies.

J. Use Attainability Analysis (20.6.4.15 NMAC)

1. Mechanism to Remove a Designated Use (20.6.4.15.B)

In addition to referring to the Hydrology Protocol, the Interim Economic Guidance, and the Technical Support Manual, this section should also refer back to the applicable sections of 20.6.4.10 NMAC, such as sections 20.6.4.10.A(1)(a)-(b).

2. Definition for Highest Attainable Use Should be added to 20.6.4.15.C

A definition for "highest attainable use" should be added to section 20.6.4.7 NMAC and referenced here in this section.

3. The Formatting and Headings are confusing for 20.6.4.15.D

The formatting and headings in this section are confusing and should clarified.

Recommended changes to the formatting and headings of 20.6.4.15.D and E:

> D. Process to remove a designated use and establish the highest attainable use.
> ~~(1)~~ The process for developing a use attainability analysis and petitioning the commission for removing a designated use and establishing the highest attainable use shall be done in accordance with the State's current *Water Quality Management Plan/Continuing Planning Process*.
>
> **E. Process for Department conducted expedited use attainability analyses and determination for highest attainable use.**
> ~~2)~~ **(1)** If the findings of a use attainability analysis, conducted by the department, in accordance with the department's *Hydrology Protocol* (latest edition), demonstrates 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 process in accordance with the State's current *Water Quality Management Plan/Continuing Planning Process*. The following elements must be met for the expedited use attainability analysis process to be authorized and implemented:
> (a) The department is the primary investigator of the use attainability analysis;
> ……..
> (g) The department submitted the use attainability analysis and response to comments to region 6 EPA for technical approval.
> **(h)** If technical approval is granted by region 6…..

4. Current Proposed Section 20.6.4.15.E Should be Better Formatted

This section currently stands out because it is one long paragraph. It should be broken out into subsections as is done in other parts of the standards. To provide clarity about what steps must be taken by outside parties when conducting a UAA, this section should be formatted in a manner with subsections that is similar to other sections in the standards.

Recommendation: Reformat this section to include subsections.

K. Waters Within Los Alamos National Laboratory (20.6.4.126 NMAC, 20.6.4.128 NMAC and 20.5.4.140 NMAC)

The proposed changes for the classified segments of waters within Los Alamos National Laboratory are appropriate and necessary for protecting water quality on the Pajarito Plateau. These proposed changes appropriately apply the same level of protections provided to other waters in state.

L. Pecos River – Brantley Reservoir Upstream to Salt Creek (near Acme) (20.6.4.231 NMAC)

We support the creation of this new segment and the change to a more protective contact use (from secondary to primary contact) for this stretch.

We thank NMED for its thoughtful work during this Triennial Review process. We appreciate the opportunities for public engagement and comment and we look forward to participating in the

Triennial Review hearing. Thank you for considering these comments and please do not hesitate to reach out if you need further clarification or information on any of the issues we have raised.

Sincerely,
Rachel Conn
Amigos Bravos
rconn@amigosbravos.org

Judy Calman
Audubon New Mexico
judy.calman@audubon.org

Michael Dax
Defenders of Wildlife
mdax@defenders.org

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Joseph Toledo
Flower Hill Institute and Cultural Advisor and Leader for Jemez Pueblo
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Allyson Siwik
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Frank Adelo
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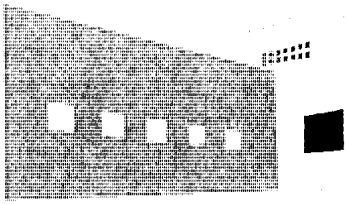
Erik Schlenker-Goodrich
Western Environmental Law Center
eriksg@westernlaw.org



NM Commission of Public Records
1205 Camino Carlos Rey
Santa Fe, NM 87507 US
(505) 476-7902

Invoice

BILL TO
Environment Department - Water Protection Division
1190 St Francis Dr.
Santa Fe, NM 87502

INVOICE #	DATE	TOTAL DUE	DUE DATE		ENCLOSED
5304	01/26/2021	$222.00	01/26/2021		

VOLUME	ISSUE	P.O. NUMBER
XXXII	2	66700-0000036530

DATE	DESCRIPTION	QTY	RATE	AMOUNT
01/26/2021	**NM Register - 431902** Notice of Public Hearing For Amendments to 20.6.4 NMAC Triennial Review of Standards For Interstate and Intrastate Surface Waters, hearing date: 7/13/2021	74	3.00	222.00

Thank you for your business!

BALANCE DUE **$222.00**

NMED Exhibit 96

Affidavit of Publication in New Mexico Register

I, Matthew Ortiz, certify that the agency noted on Invoice # 5304 has published legal notice of rulemaking or rules in the NEW MEXICO REGISTER, VOLUME XXXI, that payment has been assessed for said legal notice of rulemaking or rules, which appears on the publication date and in the issue number noted on Invoice # 5304, and that Invoice # 5304 has been sent electronically to the person(s) listed on the *Billing Information Sheet* provided by the agency.

Affiant: _____
Matthew Ortiz

Subscribed, sworn and acknowledged before me this 24th day of January, 2021.

Notary Public: _____
My Commission Expires: 2/19/2024

OFFICIAL SEAL
PAMELA ANNE LUJAN Y VIGIL
Notary Public
State of New Mexico
My Comm. Expires 2/19/2024

Notices of Rulemaking and Proposed Rules

ENVIRONMENT DEPARTMENT

NOTICE OF PUBLIC HEARING FOR AMENDMENTS TO 20.6.4 NMAC TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

The Water Quality Control Commission ("WQCC") will hold a public hearing beginning **on July 13, 2021**, following the regularly scheduled WQCC public meeting and continuing thereafter as necessary via the WebEx online meeting platform. The videoconference's Meeting ID and Password, videoconference link, and telephone numbers are as follows:

Beginning Tuesday, July 13, 2021:
To connect via video conference, go to:
Meeting link: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6
Meeting number: 177 706 1008
Password: phQAE7KmR47
Host key: 171483
Join by video system
Dial 1777061008@nmed-oit.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join by phone
+1-415-655-0001 US Toll
Access code: 177 706 1008
Global call-in numbers

Please visit the WQCC website prior to the hearing for any updates: https://www.env.nm.gov/water-quality-control-commission/wqcc/. The purpose of the hearing is to consider proposed amendments to 20.6.4 NMAC, Standards for Interstate and Intrastate Surface Waters. These amendments have been proposed as a result of a review of state water quality standards and reflect updates to those standards as required by the federal Clean Water Act and the state Water Quality Act.

The proposed amendments to 20.6.4 NMAC may be reviewed online at https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Due to restrictions currently in place by the Governor's Executive Orders and various emergency public health orders designed to protect the public and prevent the spread of the Novel Coronavirus Disease – 2019 (COVID-19), the WQCC Administrator's office is closed to the public. Therefore in-person review of the proposed amendments is not possible at this time. Persons who wish to review a physical copy of the proposed amendments should contact the WQCC Administrator at the address provided below.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views, and arguments, orally or in writing; to introduce exhibits; and to examine witnesses.

Pursuant to 20.1.6.202 NMAC and the Procedural Order issued by the hearing officer on November 9, 2020, those wishing to present technical testimony must file a written notice of intent to present technical testimony with the WQCC Administrator **on or before 5:00 p.m. Mountain Daylight Time on April 12, 2021**, 92 days prior to the hearing. Notices of intent to present technical testimony should reference the name of the regulation, the date of the hearing, and the docket number, **WQCC 20-51(R)**.

The form and content of the notice of intent to present technical testimony shall:
* Identify the person for whom the witness(es) will testify;
* Identify each technical witness the person intends to present and state the qualifications of that witness, including a description of their education and work background;
* Include a copy of the full written direct testimony of each technical witness in narrative form;
* Include the text of any recommended modifications to the proposed regulatory change; and
* List and attach all exhibits anticipated to be offered by that person at the hearing, including any proposed statement of reasons for adoption of rules.

Notices of intent to present technical testimony shall be filed with:
Pamela Jones, WQCC Administrator
New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
telephone: (505) 660-4305
email: pamela.jones@state.nm.us

Those wishing to do so may offer non-technical public comment at the hearing or submit a non-technical written statement in lieu of oral testimony at or before the hearing. Written comments regarding the proposed amended rule may be addressed to Pamela Jones, WQCC Administrator, at the above address, and should reference docket number **WQCC 20-51(R)**. Pursuant to 20.1.6.203 NMAC, any person may file an entry of appearance as a party. The entry of appearance shall be filed with the WQCC Administrator, at the above address, no later than June 23, 2021, 20 days before the date of the hearing.

The hearing will be conducted in accordance with the WQCC Rulemaking Procedures (20.1.6 NMAC); the Water Quality Act, Sections 74-6-1 to -17 NMSA 1978 (1967 as amended through 2019); the State Rules Act, Section 14-4-5.3 NMSA 1978; and other applicable procedures.

If any person requires assistance, an interpreter or auxiliary aid to participate in this process, please contact Pamela Jones, WQCC Administrator, at the above address, by June 1, 2021. (TDD or TTY users please access the number via the New Mexico Relay Network, 1-800-659-1779 (voice); TTY users: 1-800-659-8331).

NMED Exhibit 96

STATEMENT OF NON-DISCRIMINATION
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, you may contact: Kathryn Becker, Non-Discrimination Coordinator, New Mexico Environment Department, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. If you believe that you have been discriminated against with respect to a NMED program or activity, you may contact the Non-Discrimination Coordinator identified above.

AVISO DE AUDIENCIA PÚBLICA PARA ENMIENDAS A 20.6.4 NMAC
REVISIÓN TRIENAL DE LOS ESTANDARES DE LAS AGUAS SUPERFICIALES INTERESTATALES Y ESTATALES

La Comisión de Control de la Calidad del Agua ("WQCC" por sus siglas en inglés) celebrará una audiencia pública a partir del **13 de julio de 2021**, después de la reunión pública programada regularmente por la WQCC y continuará a partir de entonces, según sea necesario, a través de la plataforma de reuniones en línea de WebEx. El ID y la contraseña de la reunión de la videoconferencia, el enlace de la videoconferencia y los números de teléfono son los siguientes:

A partir del martes 13 de julio de 2021:
Para conectarse por videoconferencia, vaya a:
Enlace de la reunión: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6
Número de reunión: 177 706 1008
Contraseña: phQAE7KmR47
Clave del anfitrión: 171483
Para unirse por el sistema de video Marque 1777061008@nmed-oit.webex.com
También puede marcar el 173.243.2.68 e introducir el número de la reunión.

Para unirse por teléfono...
+1-415-655-0001 Peaje de EE. UU.
Código de acceso: 177 706 1008
Números de llamadas entrantes globales (*Global call-in numbers*)

Visite el sitio web de WQCC antes de la audiencia para ver actualizaciones: https://www.env.nm.gov/water-quality-control-commission/wqcc/.
El propósito de la audiencia es considerar las enmiendas propuestas a 20.6.4 NMAC, Estándares para Aguas Superficiales Interestatales y Estatales. Estas enmiendas se han propuesto como resultado de una revisión de las normas estatales de calidad del agua y reflejan las actualizaciones de esas normas según lo dispuesto en la Ley federal de Agua Limpia y la Ley estatal de Calidad del Agua.

Las enmiendas propuestas a 20.6.4 NMAC pueden ser revisadas en línea en https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Debido a las restricciones actuales vigentes por las órdenes ejecutivas de la gobernadora y varias órdenes de emergencia de salud pública diseñadas para proteger al público y prevenir la propagación de la Enfermedad del Nuevo Coronavirus – 2019 (COVID-19), la oficina del administrador de la WQCC está cerrada al público. Por lo tanto, la revisión en persona de las enmiendas propuestas no es posible en este momento. Las personas que deseen revisar una copia física de las enmiendas propuestas deben ponerse en contacto con la administradora de la WQCC en la dirección que se indica más abajo.

Todas las personas interesadas tendrán una oportunidad razonable en la audiencia para presentar pruebas, datos, opiniones y argumentos pertinentes, oralmente o por escrito; presentar pruebas instrumentales e interrogar a los testigos.

De conformidad con 20.1.6.202 NMAC y la orden de procedimiento emitida por el funcionario de audiencias el 9 de noviembre de 2020, quienes deseen presentar un testimonio técnico deberán presentar un aviso por escrito de su intención de presentar un testimonio técnico ante la administradora de la WQCC **a más tardar hasta las 5:00 p.m., hora de verano de la montaña, el 12 de abril de 2021**, 92 días antes de la audiencia. Los avisos de intención de presentar un testimonio técnico deben hacer referencia al nombre del reglamento, la fecha de la audiencia y el número de expediente, **WQCC 20-51(R)**.

La forma y el contenido del aviso de intención de presentar un testimonio técnico deberá:

* Identificar a la persona por la que testificarán el testigo o testigos;
* Identificar cada testigo técnico que la persona tiene la intención de presentar y declarar las calificaciones de ese testigo, incluida una descripción de su historial académico y laboral;
* Incluir una copia del testimonio directo completo por escrito de cada testigo técnico en forma narrativa;
* Incluir el texto de cualquier modificación recomendada al cambio normativo propuesto; y
* Enumerar y adjuntar todas las pruebas instrumentales que esa persona presentará en la audiencia, incluida cualquier

* declaración propuesta de las razones para la adopción de las normas.

Los avisos de intención de presentar un testimonio técnico se presentarán ante:

Pamela Jones, administradora de la WQCC
New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
Teléfono: (505) 660-4305
Correo electrónico: pamela.jones@state.nm.us

Quienes deseen hacerlo pueden ofrecer comentarios públicos no técnicos en la audiencia o presentar una declaración escrita no técnica en lugar de un testimonio oral en la audiencia o antes de ella. Los comentarios por escrito sobre la norma enmendada propuesta pueden dirigirse a Pamela Jones, administradora de la WQCC, a la dirección anterior, y deben hacer referencia al número de expediente **WQCC 20-51(R)**. De conformidad con 20.1.6.203 NMAC, cualquier persona puede presentar un registro de comparecencia como parte interesada. El registro de comparecencia se presentará a la administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 23 de junio de 2021, 20 días antes de la fecha de la audiencia.
La audiencia se llevará a cabo de acuerdo con los Procedimientos de Reglamentación de la WQCC (20.1.6 NMAC); la Ley de Calidad del Agua, NMSA 1978, Secciones 74-6-1 a -17 (1967, según enmendada hasta 2019); la Ley de Reglas del Estado, NMSA 1978, Sección 14-4-5.3; y otros procedimientos aplicables.

Si alguna persona requiere asistencia, un intérprete o un dispositivo auxiliar para participar en este proceso, póngase en contacto con Pamela Jones, administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 1 de junio de 2021. (Los usuarios de TDD o TTY pueden acceder al número a través de New Mexico Relay Network, llamen al 1-800-659-1779 (voz); los usuarios de TTY: llamen al 1-800-659-8331).

DECLARACIÓN DE NO DISCRIMINACIÓN
NMED no discrimina por motivos de raza, color, nacionalidad, discapacidad, edad o sexo en la administración de sus programas o actividades, como lo exigen las leyes y reglamentos aplicables. El NMED es responsable de la coordinación de los esfuerzos de cumplimiento y la recepción de las consultas relativas a los requisitos de no discriminación implementados por 40 C.F.R. Partes 5 y 7, incluyendo el Título VI de la Ley de Derechos Civiles de 1964, con sus enmiendas; la Sección 504 de la Ley de Rehabilitación de 1973; la Ley de Discriminación por Edad de 1975, el Título IX de las Enmiendas de Educación de 1972, y la Sección 13 de las Enmiendas de la Ley Federal de Control de Contaminación del Agua de 1972.
Si tiene alguna pregunta sobre este aviso o cualquiera de los programas, políticas o procedimientos de no discriminación del NMED, o si cree que ha sido discriminado con respecto a un programa o actividad del NMED, puede ponerse en contacto con: Kathryn Becker, coordinadora de no discriminación, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. También puede visitar nuestro sitio web en https://www.env.nm.gov/non-employee-discrimination-complaint-page/ para saber cómo y dónde presentar una queja por discriminación.

FINANCE AND ADMINISTRATION, DEPARTMENT OF

NOTICE OF RESCHEDULED PROPOSED RULEMAKING

NOTICE IS HEREBY GIVEN that pursuant to Subsection A of 1.24.25.9 and 1.24.25.11 NMAC, the State of New Mexico Department of Finance and Administration (hereinafter "DFA") will hold a rescheduled rulemaking hearing on Friday, February 26, 2021 at 10:00 AM. This meeting was originally scheduled for Friday, January 15, 2021. The meeting will be held virtually via Webex. Members of the public may attend the Webex meeting on a computer, mobile device, or telephone. The videoconference's Meeting ID and Password, video link, and telephone numbers are as follows:

Webex meeting scheduled:
Department of Finance and Administration Rulemaking Hearing - Virtual
https://nmdfa.webex.com/nmdfa/j.php?MTID=m6bb57f9721d4a4c235fff6bdc1c439e3

Meeting number (access code): 146 809 4756
Meeting password: 3y7CVxs5rxD

Friday, February 26, 2021
10:00 am | (UTC-07:00) Mountain Time (US & Canada) | 5 hrs

Start meeting

Tap to join from a mobile device (attendees only)
+1-415-655-0001,,1468094756## US Toll
Join by phone
+1-415-655-0001 US Toll
Global call-in numbers
Join from a video system or application
Dial 1468094756@nmdfa.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business
Dial 1468094756.nmdfa@lync.webex.com
If you are a host, click here to view host information.
Need help? Go to http://help.webex.com
If you are an individual with a disability who is in need of a reader, amplifier, qualified sign language

From:	Fullam, Jennifer, NMENV
To:	Fullam, Jennifer, NMENV
Subject:	New Mexico"s Triennial Review-Public Hearing Notice
Date:	Friday, January 29, 2021 9:22:44 AM
Attachments:	2020 TR Hearing Notice 20210129 Stakeholders.pdf image002.png

Good morning,

You are receiving this message because you have been identified as a stakeholder in the New Mexico's Triennial Review of *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC).

The Water Quality Control Commission (WQCC) has scheduled a public hearing to consider proposed amendments to the state's *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC) beginning **on July 13, 2021**, following the regularly scheduled WQCC public meeting and continuing thereafter as necessary via the WebEx online meeting platform.

Please see the attached Triennial Review Hearing Notice (in English and Spanish) for more information.

Thank you.

Jennifer Fullam
Standards, Planning & Reporting Team Leader
Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr.
Santa Fe, NM 87505
*Phone: 505.946.8954
jennifer.fullam@state.nm.us

PLEASE NOTE NEW PHONE NUMBER

"Innovation, Science, Collaboration, Compliance"

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO

County of Bernalillo SS

NOTICEOFPUBLICHEARINGFORAMENDMENTSTO2064NMACTRIENNIALREVIEWOFSTANDARDSFORINTERSTATEANDINTRASTATESURFACEWATERSTHEWATERQUALITYCONTROLCO

Elise Rodriguez , the undersigned, on oath states that she is an authorized Representative of The Albuquerque Journal, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made of assessed as court cost; that the notice, copy of which hereto attached, was published in said paper in the regular daily edition, for 1 time(s) on the following date(s):

01/30/2021

OFFICIAL SEAL
Susan Ramirez
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires: 3/15/2023

Elise Rodriguez

Sworn and subscribed before me, a Notary Public, in and for the County of Bernalillo and State of New Mexico this 1 day of February of 2021

PRICE $1,185.11

Statement to come at the end of month.

ACCOUNT NUMBER 1087132

NMED Exhibit 98

NOTICE OF PUBLIC HEARING
FOR AMENDMENTS TO 20.6.4 NMAC
TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

The Water Quality Control Commission ("WQCC") will hold a public hearing beginning **on July 13, 2021**, following the regularly scheduled WQCC public meeting and continuing thereafter as necessary via the WebEx online meeting platform. The videoconference's Meeting ID and Password, videoconference link, and telephone numbers are as follows:

Beginning Tuesday, July 13, 2021:
To connect via video conference, go to:
Meeting link: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6
Meeting number: 177 706 1008
Password: phQAE7KmR47
Host key: 171483
Join by video system
Dial 1777061008@nmed-oit.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join by phone
+1-415-655-0001 US Toll
Access code: 177 706 1008
Global call-in numbers

Please visit the WQCC website prior to the hearing for any updates: https://www.env.nm.gov/water-quality-control-commission/wqcc/. The purpose of the hearing is to consider proposed amendments to 20.6.4 NMAC, Standards for Interstate and Intrastate Surface Waters. These amendments have been proposed as a result of a review of state water quality standards and reflect updates to those standards as required by the federal Clean Water Act and the state Water Quality Act.

The proposed amendments to 20.6.4 NMAC may be reviewed online at https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Due to restrictions currently in place by the Governor's Executive Orders and various emergency public health orders designed to protect the public and prevent the spread of the Novel Coronavirus Disease – 2019 (COVID-19), the WQCC Administrator's office is closed to the public. Therefore in-person review of the proposed amendments is not possible at this time. Persons who wish to review a physical copy of the proposed amendments should contact the WQCC Administrator at the address provided below.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views, and arguments, orally or in writing; to introduce exhibits; and to examine witnesses.

Pursuant to 20.1.6.202 NMAC and the Procedural Order issued by the hearing officer on November 9, 2020, those wishing to present technical testimony must file a written notice of intent to present technical testimony with the WQCC Administrator **on or before 5:00 p.m. Mountain Daylight Time on April 12, 2021**, 92 days prior to the hearing. Notices of intent to present technical testimony should reference the name of the regulation, the date of the hearing, and the docket number, **WQCC 20-51(R).**

The form and content of the notice of intent to present technical testimony shall:
* Identify the person for whom the witness(es) will testify;
* Identify each technical witness the person intends to present and state the qualifications of that witness, including a description of their education and work background;
* Include a copy of the full written direct testimony of each technical witness in narrative form;
* Include the text of any recommended modifications to the proposed regulatory change; and
* List and attach all exhibits anticipated to be offered by that person at the hearing, including any proposed statement of reasons for adoption of rules.

Notices of intent to present technical testimony shall be filed with:
Pamela Jones, WQCC Administrator
New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
telephone: (505) 660-4305
email: pamela.jones@state.nm.us

Those wishing to do so may offer non-technical public comment at the hearing or submit a non-technical written statement in lieu of oral testimony at or before the hearing. Written comments regarding the proposed amended rule may be addressed to Pamela Jones, WQCC Administrator, at the above address, and should reference docket number **WQCC 20-51(R)**. Pursuant to 20.1.6.203 NMAC, any person may file an entry of appearance as a party. The entry of appearance shall be filed with the WQCC Administrator, at the above address, no later than June 23, 2021, 20 days before the date of the hearing.

The hearing will be conducted in accordance with the WQCC Rulemaking Procedures (20.1.6 NMAC); the Water Quality Act, Sections 74-6-1 to -17 NMSA 1978 (1967 as amended through 2019); the State Rules Act, Section 14-4-5.3 NMSA 1978; and other applicable procedures.

If any person requires assistance, an interpreter or auxiliary aid to participate in this process, please contact Pamela Jones, WQCC Administrator, at the above address, by June 1, 2021. (TDD or TTY users please access the number via the New Mexico Relay Network, 1-800-659-1779 (voice); TTY users: 1-800-659-8331).

STATEMENT OF NON-DISCRIMINATION
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, you may contact: Kathryn Becker, Non-Discrimination Coordinator, New Mexico Environment Department, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. If you believe that you have been discriminated against with respect to a NMED program or activity, you may contact the Non-Discrimination Coordinator identified above.

AVISO DE AUDIENCIA PÚBLICA
PARA ENMIENDAS A 20.6.4 NMAC
REVISIÓN TRIENAL DE LOS ESTANDARES DE LAS AGUAS
SUPERFICIALES INTERESTATALES Y ESTATALES

La Comisión de Control de la Calidad del Agua ("WQCC" por sus siglas en inglés) celebrará una audiencia pública a partir del **13 de julio de 2021**, después de la reunión pública programada regularmente por la WQCC y continuará a partir de entonces, según sea necesario, a través de la plataforma de reuniones en línea de WebEx. El ID y la contraseña de la reunión de la videoconferencia, el enlace de la videoconferencia y los números de teléfono son los siguientes:

A partir del martes 13 de julio de 2021:
Para conectarse por videoconferencia, vaya a:
Enlace de la reunión: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6
Número de reunión: 177 706 1008
Contraseña: phQAE7KmR47
Clave del anfitrión: 171483
Para unirse por el sistema de video
Marque 1777061008@nmed-oit.webex.com
También puede marcar el 173.243.2.68 e introducir el número de la reunión.

Para unirse por teléfono...
+1-415-655-0001 Peaje de EE. UU.
Código de acceso: 177 706 1008
Números de llamadas entrantes globales (Global call-in numbers)

Visite el sitio web de WQCC antes de la audiencia para ver actualizaciones: https://www.env.nm.gov/water-quality-control-commission/wqcc/. El propósito de la audiencia es considerar las enmiendas propuestas a 20.6.4 NMAC, Estándares para Aguas Superficiales Interestatales y Estatales. Estas enmiendas se han propuesto como resultado de una revisión de las normas estatales de calidad del agua y reflejan las actualizaciones de esas normas según lo dispuesto en la Ley federal de Agua Limpia y la Ley estatal de Calidad del Agua.

Las enmiendas propuestas a 20.6.4 NMAC pueden ser revisadas en línea en https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Debido a las restricciones actuales vigentes por las órdenes ejecutivas de la gobernadora y varias órdenes de emergencia de salud pública diseñadas para proteger al público y prevenir la propagación de la Enfermedad del Nuevo Coronavirus – 2019 (COVID-19), la oficina del administrador de la WQCC está cerrada al público. Por lo tanto, la revisión en persona de las enmiendas propuestas no es posible en este momento. Las personas que deseen revisar una copia física de las enmiendas propuestas deben ponerse en contacto con la administradora de la WQCC en la dirección que se indica más abajo.

Todas las personas interesadas tendrán una oportunidad razonable en la audiencia para presentar pruebas, datos, opiniones y argumentos pertinentes, oralmente o por escrito; presentar pruebas instrumentales e interrogar a los testigos.

De conformidad con 20.1.6.202 NMAC y la orden de procedimiento emitida por el funcionario de audiencias el 9 de noviembre de 2020, quienes deseen presentar un testimonio técnico deberán presentar un aviso por escrito de su intención de presentar un testimonio técnico ante la administradora de la WQCC **a más tardar hasta las 5:00 p.m., hora de verano de la montaña, el 12 de abril de 2021**, 92 días antes de la audiencia. Los avisos de intención de presentar un testimonio técnico deben hacer referencia al nombre del reglamento, la fecha de la audiencia y el número de expediente, **WQCC 20-51(R).**

La forma y el contenido del aviso de intención de presentar un testimonio técnico deberá:

* Identificar a la persona por la que testificarán el testigo o testigos;
* Identificar cada testigo técnico que la persona tiene la intención de presentar y declarar las calificaciones de ese testigo, incluida una descripción de su historial académico y laboral;
* Incluir una copia del testimonio directo completo por escrito de cada testigo técnico en forma narrativa;
* Incluir el texto de cualquier modificación recomendada al cambio normativo propuesto; y
* Enumerar y adjuntar todas las pruebas instrumentales que esa persona presentará en la audiencia, incluida cualquier
* declaración propuesta de las razones para la adopción de las normas.

Los avisos de intención de presentar un testimonio técnico se presentarán ante:

Pamela Jones, administradora de la WQCC
New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
Teléfono: (505) 660-4305
Correo electrónico: pamela.jones@state.nm.us

Quienes deseen hacerlo pueden ofrecer comentarios públicos no técnicos en la audiencia o presentar una declaración escrita no técnica en lugar de un testimonio oral en la audiencia o antes de ella. Los comentarios por escrito sobre la norma enmendada propuesta pueden dirigirse a Pamela Jones, administradora de la WQCC, a la dirección anterior, y deben hacer referencia al número de expediente **WQCC 20-51(R)**. De conformidad con 20.1.6.203 NMAC, cualquier persona puede presentar un registro de comparecencia como parte interesada. El registro de comparecencia se presentará a la administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 23 de junio de 2021, 20 días antes de la fecha de la audiencia.
La audiencia se llevará a cabo de acuerdo con los Procedimientos de Reglamentación de la WQCC (20.1.6 NMAC); la Ley de Calidad del Agua, NMSA 1978, Secciones 74-6-1 a -17 (1967, según enmendada hasta 2019); la Ley de Reglas del Estado, NMSA 1978, Sección 14-4-5.3; y otros procedimientos aplicables.

Si alguna persona requiere asistencia, un intérprete o un dispositivo auxiliar para participar en este proceso, póngase en contacto con Pamela Jones, administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 1 de junio de 2021. (Los usuarios de TDD o TTY pueden acceder al número a través de New Mexico Relay Network, llamen al 1-800-659-1779 (voz); los usuarios de TTY: llamen al 1-800-659-8331).

DECLARACIÓN DE NO DISCRIMINACIÓN
NMED no discrimina por motivos de raza, color, nacionalidad, discapacidad, edad o sexo en la administración de sus programas o actividades, como lo exigen las leyes y reglamentos aplicables. El NMED es responsable de la coordinación de los esfuerzos de cumplimiento y la recepción de las consultas relativas a los requisitos de no discriminación implementados por 40 C.F.R. Partes 5 y 7, incluyendo el Título VI de la Ley de Derechos Civiles de 1964, con sus enmiendas; la Sección 504 de la Ley de Rehabilitación de 1973; la Ley de Discriminación por Edad de 1975, el Título IX de las Enmiendas de Educación de 1972, y la Sección 13 de las Enmiendas de la Ley Federal de Control de Contaminación del Agua de 1972. Si tiene alguna pregunta sobre este aviso o cualquiera de los programas, políticas o procedimientos de no discriminación del NMED, o si cree que ha sido discriminado con respecto a un programa o actividad del NMED, puede ponerse en contacto con: Kathryn Becker, coordinadora de no discriminación, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd. coordinator@state.nm.us. También puede visitar nuestro sitio web en https://www.env.nm.gov/non-employee-discrimination-complaint-page/ para saber cómo y dónde presentar una queja por discriminación.

Journal: January 30, 2021

NMED Exhibit 98

SANTA FE NEW MEXICAN

Founded 1849

NMED SURFACE WATER
PO BOX 5469
SANTA FE, NM 87502

ACCOUNT:	S2004	
AD NUMBER:	7829	
LEGAL NO	87946	P.O.#:66700-0000036045
1 TIME(S)	747.32	
AFFIDAVIT	10.00	
TAX	63.90	
TOTAL	821.22	

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, Shaundel Moya, being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe, Rio Arriba, San Miguel, and Los Alamos, State of New Mexico and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the Legal No 87946 a copy of which is hereto attached was published in said newspaper 1 day(s) between 01/30/2021 and 01/30/2021 and that the notice was published in the newspaper proper and not in any supplement; the first date of publication being on the 30th day of January, 2021 and that the undersigned has personal knowledge of the matter and thngs set forth in this affidavit.

ISI Shaundel Moya
LEGAL ADVERTISEMENT RESPRESENTATIVE

Subscribed and sworn to before me on this 1st day of February, 2021

Notary Susan Laxine Cahoon

Commission Expires: 11/20/2024

NMED Exhibit 99

LEGAL # 87946

NOTICE OF PUBLIC HEARING FOR AMENDMENTS TO 20.6.4 NMAC TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

The Water Quality Control Commission ("WQCC") will hold a public hearing beginning on July 13, 2021, following the regularly scheduled WQCC public meeting and continuing thereafter as necessary via the WebEx online meeting platform. The videoconference's Meeting ID and Password, videoconference link, and telephone numbers are as follows:

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All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views, and arguments, orally or in writing; to introduce exhibits; and to examine witnesses.

Pursuant to 20.1.6.202 NMAC and the Procedural Order issued by the hearing officer on November 9, 2020, those wishing to present technical testimony must file a written notice of intent to present technical testimony with the WQCC Administrator **on or before 5:00 p.m. Mountain Daylight Time on April 12, 2021,** 92 days prior to the hearing. Notices of intent to present technical testimony should reference the name of the regulation, the date of the hearing, and the docket number, **WQCC 20-51(R).**

The form and content of the notice of intent to present technical testimony shall:
* Identify the person for whom the witness(es) will testify;
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email: pamela.jones@state.nm.us

Those wishing to do so may offer non-technical public comment at the hearing or submit a non-technical written statement in lieu of oral testimony at or before the hearing. Written comments regarding the proposed amended rule may be addressed to Pamela Jones, WQCC Administrator, at the above address, and should reference docket number **WQCC 20-51(R).** Pursuant to 20.1.6.203 NMAC, any person may file an entry of appearance as a party. The entry of appearance shall be filed with the WQCC Administrator, at the above address, no later than June 23, 2021, 20 days before the date of the hearing.

The hearing will be conducted in accordance with the WQCC Rulemaking Procedures (20.1.6 NMAC); the Water Quality Act, Sections 74-6-1 to -17 NMSA 1978 (1967 as amended through 2019); the State Rules Act, Section 14-4-5.3 NMSA 1978; and other applicable procedures.

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AVISO DE AUDIENCIA PÚBLICA PARA ENMIENDAS A 20.6.4 NMAC REVISIÓN TRIENAL DE LOS ESTANDARES DE LAS AGUAS SUPERFICIALES INTERESTATALES Y ESTATALES

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Para conectarse por videoconferencia, vaya a:
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Número de reunión: 177 706 1008
Contraseña: phQAE7KmR47
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Para unirse por el sistema de video
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De conformidad 20.1.6.202 NMAC orden procedimiento en por el funcionar audiencias el noviembre de quienes d presentar testimonio té deberán present aviso por escrito intención de pres un testimonio te ante la administr de la WQCC a **tardar hasta las p.m., hora de v de la montaña, e abril de 2021,** 9 antes de la audi Los avisos intención de pres un testimonio te deben referencia al n del reglament fecha de la audie el número expediente, WQ **51(R).**

La forma contenido del av intención de pre un testimonio te deberá:

* Identificar persona por l testificarán el t o testigos;
* Identificar testigo técnico persona tien intención de pre y declarar calificaciones testigo, incluid descripción historial acadé laboral;
* Incluir una co testimonio completo por de cada técnico en narrativa;
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LEGAL # 87946

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If any person requires assistance, an interpreter or auxiliary aid to participate in this process, please contact Pamela Jones, WQCC Administrator, at the above address, by June 1, 2021. (TDD or TTY users please

disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, you may contact: Kathryn Becker, Non-Discrimination Coordinator, New Mexico Environment Department, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. If you believe that you have been discriminated against with respect to a NMED program or activity, you may contact the Non-Discrimination Coordinator identified above.

AVISO DE AUDIENCIA PÚBLICA PARA ENMIENDAS A 20,6.4 NMAC REVISIÓN TRIENAL DE LOS ESTANDARES DE LAS AGUAS SUPERFICIALES INTERESTATALES Y ESTATALES

La Comisión de Control de la Calidad del Agua ("WQCC" por sus siglas en inglés) celebrará una audiencia pública a partir del **13 de julio de 2021**, después de la reunión pública programada regularmente por la WQCC y continuará a partir de entonces, según sea necesario, a través de la

de julio de 2021:
Para conectarse por videoconferencia, vaya a:
Enlace de la reunión: nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6
Número de reunión: 177 706 1008
Contraseña: phQAE7KmR47
Clave del anfitrión: 171483
Para unirse por el sistema de video Marque 1777061008@nmed-oit.webex.com
También puede marcar el 173.243.2.68 e introducir el número de la reunión.

Para unirse por teléfono...
+1-415-655-0001 Peaje de EE. UU.
Código de acceso: 177 706 1008
Números de llamadas entrantes globales (Global call-in numbers)

Visite el sitio web de WQCC antes de la audiencia para ver actualizaciones: env.nm.gov/water-quality-control-commission/wqcc/. El propósito de la audiencia es considerar las enmiendas propuestas a 20.6.4 NMAC, Estándares para Aguas Superficiales Interestatales y Estatales. Estas enmiendas se han propuesto como resultado de una revisión de las normas estatales de calidad del agua y reflejan las actualizaciones de esas normas según lo dispuesto en la Ley federal de Agua Limpia y la Ley estatal de Calidad del Agua.

Las enmiendas propuestas a 20.6.4 NMAC pueden ser revisadas en línea en env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Debido a las restricciones actuales vigentes por las órdenes ejecutivas de la gobernadora y varias órdenes de emergencia de salud pública diseñadas para proteger al público y prevenir la

momento. Las personas que deseen revisar una copia física de las enmiendas propuestas deben ponerse en contacto con la administradora de la WQCC en la dirección que se indica más abajo.

Todas las personas interesadas tendrán una oportunidad razonable en la audiencia para presentar pruebas, datos, opiniones y argumentos pertinentes, oralmente o por escrito; presentar pruebas instrumentales e interrogar a los testigos.

De conformidad con 20.1.6.202 NMAC y la orden de procedimiento emitida por el funcionario de audiencias el 9 de noviembre de 2020, quienes deseen presentar un testimonio técnico deberán presentar un aviso por escrito de su intención de presentar un testimonio técnico ante la administradora de la WQCC **a más tardar hasta las 5:00 p.m., hora de verano de la montaña, el 12 de abril de 2021**, 92 días antes de la audiencia. Los avisos de intención de presentar un testimonio técnico deben hacer referencia al nombre del reglamento, la fecha de la audiencia y el número de expediente, **WQCC 20-51(R).**

La forma y el contenido del aviso de intención de presentar un testimonio técnico deberá:

* Identificar a la persona por la que testificarán el testigo o testigos;
* Identificar cada testigo técnico que la persona tiene la intención de presentar y declarar las calificaciones de ese testigo, incluida una descripción de su historial académico y laboral;
* Incluir una copia del testimonio directo completo por escrito de cada testigo

presentará en la audiencia, incluida cualquier
* declaración propuesta de las razones para la adopción de las normas.

Los avisos de intención de presentar un testimonio técnico se presentarán ante:

Pamela Jones, administradora de la WQCC
New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
Teléfono: (505) 660-4305
Correo electrónico: pamela.jones@state.nm.us

Quienes deseen hacerlo pueden ofrecer comentarios públicos no técnicos en la audiencia o presentar una declaración escrita no técnica en lugar de un testimonio oral en la audiencia o antes de ella. Los comentarios por escrito sobre la norma enmendada propuesta pueden dirigirse a Pamela Jones, administradora de la WQCC, a la dirección anterior, y deben hacer referencia al número de expediente **WQCC 20-51(R).** De conformidad con 20.1.6.203 NMAC, cualquier persona puede presentar un registro de comparecencia como parte interesada. El registro de comparecencia se presentará a la administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 23 de junio de 2021, 20 días antes de la fecha de la audiencia.
La audiencia se llevará a cabo de acuerdo con los Procedimientos de Reglamentación de la WQCC (20.1.6 NMAC); la Ley de Calidad del Agua, NMSA 1978, Secciones 74-6-1 a -17 (1967, según enmendada hasta 2019); la Ley de Reglas del Estado, NMSA 1978, Sección 14-4-5.3; y otros procedimientos aplicables.

hasta el 1 de junio de 2021. (Los usuarios de TDD o TTY pueden acceder al número a través de New Mexico Relay Network, llamen al 1-800-659-1779 (voz); los usuarios de TTY: llamen al 1-800-659-8331).

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Pub. Jan. 30, 2021

From:	Lemon, Shelly, NMENV
To:	Chavez, William, NMENV; Rhoderick, John, NMENV; Italiano, Robert, NMENV; Kesler, Michael, NMENV
Cc:	Fullam, Jennifer, NMENV; Verheul, John, NMENV; Maxfield, Annie, NMENV
Subject:	Notice of Hearing - Triennial Review of Surface Water Quality Standards (20.6.4 NMAC)
Date:	Thursday, January 28, 2021 4:25:09 PM
Attachments:	2020 TR Hearing Notice 20210112b ENGLISH SRCA APPROVED.pdf 2020 TR Hearing Notice 20210112b SPANISH SRCA APPROVED.pdf

Hello,

I just wanted the District Offices to know that the Surface Water Quality Bureau (SWQB) is preparing for a hearing on amendments to the State's surface water quality standards (20.6.4 NMAC), known as the "Triennial Review." Pursuant to the State Rules Act (Section 14-4 NMSA 1978), we need to distribute rulemaking information and make it available in the agency's district, field and regional offices. Since NMED offices are closed indefinitely due to COVID-19, I am sending this information electronically to make you all aware in case somebody from the public contacts your office. Please forward to field offices or appropriate staff, as needed.

The purpose of the hearing is to consider proposed amendments to 20.6.4 NMAC, *Standards for Interstate and Intrastate Surface Waters*. These amendments have been proposed as a result of a review of state water quality standards and reflect updates to those standards as required by the federal Clean Water Act and the state Water Quality Act. The proposed amendments to 20.6.4 NMAC may be reviewed online at https://www.env.nm.gov/water-qualitycontrol-commission/wqcc-20-51-r/.

The Water Quality Control Commission (WQCC) is planning to hold the public hearing beginning **on July 13, 2021**, following the regularly scheduled WQCC public meeting and continuing thereafter as necessary via the WebEx online meeting platform.

Please see attached Triennial Review Hearing Notice (in English and Spanish) for more information.

If you or the public have any questions or would like additional information, feel free to contact Jennifer Fullam, John Verheul, Annie Maxfield, or me.

Regards,
Shelly

Shelly Lemon
Chief - Surface Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Dr, N2050
Santa Fe, NM 87505
Cell: (505) 470-5018

shelly.lemon@state.nm.us
https://www.env.nm.gov/surface-water-quality/

New Mexico Environment Department

Contact Information:
(505) 827-2855 MAIN // 1-800-219-6157 (toll free)

Environmental Emergencies:
505-827-9329 (24 hrs)

Surface Water Quality

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Point Source Regulation Section

Watershed Protection Section

New Mexico Wetlands Program

2020 Triennial Review

Executive Summary: In accordance with Section 303(c)(1) of the CWA and 20.6.4.10 New Mexico Administrative Code ("NMAC"), states are required to hold public hearings at least once every three years to review, amend, and adopt water quality standards, as applicable. This is referred to as a "Triennial Review". Pursuant to Section 74-6-4(F) of the State's Water Quality Act ("WQA"), the Water Quality Control Commission ("WQCC") delegated the New Mexico Environment Department ("NMED") the responsibility for organizing and proposing amendments to the State's surface water quality standards, codified under 20.6.4 NMAC. This matter has been docketed under WQCC 20-51(R).

NMED is proposing several amendments as part of the Triennial Review which include, but are not limited to the following:

- Updating definitions (20.6.4.7 NMAC)
- Clarification of language under Review of Standards (20.6.4.10 NMAC)
- Clarification of language under Use Attainability Analysis (20.6.4.15 NMAC)
- Several designated use amendments
  - Existing Use Analysis for non-perennial waters within Los Alamos National Laboratory currently classified under 20.6.4.128 NMAC
  - Existing Use Analysis for perennial classified waters with a secondary contact recreational use
- Updates to the numeric aquatic life and human health criteria (20.6.4.900 NMAC)
- Updates to the numeric ammonia criteria (20.6.4.900 NMAC)

Public Involvement Plan	SWQB	08.11.2020
Notice of Public Comment Period on NMED's Proposed Amendments English and Spanish (Español)	SWQB	11.02.2020
Notice of Public Meeting English and Spanish (Español)	SWQB	11.02.2020
Public Comment Draft of NMED's Proposed Amendments to 20.6.4 NMAC	SWQB	11.02.2020
Informational Meeting Presentation	SWQB	11.12.2020
Extension of Public Comment Period NMED's Proposed Amendments English and Spanish (Español)	SWQB	11.25.2020
Public Comments regarding proposed amendments to 20.6.4 NMAC, as submitted to NMED from:		
Buckman Direct Diversion	Carpenter	11.16.2020
Los Alamos National Laboratory-Triad National Security, LLC and U.S. Department of Energy	Rose	11.16.2020
Concerned Citizens for Nuclear Safety	Arends	11.16.2020
U.S. Environmental Protection Agency, Region 6	Wooster	12.22.2020
Amigos Bravos, Audubon New Mexico, Defenders of Wildlife, Flower Hill Institute, Gila Resources Information Project, Honor Our Pueblo Existence, Molino de la Isla Organics, LLC, New Mexico Environmental Law Center, New Mexico Wild, Rio Grande Restoration, Rovers and Birds, Sierra Club, Rio Grande Chapter, Tewa Women United, Trout Unlimited, Upper Pecos Watershed Alliance, Western Environmental Law Center	Conn et al	01.06.2021

Los Alamos National Laboratory-Triad National Security, LLC	Van Valkenburg	01.06.2021
New Mexico Mining Association	Bowen	01.06.2021
San Juan Water Commission	Chavez	01.06.2021
Chevron Mining, Inc.-Questa Mine	Love and Gensemer	01.05.2021
Concerned Citizens for Nuclear Safety	Arends	01.06.2021

Petition and Hearing Request	SWQB	08.19.2020
Order for Hearing and Appointment of Hearing Officer	WQCC	10.19.2020
Public Hearing Notice English and Spanish (Español)	WQCC	01.29.2021
WQCC 20-51(R) Pleadings Log (Procedural Order and Filings with the Commission)	Various	Various
Final Order and Statement of Reasons		
Integrated Rule 20.6.4 NMAC		
Submittal Letter to EPA		
EPA's Response and Technical Support Document (TSD)		

- SWQB Calendar
- Newsletters
- Public Notices
- Request for Proposals
- Fish Consumption Advisories
- Org Chart

- Water Quality Standards
- SWQB mapper
- 303(d)/305(b) Integrated Report
- Rules and Regulations
- TMDL List
- Request Public Records

SUBSCRIBE TO SWQB NEWS

Santa Fe, New Mexico USA 87505

Phone: (505) 827-0187
Fax: (505) 827-0160

SWQB website liaison

Contact Page

NMED Exhibit 101

From: New Mexico Environment Department
To: Fullam, Jennifer, NMENV
Subject: [EXT] NOTICE OF PUBLIC HEARING FOR AMENDMENTS TO 20.6.4 NMAC TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS
Date: Friday, January 29, 2021 1:11:51 PM

SWQB logo

Surface Water Quality Bureau

Our mission is to preserve, protect, and improve New Mexico's surface water quality for present and future generations.

Oficina de Calidad de Aguas Superficiales

Nuestra misión es preservar, proteger y mejorar la calidad de las aguas superficiales de Nuevo México para las generaciones presentes y futuras.

NOTICE OF PUBLIC HEARING FOR AMENDMENTS TO 20.6.4 NMAC TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

The Water Quality Control Commission ("WQCC") will hold a public hearing beginning **on July 13, 2021**, following the regularly scheduled WQCC public meeting and continuing thereafter as necessary via the WebEx online meeting platform. The videoconference's Meeting ID and Password, videoconference link, and telephone numbers are as follows:

Beginning Tuesday, July 13, 2021:

To connect via video conference, go to:

Meeting link: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6

Meeting number: 177 706 1008
Password: phQAE7KmR47
Host key: 171483
Join by video system
Dial 1777061008@nmed-oit.webex.com

You can also dial 173.243.2.68 and enter your meeting number.

Join by phone
+1-415-655-0001 US Toll
Access code: 177 706 1008
Global call-in numbers

Please visit the WQCC website prior to the hearing for any updates: https://www.env.nm.gov/water-quality-control-commission/wqcc/. The purpose of the hearing is to consider proposed amendments to 20.6.4 NMAC, Standards for Interstate and Intrastate Surface Waters. These amendments have been proposed as a result of a review of state water quality standards and reflect updates to those standards as required by the federal Clean Water Act and the state Water Quality Act.

The proposed amendments to 20.6.4 NMAC may be reviewed online at https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Due to restrictions currently in place by the Governor's Executive Orders and various emergency public health orders designed to

protect the public and prevent the spread of the Novel Coronavirus Disease – 2019 (COVID-19), the WQCC Administrator's office is closed to the public. Therefore in-person review of the proposed amendments is not possible at this time. Persons who wish to review a physical copy of the proposed amendments should contact the WQCC Administrator at the address provided below.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views, and arguments, orally or in writing; to introduce exhibits; and to examine witnesses.

Pursuant to 20.1.6.202 NMAC and the Procedural Order issued by the hearing officer on November 9, 2020, those wishing to present technical testimony must file a written notice of intent to present technical testimony with the WQCC Administrator **on or before 5:00 p.m. Mountain Daylight Time on April 12, 2021**, 92 days prior to the hearing. Notices of intent to present technical testimony should reference the name of the regulation, the date of the hearing, and the docket number, **WQCC 20-51(R)**.

The form and content of the notice of intent to present technical testimony shall:

- Identify the person for whom the witness(es) will testify;
- Identify each technical witness the person intends to present and state the qualifications of that witness, including a description of their education and work background;
- Include a copy of the full written direct testimony of each technical witness in narrative form;
- Include the text of any recommended modifications to the proposed regulatory change; and
- List and attach all exhibits anticipated to be offered by that person at the hearing, including any proposed statement of reasons for adoption of rules.

Notices of intent to present technical testimony shall be filed with:

Pamela Jones, WQCC Administrator
New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
Telephone: (505) 660-4305
Email: pamela.jones@state.nm.us

Those wishing to do so may offer non-technical public comment at the hearing or submit a non-technical written statement in lieu of oral testimony at or before the hearing. Written comments regarding the proposed amended rule may be addressed to Pamela Jones, WQCC Administrator, at the above address, and should reference docket number **WQCC 20-51(R)**. Pursuant to 20.1.6.203 NMAC, any person may file an entry of appearance as a party. The entry of appearance shall be filed with the WQCC Administrator, at the above address, no later than June 23, 2021, 20 days before the date of the hearing.

The hearing will be conducted in accordance with the WQCC Rulemaking Procedures (20.1.6 NMAC); the Water Quality Act, Sections 74-6-1 to -17 NMSA 1978 (1967 as amended through 2019); the State Rules Act, Section 14-4-5.3 NMSA 1978; and other applicable procedures.

If any person requires assistance, an interpreter or auxiliary aid to participate in this process, please contact Pamela Jones, WQCC Administrator, at the above address, by June 1, 2021. (TDD or TTY users please access the number via the New Mexico Relay Network, 1-800-659-1779 (voice); TTY users: 1-800-659-8331).

STATEMENT OF NON-DISCRIMINATION

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the

administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, you may contact: Kathryn Becker, Non-Discrimination Coordinator, New Mexico Environment Department, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. If you believe that you have been discriminated against with respect to a NMED program or activity, you may contact the Non-Discrimination Coordinator identified above.

AVISO DE AUDIENCIA PÚBLICA PARA ENMIENDAS A 20.6.4 NMAC REVISIÓN TRIENAL DE LOS ESTANDARES DE LAS AGUAS SUPERFICIALES INTERESTATALES Y ESTATALES

La Comisión de Control de la Calidad del Agua ("WQCC" por sus siglas en inglés) celebrará una audiencia pública a partir del **13 de julio de 2021**, después de la reunión pública programada regularmente por la WQCC y continuará a partir de entonces, según sea necesario, a través de la plataforma de reuniones en línea de WebEx. El ID y la contraseña de la reunión de la videoconferencia, el enlace de la videoconferencia y los números de teléfono son los siguientes:

A partir del martes 13 de julio de 2021:

Para conectarse por videoconferencia, vaya a:

Enlace de la reunión: https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6

Número de reunión: 177 706 1008
Contraseña: phQAE7KmR47
Clave del anfitrión: 171483
Para unirse por el sistema de video
Marque 1777061008@nmed-oit.webex.com

También puede marcar el 173.243.2.68 e introducir el número de la reunión.

Para unirse por teléfono...
+1-415-655-0001 Peaje de EE. UU.
Código de acceso: 177 706 1008
Números de llamadas entrantes globales (*Global call-in numbers*)

Visite el sitio web de WQCC antes de la audiencia para ver actualizaciones: https://www.env.nm.gov/water-quality-control-commission/wqcc/. El propósito de la audiencia es considerar las enmiendas propuestas a 20.6.4 NMAC, Estándares para Aguas Superficiales Interestatales y Estatales. Estas enmiendas se han propuesto como resultado de una revisión de las normas estatales de calidad del agua y reflejan las actualizaciones de esas normas según lo dispuesto en la Ley federal de Agua Limpia y la Ley estatal de Calidad del Agua.

Las enmiendas propuestas a 20.6.4 NMAC pueden ser revisadas en línea en https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. Debido a las restricciones actuales vigentes por las órdenes ejecutivas de la gobernadora y varias órdenes de emergencia de salud pública diseñadas para proteger al público y prevenir la propagación de la Enfermedad del Nuevo Coronavirus – 2019 (COVID-19), la oficina del administrador de la WQCC está cerrada al público. Por lo tanto, la revisión en persona de las enmiendas propuestas no es posible en este

momento. Las personas que deseen revisar una copia física de las enmiendas propuestas deben ponerse en contacto con la administradora de la WQCC en la dirección que se indica más abajo.

Todas las personas interesadas tendrán una oportunidad razonable en la audiencia para presentar pruebas, datos, opiniones y argumentos pertinentes, oralmente o por escrito; presentar pruebas instrumentales e interrogar a los testigos.

De conformidad con 20.1.6.202 NMAC y la orden de procedimiento emitida por el funcionario de audiencias el 9 de noviembre de 2020, quienes deseen presentar un testimonio técnico deberán presentar un aviso por escrito de su intención de presentar un testimonio técnico ante la administradora de la WQCC **a más tardar hasta las 5:00 p.m., hora de verano de la montaña, el 12 de abril de 2021**, 92 días antes de la audiencia. Los avisos de intención de presentar un testimonio técnico deben hacer referencia al nombre del reglamento, la fecha de la audiencia y el número de expediente, **WQCC 20-51(R)**.

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- Identificar a la persona por la que testificarán el testigo o testigos;
- Identificar cada testigo técnico que la persona tiene la intención de presentar y declarar las calificaciones de ese testigo, incluida una descripción de su historial académico y laboral;
- Incluir una copia del testimonio directo completo por escrito de cada testigo técnico en forma narrativa;
- Incluir el texto de cualquier modificación recomendada al cambio normativo propuesto; y
- Enumerar y adjuntar todas las pruebas instrumentales que esa persona presentará en la audiencia, incluida cualquier declaración propuesta de las razones para la adopción de las normas.

Los avisos de intención de presentar un testimonio técnico se presentarán ante:

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New Mexico Environment Department
Harold Runnels Building
P.O. Box 5469
Santa Fe, NM 87502
Teléfono: (505) 660-4305
Correo electrónico: pamela.jones@state.nm.us

Quienes deseen hacerlo pueden ofrecer comentarios públicos no técnicos en la audiencia o presentar una declaración escrita no técnica en lugar de un testimonio oral en la audiencia o antes de ella. Los comentarios por escrito sobre la norma enmendada propuesta pueden dirigirse a Pamela Jones, administradora de la WQCC, a la dirección anterior, y deben hacer referencia al número de expediente **WQCC 20-51(R)**. De conformidad con 20.1.6.203 NMAC, cualquier persona puede presentar un registro de comparecencia como parte interesada. El registro de comparecencia se presentará a la administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 23 de junio de 2021, 20 días antes de la fecha de la audiencia.

La audiencia se llevará a cabo de acuerdo con los Procedimientos de Reglamentación de la WQCC (20.1.6 NMAC); la Ley de Calidad del Agua, NMSA 1978, Secciones 74-6-1 a -17 (1967, según enmendada hasta 2019); la Ley de Reglas del Estado, NMSA 1978, Sección 14-4-5.3; y otros procedimientos aplicables.

Si alguna persona requiere asistencia, un intérprete o un dispositivo auxiliar para participar en este proceso, póngase en contacto con Pamela Jones, administradora de la WQCC, en la dirección arriba indicada, a más tardar hasta el 1 de junio de 2021. (Los usuarios de TDD o TTY pueden acceder al número a través de New Mexico Relay Network, llamen al 1-800-659-1779 (voz); los usuarios de TTY: llamen al 1-800-659-8331).

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Rule Hearing Search

Hearing Date: All

Comments Deadline Date: All

Agency: Environment Department

Search

Total Results: 24 - Page #1

View	Agency	Public Hearing	Purpose	Hearing Date	Comments Due Date
View Details	Environment Department	AMENDMENTS TO 20.6.4 NMAC, TRIENNIAL REVIEW OF STANDARDS FOR SURFACE WATERS	AMENDMENTS TO 20.6.4 NMAC, TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS	7/13/2021	7/13/2021 12:00 PM
View Details	Environment Department	DESIGNATION OF UPPER PECOS WATERSHED AS NATIONAL RESOURCE , WQCC 20-18 (R)	DESIGNATION OF WATERS OF THE UPPER PECOS WATERSHED AS OUTSTANDING NATIONAL RESOURCE WATERS	4/13/2021	4/13/2021 12:00 PM
View Details	Environment Department	PROPOSED AMENDMENTS TO 11.5.1.16 NMAC - EIB 20-55	The amendment's purpose is to require employers to report an employee's positive novel coronavirus test to the Occupational Health and Safety Bureau within 4 hours of notice.	12/18/2020	11/27/2020 5:00 PM
View Details	Environment Department	Proposed Revisions to: 20.7.5 NMAC - Wastewater Facility Construction Loans	Wastewater Facility Construction Loans	9/28/2020	
View Details	Environment Department	NOTICE OF PUBLIC HEARING FOR AMENDMENTS TO 20.6.4 NMAC	The purpose of the hearing is to consider proposed amendments to 20.6.4 NMAC.	3/10/2020	2/17/2020 5:00 PM
View Details	Environment Department	NOTICE OF PUBLIC HEARING FOR REPEALING AND REPLACING 20.7.11 NMAC	The purpose of the hearing is to consider repealing and replacing 20.7.11, Liquid Waste Treatment and Disposal Fees, which authorizes liquid waste treatment and disposal fees for the administration of the state liquid waste regulations.	2/28/2020	2/7/2020 5:00 PM
View Details	Environment Department	Notice of Public Hearing to Amend 20.7.6 NMAC and 20.7.7 NMAC	The purpose of the hearing is to consider amendments to Wastewater Facility Construction Loan Policies and Guidelines, 20.7.6 NMAC and repeal and replacement of Review Procedures for Wastewater Construction Loans, 20.7.7 NMAC ("Rules").	1/17/2020	1/2/2020 5:00 PM

NMED Exhibit 103

View	Agency	Public Hearing	Purpose	Hearing Date	Comments Due Date
View Details	Environment Department	Hazardous Waste Permit/Corrective Action Fees and Annual Hazardous Waste Fees	The purpose of the amendments is to update the Hazardous Waste Permit and Corrective Action Fee Regulations, 20.4.2 NMAC and the Annual Hazardous Waste Fees, 20.4.3 NMAC, to incorporate changes in fees based on inflation since 2004	12/20/2019	12/2/2019 5:00 PM
View Details	Environment Department	PUBLIC HEARING FOR ADOPTION OF RULE 20.10.2 NMAC, HEMP POST-HARVEST PROCESSING	The purpose of the hearing is to consider the adoption of new rule 20.10.2 NMAC, Hemp Post-Harvest Processing of the Environmental Protection Regulations.	12/2/2019	11/15/2019 5:00 PM
View Details	Environment Department	Proposed Repeal of 20.2.20 NMAC (Lime Manufacturing Plants-Particulate Matter)	The purpose of the public hearing is to consider and take possible action on a petition from NMED to repeal 20.2.20 NMAC. The purpose of the proposed repeal of 20.2.20 NMAC is to remove outdated requirements.	11/30/2018	10/28/2018 5:00 PM

First Next Last

(/)

Rule Hearing Search

Hearing Date: All

Comments Deadline Date: All

Agency: Environment Department

Search

Return to Search Results

Proposed Rule Name:
AMENDMENTS TO 20.6.4 NMAC, TRIENNIAL REVIEW OF STANDARDS FOR SURFACE WATERS

Agency:
Environment Department

Purpose:
The purpose of the hearing is to consider proposed amendments to 20.6.4 NMAC, Standards for Interstate and Intrastate Surface Waters. These amendments have been proposed as a result of a review of state water quality standards and reflect updates to those standards as required by the federal Clean Water Act and the state Water Quality Act.

Summary:
AMENDMENTS TO 20.6.4 NMAC, TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

Administratives Codes:
20.6.4 NMAC

Rule Complete Copy :
The petition and proposed amendments are available on the Water Quality Control Commission's website, at **https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/ (https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/)**. The petition may also be obtained electronically by contacting Pamela Jones, Commission Administrator, 1190 S. St. Francis Drive, Santa Fe, New Mexico 87502, (505) 660-4305 or **Pamela.Jones@state.nm.us (mailto:Pamela.Jones@state.nm.us)**.

Corrections:
Click Here to access Rule Corrections (https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/)

Rule Explanatory Statement:
Click Here to access the Rule Explanatory Statement (http://164.64.110.134/nmac/nmregister/xxxii/EDnotice_xxxii2.html)

Related New Mexico Register Publications:
Not available

For any additional information or questions concerning this rule making or posting please contact:
Pamela Jones, Commission Administrator
pamela.jones@state.nm.us
(505) 660-4305

Last Updated Date
3/10/2021 2:27 PM

How to submit Comments:
Those wishing to do so may offer non-technical public comment at the hearing or submit a non-technical written statement in lieu of oral testimony at or before the hearing. Written comments regarding the proposed amendment may be addressed to Pamela Jones, WQCC Administrator, at the above address, and should reference docket number WQCC 20-51 (R).

When are comments due:
7/13/2021 12:00 PM

Hearing Date:
7/13/2021 9:00 AM

Public Hearing Location:
The WebEx video conferencing platform. **https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6 (https://nmed-oit.webex.com/nmed-oit/j.php?MTID=m173d2e7c86c3828b4dbdcb4d1fe06be6)** 7/13/2021 (9:00 AM -)

How to participate:
Those wishing to do so may offer non-technical public comment at the hearing or submit a non-technical written statement in lieu of oral testimony at or before the hearing. Written comments regarding the proposed amendment may be addressed to Pamela Jones, WQCC Administrator, at the above address, and should reference docket number WQCC 20-51 (R). Pursuant to 20.1.6.203 NMAC, any person may file an entry of appearance as a party. The entry of appearance shall be filed with the WQCC Administrator, at the above address, no later than June 23, 2021, 20 days before the date of the hearing.

ⓘ If the document is not visible on the previewer, please download the file.

File	File Name	File Type	Description

From: Maxfield, Annie, NMENV
To: joanne.vandestreek@nmlegis.gov
Cc: lcs@nmlegis.gov; Verheul, John, NMENV
Subject: Notice of Upcoming Rulemaking Proceeding
Date: Wednesday, March 31, 2021 5:08:35 PM
Attachments: 2020 TR Hearing Notice 20210129 Stakeholders.pdf

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Good afternoon Ms. Vandestreek,

I am writing to provide notice to you of a petition to amend regulations (20.6.4 NMAC, Standards for Interstate and Intrastate Surface Waters) that the New Mexico Environment Department filed with the Water Quality Control Commission.

In accordance with NMSA 1978, Section 14-4-2(E), I'm sending the attached notice to you fulfill the requirement of distributing rulemaking information by providing it to the New Mexico legislative council service for distribution to the appropriate interim and standing legislative committees. The notice was also published in the New Mexico Register here:

http://164.64.110.134/nmac/nmregister/xxxii/EDnotice_xxxii2.html

Please let me know if you have any questions or require additional information.

Thank you,

Annie Maxfield
Assistant General Counsel
New Mexico Environment Department
121 Tijeras Avenue NE, Ste 1000
Albuquerque, NM 87102
Annie.Maxfield@state.nm.us
505-222-9592 phone
505-383-2064 fax

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Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

VIA EMAIL

March 29, 2021

Small Business Regulatory Advisory Commission
c/o Johanna Nelson
New Mexico Economic Development Department
1100 St. Francis Drive
Santa Fe, New Mexico 87501
Johanna.Nelson@state.nm.us

Re: Proposed Amendments of 20.6.4 NMAC – *Standards for Interstate and Intrastate Surface Waters*

Dear Commission Members:

The New Mexico Environment Department ("Department") hereby provides notice to the Small Business Regulatory Advisory Commission, pursuant to the Small Business Regulatory Relief Act ("Act"), NMSA 1978, Sections 14-4A-1 to -5 (2005), that the Water Protection Division, Surface Water Quality Bureau ("Bureau") has submitted a petition to the Water Quality Control Commission (WQCC) to amend 20.6.4 NMAC – *Standards for Interstate and Intrastate Surface Waters*. In accordance with 33 U.S.C. §1313(c)(1) of the federal Clean Water Act and the State's Surface Water Quality Standards at 20.6.4.10(A) NMAC, the State is required to hold public hearings no less than every three years to review and, as appropriate, modify and adopt water quality standards. This periodic review of the standards is referred to as a "Triennial Review."

Extensive public participation has been solicited regarding the proposed amendments for this year's Triennial Review, including a public comment period of 75 days, three online WebEx stakeholder meetings, and two online WebEx public meetings. Stakeholder and other public comments have been considered in proposing the amendments. For more information on this process and the amendments the Bureau has proposed, please visit the Bureau's webpage at https://www.env.nm.gov/surface-water-quality/2020-triennial-review/.

The WQCC will hold a hearing on the proposed regulatory amendments (Docket No. WQCC 20-51 (R)) beginning on Tuesday, July 13, 2021. For details regarding the time and location of the hearing please check the WQCC website at: https://www.env.nm.gov/water-quality-control-commission/wqcc-20-51-r/. The hearing will be conducted in accordance with the WQCC Rulemaking Procedures at 20.1.6 NMAC.

Pursuant to Section 14-4A-4 of the Act, the Department anticipates that the proposed regulatory amendments will have minimal impact on small businesses. If you require further information about

these proposed regulatory amendments, please call me at (505) 383-2063 or email me at john.verheul@state.nm.us.

Sincerely,

/s/ John Verheul

John Verheul
Assistant General Counsel
New Mexico Environment Department