Exhibit 21

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE 2003
TRIENNIAL REVIEW OF THE NEW MEXICO
SURFACE WATER STANDARDS; PROPOSED
AMENDMENTS TO 20.6.4 NMAC

REGENTS OF THE UNIVERSITY OF CALIFORNIA'S
PETITION FOR REGULATORY CHANGE

The Regents of the University of California ("University"), pursuant to the Scheduling Order in this matter, hereby submits its petition to amend 20.6.4 NMAC. In support of the petition, the University states:

1. The University is a branch of the government of the State of California, and is the operations and maintenance contractor of Los Alamos National Laboratory under contract with the federal Department of Energy.

2. Pursuant to 40 CFR §131.20(a), New Mexico is required to hold public hearings at least once every three years "for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards."

3. The Commission has established a process for the New Mexico Environment Department ("Department") and interested parties to submit proposed changes to the surface water quality standards prior to the hearing.

4. On August 15, 2003, the Department filed its petition for hearing and proposed changes.

5. The University has reviewed the current standards and the Department's proposed changes, and has prepared proposed changes that it

believes are necessary and appropriate to assure that the standards conform to applicable requirements of federal and state law. The University's proposed regulatory changes, attached to this petition.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By _____

Louis W. Rose
Post Office Box 2307
Santa Fe, New Mexico 87504-2307
(505) 982-3873

N. Philip Wardwell, Esq.
Office of Laboratory Counsel
Los Alamos National Laboratory
Post Office Box 1663, MS-187
Los Alamos, NM 87545-0001
(505) 667-3766

Attorneys for The Regents of the University of California

whole effluent and a series of effluent dilutions. Chronic toxicity due to discharges shall not occur at the critical low flow, or any flow greater than the critical low flow, in any surface water of the state with an existing or designated fishery use more than once every three years.

Basis: Provide updated reference.

20.6.4.121 RIO GRANDE BASIN

Basis: The following proposed segments are watercourses draining Los Alamos National Laboratory. The Laboratory has used data from Lusk et al. 2002, 34 stream-gauging stations (Shaull et al. 1996a, 1996b, 1998, 1999, 2000, 2001, 2002, 2003), and observations by Laboratory and New Mexico Environment Department personnel to segment the streams based upon clear differences in hydrology and associated aquatic life. The segments were broken, wherever possible, at clearly identifiable locations, such as tributaries. The proposal covers only locations within the Laboratory boundary and does not cover lands under jurisdiction of, or scheduled to be transferred to San Ildefonso Pueblo, Los Alamos County, US Park Service, or US Forest Service.

20.6.4.121a 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.

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

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900.G2, 20.6.4.900.L, and 20.6.4.900.L2 NMAC and the acute and chronic criteria for aquatic life in 20.6.4.900.J and 20.6.4.900.M NMAC are applicable to the designated uses listed above in Subsection A of this section. Dissolved oxygen shall not be less than a 24-hour average of 4 mg/L, pH shall be within the range of 6.6 to 9.0. The total ammonia criteria set forth in sections 20.6.4.900.N (Salmonids Absent) and 20.6.4.900.O2 NMAC are applicable to this use.

(2) The monthly geometric mean of E. coli bacteria shall not exceed 548/100 mL; no single sample shall exceed 2507/100 mL (see Subsection B of 20.6.4.13 NMAC).

Basis: Data from an extensive network of stream-gauging stations (Shaull et al. 1996a, 1996b, 1998, 1999, 2000, 2001, 2002, 2003) indicates these segments, ranging in length from about 1500 feet to over a mile, are perennial. They also indicate that flows are often very low, in some cases averaging only about 0.01 cfs or about 4.5 gal/minute.

Lusk et al. (2002) compared aquatic life in perennial segments of Cañon de Valle, Pajarito Canyon and Sandia Canyon to Los Alamos Canyon above Los Alamos Reservoir, the latter having an existing fishery use. The study found no fish in perennial segments of Cañon de Valle, Pajarito Canyon and Sandia Canyon and found that habitat for fish was poor compared to Los Alamos Canyon. To quantify the overall habitat quality, the study used a Habitat Quality Index that summarized 22 characteristics of trout habitat, such as the variation in flow, the nature of the stream bottom, the proportion of pools and riffles, and the type of streamside vegetation. The

resulting Habitat Quality Index "[s]cores for the other canyon stream reaches were roughly ⅓ to ¼ of those calculated for Los Alamos Canyon..." In addition to the limited flow and poor habitat quality for fish, the Use Study also indicates that fish are not likely to naturally occur in these canyons because "[t]he steep, >250-m drop from the Pajarito Plateau into White Rock Canyon containing the Rio Grande ... as well as the occurrence of ephemeral segments in most of these canyons, likely prevents the natural migration of fish from the Rio Grande." This indicates that the habitat provides support to a limited community of organisms not including fish. The naturally unfavorable hydrology with highly variable flows continually removes food and cover for fish, so a coldwater fishery use is not attainable.

Wildlife habitat and secondary contact are uses common to all waters of the state and therefore are proposed for these waters.

Other common uses, such as irrigation, livestock watering, and primary contact are not existing uses. None of these surface waters, which are deeply incised in canyons, naturally produce sufficient water for cost-effective irrigation, which would involve pumping water up several hundred feet in elevation. The most reliable flow is the Starmers Spring/Pajarito Canyon segment, which has flowed throughout the current drought. However, typical base flow is approximately 0.01 cfs, or about 4.5 gal minute, which is insufficient to support irrigation. The Cañon de Valle segment studied by Lusk et al. (2002) has dried up during the recent drought, although a small flow remains upstream from the study site. The Sandia Canyon is a naturally ephemeral canyon that provides no water for irrigation.

Primary contact recreation or other primary contact activities are not permitted within the Laboratory to which access is restricted by fencing, security patrols, and other means. Moreover, these small springs and streams do not have sufficiently large sustained flows and associated pools to support primary contact recreation. The most recent US EPA guidance (2002c) indicates primary contact recreation should be assigned as a designated use where activities occur that "logically include swimming, water skiing, kayaking, and any other activity where contact and immersion in the water is likely." Not only are none of these activities likely, they are generally impossible. US EPA (2002c) also recommends against allowing primary contact activities where "high wet weather flows result in dangerous conditions physically precluding recreation (e.g., arroyo washes in the arid west)..."

Livestock are not permitted within the Laboratory. Access is restricted by fencing, security patrols, and other means. Livestock watering is not an existing use; it is not compatible with the Department of Energy current and expected use of the Laboratory property and therefore is not a reasonably attainable use. Livestock watering is not a use listed in Section 101(a)2 of the Clean Water Act that generally requires protection.

Proposed dissolved oxygen levels were obtained from the "Gold Book" (EPA, 1996). Proposed E. coli values are from the Department proposal for secondary contact.

20.6.4.121b 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, secondary contact, and primary contact.

B. Criteria:

(1) In any single sample: pH shall be within the range of 6.6 to 8.8, and temperature shall not exceed 20°C (68°F). 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 shall not exceed 126/100 mL; no single sample shall exceed 410/100 mL (see Subsection B of 20.6.4.13 NMAC).

Basis: This section is intended to be identical with the Department proposal and has included this section for completeness.

20.6.4.121c RIO GRANDE BASIN – Ephemeral and intermittent portions of watercourses within lands managed by US 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 20.6.4.121a. (Surface waters within lands scheduled for transfer from DOE to tribal, state and/or local authorities are specifically excluded.)

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

B. Criteria:

(1) The use-specific criteria in 20.6.4.900.G2, 20.6.4.900.L, and 20.6.4.900.L2 NMAC and the acute criteria for aquatic life in 20.6.4.900.J(1) and 20.6.4.900.M NMAC 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 548/100 mL, no single sample shall exceed 2507/100 mL (see Subsection B of 20.6.4.13 NMAC).

Basis: This subsection is intended to clarify applicable standards to ephemeral and intermittent waters within Los Alamos National Laboratory. Livestock watering is specifically not included because it is not an existing or attainable use as discussed above.

20.6.4.900 CRITERIA APPLICABLE TO ATTAINABLE OR DESIGNATED USES

B. Domestic Water Supply: Surface waters of the state designated for use as domestic water supplies shall not contain substances in concentrations that create a lifetime cancer risk of more than one cancer per 100,000 exposed persons. The following numeric standards and those standards listed under domestic water supply in Subsection M of this section are applicable to this use [~~shall not be exceeded~~]:

(1) dissolved nitrate (as N) 10. mg/L
(2) radium-226 + radium-228 5. pCi/L
(3) strontium-90 8 pCi/L
(4) tritium 20,000 pCi/L
(5) gross alpha (including radium-226, but excluding radon and uranium) 15 pCi/L

Exhibit 22

REVISED
PROPOSED AMENDMENTS AND STATEMENT OF BASIS
FOR NEW MEXICO ENVIRONMENT DEPARTMENT PETITION

THE 2003 TRIENNIAL REVIEW
OF THE NEW MEXICO SURFACE WATER QUALITY STANDARDS

OCTOBER 1, 2003

This document contains the text of sections of the surface water quality standards that contain proposals for changes Deleted materials are indicated by strikethrough, and new materials are indicated by underlining Endnotes are used to provide the basis for changes that occur in multiple locations in the document and where the use of endnotes make the changes easier to follow Endnotes begin at page [~~82~~] 85 Revisions to the August 15, 2003, Proposed Amendments and Statement of Basis are indicated by a gray background

20.6.4.2 SCOPE: Except as otherwise provided by statute or regulation of the water quality control commission, this part governs all surface waters of the state of New Mexico,[1] which are subject to the New Mexico Water Quality Act, Sections 74-6-1 through 74-6-17 NMSA 1978

20.6.4.6 OBJECTIVE:

B. The state of New Mexico is required under the New Mexico Water Quality Act (Subsection C of Section 74-6-4 NMSA 1978) and the federal Clean Water Act, as amended (33 U S C Section 1251 *et seq*) to adopt water quality standards that protect the public health or welfare, enhance the quality of water, and are consistent with and serve the purposes of the New Mexico Water Quality Act and the federal Clean Water Act It is the objective of the federal Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the nation's waters, including those in New Mexico This part is consistent with Section 101(a)(2) of the federal Clean Water Act, which declares that it is the national goal that wherever attainable, an interim goal of water quality [~~which~~] that[2] 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 Agricultural, municipal, domestic and industrial water supply are other essential uses of New Mexico's surface water, however, water contaminants resulting from these activities will not be permitted to lower the quality of surface waters of the state below that [~~which is~~][3] required for [~~recreation and maintenance of a fishery and protection of wildlife~~] protection and propagation of fish, shellfish and wildlife, and recreation in and on the water, where practicable

Basis Final sentence rephrased for consistency with previous sentence and CWA Section 101(a)(2)

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

to 8 8, and temperature [~~shall not exceed~~] 20°C (68°F) or less [~~, and turbidity shall not exceed 25 NTU~~] [11] The use-specific numeric [~~standards~~] criteria[4] set forth in 20 6 4 900 NMAC are applicable to the designated uses listed above in Subsection A of this section

(2) [9] [~~The monthly geometric mean of fecal coliform bacteria shall not exceed 100/100 mL, no single sample shall exceed 200/100 mL~~] The monthly geometric mean of E coli bacteria [~~shall not exceed~~] 126/100 mL or less, [~~no~~] single sample [~~shall exceed~~] 235/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

20.6.4.120 RIO GRANDE BASIN - El Vado and Heron reservoirs.

A. Designated Uses irrigation storage, livestock watering, wildlife habitat, primary contact, and coldwater [~~fishery~~] [5] aquatic life

B. [~~Standards~~]Criteria[4] *(See endnote 26)*

(1) At any sampling site pH [~~shall be~~] within the range of 6 6 to 8 8, and temperature [~~shall not exceed~~] 20°C (68°F) or less [~~, and turbidity shall not exceed 25 NTU~~] [11] The use-specific numeric [~~standards~~] criteria[4] set forth in 20 6 4 900 NMAC are applicable to the designated uses listed above in Subsection A of this section

(2) [7] [~~The monthly geometric mean of fecal coliform bacteria shall not exceed 100/100 mL, no single sample shall exceed 200/100 mL~~] The monthly geometric mean of E coli bacteria [~~shall not exceed~~] 126/100 mL or less, [~~no~~] single sample [~~shall exceed~~] 235/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

20.6.4.121 RIO GRANDE BASIN - Perennial tributaries to the Rio Grande in Bandelier national monument and their headwaters in Sandoval county, and all perennial reaches of tributaries to the Rio Grande in Santa Fe county unless included in other segments.

A. Designated Uses domestic water supply, high quality coldwater [~~fishery~~] [5] aquatic life, irrigation, livestock watering, wildlife habitat, municipal and industrial water supply, secondary contact, and primary contact

B. [~~Standards~~]Criteria[4] *(See endnote 26)*

(1) In any single sample [~~conductivity~~] specific conductance[23] [~~shall not exceed~~] 300 µmhos or less, pH [~~shall be~~] within the range of 6 6 to 8 8, and temperature [~~shall not exceed~~] 20°C (68°F) or less [~~, and turbidity shall not exceed 10 NTU~~] [11] The use-specific numeric [~~standards~~] criteria[4] set forth in 20 6 4 900 NMAC are applicable to the designated uses listed above in Subsection A of this section

(2) [7] [~~The monthly geometric mean of fecal coliform bacteria shall not exceed 100/100 mL, no single sample shall exceed 200/100 mL~~] The monthly geometric mean of E coli bacteria [~~shall not exceed~~] 126/100 mL or less, [~~no~~] single sample [~~shall exceed~~] 235/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

Basis Adds "and" in segment description where it appears to be missing

20.6.4.121a[24] RIO GRANDE BASIN – [~~Perennial portions of Los Alamos Canyon below Los Alamos Reservoir and~~] 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, [~~and~~] Pajarito [~~Canyons~~] 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, [~~irrigation,~~] livestock watering, wildlife habitat, and secondary contact[~~, and primary contact~~]

B. Criteria *(See endnote 26)*

(1) In any single sample pH [~~shall be~~] within the range of 6 6 to 8 8, and temperature [~~shall not exceed~~] 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 [~~shall not exceed~~] [~~126/100~~] 2507/100 mL or less, [~~no~~] single sample [~~shall exceed~~] [~~410/100~~] 2507/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

Basis New segment to classify waters based upon study by Fish and Wildlife Service

Basis The segment description is corrected , irrigation and primary contact uses are eliminated, and the E coli criteria are amended Available information indicates the presence of coldwater invertebrate taxa that may not be tolerant of a lower dissolved oxygen criterion As proposed by NMED, the coldwater aquatic life use is appropriate because it does not require the presence of fish Livestock watering is also an appropriate use because it has historically been presumed to be a use for all surface waters of the state Whether livestock watering is an existing or attainable use, as those terms are defined, and whether the elimination of the criteria for protection of that use will be protective of downstream waters, are issues that should be carefully examined before eliminating the use from these waters

20.6.4.121b[24] 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, secondary contact, and primary contact

B. Criteria *(See endnote 26)*

(1) In any single sample pH [~~shall be~~] within the range of 6 6 to 8 8, and temperature [~~shall not exceed~~] 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 [~~shall not exceed~~] 126/100 mL or less, [~~no~~] single sample [~~shall exceed~~] 410/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

Basis New segment to classify waters based upon study by Fish and Wildlife Service

20.6.4.121c[24] RIO GRANDE BASIN – Ephemeral and intermittent portions of water courses within lands managed by US Department of Energy (DOE) within Los Alamos National Laboratory, including but not limited to, Mortandad Canyon, Cañon 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 20.6.4.121a. (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 548/100 mL or less, single sample 2507/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

Basis The segment description is conformed to that proposed by Los Alamos National Laboratory (LANL) Available information indicates the presence of coldwater invertebrate taxa that may not be tolerant of lower dissolved oxygen criterion Criteria proposed are those included in the proposal for 20 6 4 98 Livestock watering is an appropriate use because it has historically been presumed to be a use for all surface waters of the state Whether livestock watering is an existing or attainable use, as those terms are defined, and whether the elimination of the criteria for protection of that use will be protective of downstream waters, are issues that should be carefully examined before eliminating the use from these waters

20.6.4.122 RIO GRANDE BASIN - The main stem of the Rio Grande from [~~Taos Junction bridge~~] Rio Pueblo de Taos upstream to the New Mexico-Colorado line, the Red river from its mouth on the Rio Grande upstream to the mouth of Placer creek, and the Rio Pueblo de Taos from its mouth on the Rio Grande upstream to the mouth of the Rio Grande del Rancho.

A. Designated Uses coldwater [~~fishery~~][5] aquatic life, fish culture, irrigation, livestock watering, wildlife habitat, and primary contact

B. [~~Standards~~]Criteria[4] *(See endnote 26)*

(1) In any single sample pH [~~shall be~~] within the range of 6 6 to 8 8, and temperature [~~shall not exceed~~] 20°C (68°F) or less [~~, and turbidity shall not exceed 50 NTU~~][11] The use-specific numeric [~~standards~~] criteria[4] set forth in 20 6 4 900 NMAC are applicable to the designated uses listed above in Subsection A of this section

(2)[7] [~~The monthly geometric mean of fecal coliform bacteria shall not exceed 100/100 mL, no single sample shall exceed 200/100 mL~~] The monthly geometric mean of E coli bacteria [~~shall not exceed~~] 126/100 mL or less, [~~no~~] single sample [~~shall exceed~~] 235/100 mL or less (see Subsection B of 20 6 4 13 NMAC)

Basis "Taos Junction bridge" changed to "Rio Pueblo de Taos" to use a hydrologic rather than a cultural feature

20.6.4.123 RIO GRANDE BASIN - [~~The~~] Perennial reaches of the[12] Red river upstream of the mouth of Placer creek, all perennial reaches of[12] tributaries to the Red river, and all other perennial reaches of tributaries to the Rio Grande in Taos and Rio Arriba counties unless included in other segments.

A. Designated Uses domestic water supply, fish culture, high quality coldwater [~~fishery~~][5] aquatic life, irrigation, livestock watering, wildlife habitat, and secondary contact

B. [~~Standards~~]Criteria[4] *(See endnote 26)*

Exhibit 23

STATE OF NEW MEXICO

WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS, 20.6.4 NMAC

WQCC 03-05 (R)

DIRECT TESTIMONY

OF

FREDERICK M. FISHER, Ph.D.

Montgomery & Andrews, P.A.
Louis W. Rose
Post Office Box 2307
Santa Fe, New Mexico 87504-2307

should not be used to deny a Section 401 permit certification. This means that the state would have to maintain separate data that could be used to support the 401 certification process. A denial of certification becomes vulnerable to challenge because the methods used to indicate standards violations are not approved under 40 CFR 136.

This issue was discussed at length during the 1998 triennial review and the Commission did not implement changes proposed by the Bureau at that time. If the Bureau proposal were to be implemented, a rigorous process involving scientific review and public comment must be developed similar to the US EPA process that supports 40 CFR 136. Additionally, the proposed language allows the Secretary of the Environment, not the Commission, to approve and disapprove methods. The Laboratory believes that the Commission should have approval authority in such matters.

BUREAU AND LABORATORY PROPOSALS: 20.6.4.121a, b, c. RIO GRANDE BASIN

Both the Laboratory and the Bureau have proposed to classify all watercourses draining Los Alamos National Laboratory and the proposals are similar. Both the Laboratory and the Bureau proposals reference Lusk et al. 2002, over 70 stream-gaging stations (Koch et al. 2001, 2002, 2003, Shaull et al. 1996a, 1996b, 1998, 1999, 2000, 2001, 2002, 2003), and observations by Laboratory and NM Environment Department personnel to segment the streams based upon clear differences in hydrology and associated aquatic life. The segments were broken at clearly identifiable locations, such as tributaries. With the exception of Los Alamos Canyon upstream (west) of the Laboratory, the proposal covers only locations within the Laboratory boundary and does not cover lands under jurisdiction of, or scheduled to be transferred to San Ildefonso Pueblo, Los Alamos County, US Park Service, or US Forest Service.

The segments in both proposals consist of approximately 85 miles of watercourses located within the Laboratory as well as portions of Los Alamos Canyon upstream from the Laboratory. Of the 85 miles of watercourse within the Laboratory, approximately 2.2 miles are proposed for classification as naturally perennial and approximately 2.7 miles are perennial waters created by effluent. The naturally perennial waters within the Laboratory have been designated in 3 segments ranging in length from about 1700 ft to about 6800 ft. The major differences in the two proposals are the proposed designated uses as will be discussed below. Exhibit 2 Map 1 shows the watercourses within the Laboratory boundaries. The following maps in Exhibit 2 show the watersheds with perennial flows and include tabular information summarizing flow data from the extensive network of gaging stations.

Both proposals divide the water bodies into three groups based on designated uses. The first group at 20.6.4.121a NMAC consists of perennial waters within the Laboratory. Three of these segments are naturally perennial and one segment is created by effluent. The second group at 20.6.4.121b NMAC consists of the perennial portions of Los Alamos (LA) Canyon and LA Reservoir that are outside of the Laboratory. LA Canyon and Reservoir differs from the perennial waters within the Laboratory in that a coldwater fishery and irrigation are existing uses in accordance with the Clean Water Act. In fact, trout were stocked in these waters up until the Cerro Grande fire in 2000. Neither use is currently attained because of high erosion rates following the Cerro Grande fire. The third group (20.6.4.121c NMAC) consists of the remaining 80 miles of ephemeral and intermittent waters within the Laboratory.

The Laboratory is proposing that the default acute and chronic criteria for protection of aquatic life in 20.6.4.900.M NMAC apply to surface water segments within the Laboratory where a fisheries use is not designated, existing or attainable. The Laboratory has information

indicating that ambient concentrations of some constituents in surface waters upstream and adjacent to the Laboratory may exceed aquatic life criteria. These possible exceedances are partly related to runoff from areas burned by the Cerro Grande Fire but some also appear to be related to the unusual geology and hydrology of the Pajarito Plateau and are expected to persist after recovery from the forest fire. The Laboratory is collecting additional data on aquatic life and water chemistry inside and outside of the Laboratory to develop site-specific standards for these segments. Upon completion, the Laboratory will return to the Commission and propose site-specific modifications of water quality standards.

The "Use Study"

To date, the most comprehensive study of perennial waters within the Laboratory was performed by US Fish and Wildlife Service (FWS) personnel (Lusk et al. 2002) with funding from the Department of Energy to evaluate potential stream uses for these segments, and is commonly referred to as the "Use Study." One major recommendation of the Use Study was that the designated use of a coldwater fishery be applied because it was an attainable use for all perennial segments in the Laboratory Canyons. However, the Laboratory has had many technical issues and concerns about this study that have previously been documented in letters in April and May 2001 from the Laboratory to the Department of Energy (Erickson 2001; UC Exhibit 7), from the Department of Energy to the US FWS (Gurule 2001; UC Exhibit 10) and from the Laboratory to the Bureau (Rae 2001; UC Exhibit 14). The Bureau responded in August 2001 to the Department of Energy (Davis 2001; UC Exhibit 6). Only a few of the numerous issues mentioned in the references will be discussed today.

It is interesting to note that the draft Use Study concluded in 2001 that a marginal coldwater fishery was appropriate for the Laboratory canyons based upon observed temperatures

and dissolved oxygen that sometimes failed to meet criteria for a coldwater fishery (additional discussion below). However, the Bureau responded that the definition of a marginal coldwater fishery (20.6.4.7.DD NMAC) requires that fish be present whereas the definition of a coldwater fishery (20.6.4.7.I NMAC) does not require the presence of fish. Essentially, this says that because fish are absent, a higher quality use consisting of a more complex aquatic community is attainable. This illustrates the problems with extending the fisheries categories to include water bodies where fish are naturally absent. The proposed limited aquatic life category addresses this issue and simplifies the designation of use categories.

One of the major concerns is that many of the conclusions are based upon data collected in 1997, which was an atypically cool and wet year for the period of 1961 to present as shown by UC Exhibit 1 Chart 1. This can lead to erroneous conclusions regarding flow volumes, temperatures and dissolved oxygen. In fact, one of the areas recommended as a coldwater fishery has been dry for at least a year, having measurable flow in only 5 days since the installation of the stream gage in January 2002 (Unpublished data). Another major concern was that the Los Alamos (LA) Canyon segment was used as a basis of comparison (reference site) for the Laboratory Canyons. However, Exhibit 1 Charts 2, 3 and 4 show that LA Canyon has a much more gradual decent down to the Rio Grande and that the study sites in LA Canyon were at a higher elevation and in a much deeper canyon. The position of the LA Canyon study sites makes them cooler and wetter than the Laboratory canyon study sites. As detailed below, the fact that coldwater fishery is an existing use in LA Canyon does not lead to the conclusion that the warmer, drier Laboratory Canyons, where no fish have been known to occur, should also support a coldwater fishery, or for that matter, coldwater aquatic life.

20.6.4.121a 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 to Starmers Spring, and Water Canyon from Area-A Canyon upstream to State Route 501.

The Laboratory proposes designated uses for these segments of limited aquatic life (acute and chronic criteria), wildlife habitat, and secondary contact. The Bureau proposes coldwater aquatic life, livestock watering, wildlife habitat, and secondary contact. Some previous proposals by the Bureau and others have included irrigation and primary contact for the Laboratory canyons.

The Use Study found no fish in perennial segments of Cañon de Valle, Pajarito Canyon and Sandia Canyon and concluded that habitat for fish was poor compared to LA Canyon. To quantify the overall habitat quality, the study used a Habitat Quality Index that summarized 22 characteristics of trout habitat, such as the variation in flow, the nature of the stream bottom, the proportion of pools and riffles, and the type of streamside vegetation. The resulting Habitat Quality Index "[s]cores for the other canyon stream reaches were roughly ⅓ to ¼ of those calculated for Los Alamos Canyon..." (Use Study, page 79) In addition to the limited flow and poor habitat quality for fish, the Use Study also indicates that fish are not likely to naturally occur in these canyons because "[t]he steep, >250-m drop from the Pajarito Plateau into White Rock Canyon containing the Rio Grande ... as well as the occurrence of ephemeral segments in most of these canyons, likely prevents the natural migration of fish from the Rio Grande." (Use Study, page 77) This indicates that the habitat provides support to a limited community of organisms not including fish. The naturally unfavorable hydrology with highly variable flows continually removes food and cover for fish, so a coldwater fishery use is not attainable. In winter, limited flow and volume allows the Laboratory streams to freeze completely through to

the bottom (UC Exhibit 3, Photos 7, 13) leaving little or no refuge for fish. As discussed below, coldwater temperature and dissolved oxygen criteria are also not attainable so that a classification of coldwater aquatic life, should one be approved, is also not attainable.

Wildlife habitat and secondary contact are uses common to all waters of the state and therefore are proposed for these waters.

Other common uses, such as irrigation, livestock watering, and primary contact are not existing uses in the Laboratory Canyons. None of these surface waters, which are deeply incised in canyons, naturally produce sufficient water for cost-effective irrigation, which would involve pumping water up several hundred feet in elevation. The most reliable flow is the Starmers Spring/Pajarito Canyon segment, which has flowed throughout the current drought. However, typical base flow is approximately 0.01 cfs, or about 4.5 gal minute, which is insufficient to support irrigation (UC Exhibit 3, Photos 5, 6). The Cañon de Valle segment Use Study site just below gage E256 has dried up during the recent drought, although a small flow remains upstream from the study site (UC Exhibit 3, Photos 8, 9, 10). The Sandia Canyon is a naturally ephemeral canyon that provides no water for irrigation (UC Exhibit 3, Photos 3, 4).

Primary contact recreation or other primary contact activities are not permitted within the Laboratory to which access is restricted by fencing, security patrols, and other means. Moreover, these small springs and streams do not have sufficiently large sustained flows and associated pools to support primary contact recreation. The most recent US EPA guidance (2002c; UC Exhibit 21) indicates primary contact recreation should be assigned as a designated use where activities occur that "logically include swimming, water skiing, kayaking, and any other activity where contact and immersion in the water is likely." Not only are none of these activities likely, they are generally impossible. US EPA (2002c; UC Exhibit 21) also recommends against

allowing primary contact activities where "high wet weather flows result in dangerous conditions physically precluding recreation (e.g., arroyo washes in the arid west)..."

Livestock are not permitted within the Laboratory. Access is restricted by fencing, security patrols, and other means (UC Exhibit 3, Photo 14). Livestock watering is not an existing use; it is not compatible with the Department of Energy current and expected use of the Laboratory property and therefore is not a reasonably attainable use. Livestock watering is not a use listed in Section 101(a)2 of the Clean Water Act that generally requires protection.

The proposed ammonia criteria for these segments specifically eliminates those criteria clearly dependent on the presence of fish. The proposed E. coli values are from the Bureau proposal for secondary contact. The deletion of "shall be," "shall not exceed," "no single sample shall exceed," and the addition of "or less" reflects changes made by the Bureau proposal. The Bureau proposal of a monthly geometric mean of 2507/100 ml is not consistent with other documentation and appears to be in error.

Proposed temperature and dissolved oxygen levels were based on data collected by the Use Study showing that coldwater fisheries criteria are sometimes not attained in all four of these segments even in the relatively wet and cool 1997. It should also be noted that the criteria for temperature and dissolved oxygen are based primarily on fish (US EPA 1986a, 1986b) which, as discussed above, do not occur in these segments.

Each of the four segments is unique in the factors influencing temperature and dissolved oxygen. The Pajarito Canyon/Starmers Gulch segment is fed by several springs and currently receives no effluent discharges. It failed to meet coldwater fisheries criteria for temperature and dissolved oxygen only rarely for short periods of time in the Use Study during cool and wet 1997. Preliminary unreleased data collected in August 2003 showed regular exceedences of

coldwater fisheries criteria for temperature. The segment is well shaded with a mature forest that received only minor impacts of the Cerro Grande Fire (UC Exhibit 3, Photo 5) and has been proposed as a reference site for other Laboratory Canyons (Ford-Schmid 1996; UC Exhibit 8). The upper portion of Water Canyon is similar in character to Pajarito/Starmers but is less well studied and was not included in the Use Study. This segment was dry for many years but is now being fed by several springs that have begun flowing again in the last few years. The restoration of flow probably results because, since 1997, a major spring is no longer being diverted for use as boiler water at the Laboratory. The segment was dry in 1996-1997 when data was being collected for the Use Study. The upper watershed of Water Canyon was impacted by the Cerro Grande Fire, which also could have increased current spring flow. The lower portions of this segment are much more open because they were severely burned in the La Mesa Fire in 1977 and again in the Cerro Grande Fire in 2000 (UC Exhibit 3, Photos 11,12). This lower portion could have problems with both temperature and dissolved oxygen but no data are available at this time. The Laboratory has tentatively grouped these segments together and proposes site-specific criteria consisting of the pH range of the coldwater fisheries criteria, along with temperature and dissolved oxygen standards that are slightly modified from the coldwater fisheries criteria to fit known characteristics of the segments.

Data collected in the Use Study demonstrated that Cañon de Valle and Sandia Canyon often failed to meet coldwater fisheries criteria for temperature and dissolved oxygen. In Cañon de Valle, this is primarily due to the limited flow volume (UC Exhibit 3, Photos 8, 9, 10). The limited flow makes the water temperature more subject to variations in ambient air temperature. The resulting higher water temperatures in turn can reduce dissolved oxygen levels. Dissolved oxygen can also decrease in the fall season as dissolved oxygen is used in the decomposition of

leaves dropped from common riparian deciduous trees such as oak, locust, alder and aspen (UC Exhibit 3, Photo 9). Sandia Canyon is a smaller lower-elevation watershed than the other three segments (UC Exhibit 2, Charts 2, 3). The watershed is also highly urbanized, draining the main technical area of the Laboratory (UC Exhibit 2, Map 1). Except immediately after precipitation, 100% of the flow in Sandia Canyon is effluent mainly from the sanitary wastewater plant that is also reused as cooling water at the Laboratory power plant (UC Exhibit 3, Photo 3). Although the causes of the higher temperature and lower dissolved oxygen differ between Cañon de Valle and Sandia Canyon, the range of variation was similar. Since the perennial portion of Sandia Canyon is an effluent-created water, we propose temperature, dissolved oxygen and pH criteria already approved by the Commission for a nearby effluent-created water, the Santa Fe River.

20.6.4.121b RIO GRANDE BASIN – Perennial portions of Los Alamos Canyon upstream from Los Alamos Reservoir and Los Alamos Reservoir.

The Laboratory's proposal is intended to be substantively identical to the Bureau proposal. However, unlike the Bureau, the Laboratory has not proposed a global change in the designated-use terminology from "fishery" to "aquatic life," which is reflected in the use of "coldwater fishery" in subsection A. The deletion of "shall be," "shall not exceed," "no single sample shall exceed," and the addition of "or less" reflects changes made by the Bureau proposal.

This segment is located within lands administered by the US Forest Service. All listed uses are existing uses in accordance with 20.6.4.7.Q NMAC with the possible exception of livestock watering. However, livestock watering is compatible with the mission of the US Forest Service and therefore is retained as a designated use.

20.6.4.121c RIO GRANDE BASIN – Ephemeral and intermittent portions of watercourses within lands managed by US 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 20.6.4.121a. (Surface waters within lands scheduled for transfer from DOE to tribal, state and/or local authorities are specifically excluded.)

The Laboratory proposes designated uses of limited aquatic life (acute criteria), wildlife habitat, and secondary contact. The Bureau proposal adds livestock watering.

This subsection is intended to clarify applicable standards to ephemeral and intermittent waters within Los Alamos National Laboratory. Data from an extensive network of stream-gaging stations (Shaull et al. 1996a, 1996b, 1998, 1999, 2000, 2001, 2002, 2003) indicates these segments are intermittent or ephemeral. Livestock watering is specifically not included because it is not an existing or attainable use as discussed above.

The Laboratory is proposing that acute criteria for aquatic life apply to these segments until site-specific standards can be developed. Acute criteria are the most logical of available criteria since the one-hour averaging period used to determine compliance for acute criteria is measurable during flow events in ephemeral streams. Nevertheless, both US EPA and the Commission have identified problems with standards attainment in ephemeral streams and storm water. For example, the US EPA compares chemical concentrations in storm water running off industrial operations to non-enforceable "benchmarks" rather than to enforceable effluent limitations derived from water quality standards. Recognition of this problem by the Commission is indicated in 20.6.4.12 NMAC, which states "[w]hen changes in dissolved oxygen, temperature, dissolved solids, sediment or turbidity in a water of the state is attributable to natural causes...numerical standards for temperature, dissolved solids content, dissolved oxygen, sediment or turbidity adopted under the Water Quality Act do not apply." However, many naturally occurring contaminants such as selenium and aluminum are physically associated with elevated sediment and turbidity, and standards for these naturally occurring substances

remain applicable in storm water. In other words, the regulations recognize that increases in sediment and turbidity occur naturally in storm water, but they do not recognize that increases in associated substances such as selenium and aluminum also occur naturally. The Laboratory is collecting data on aquatic life and water chemistry in ephemeral and intermittent streams inside and outside of the Laboratory and is planning to propose site-specific modifications of water quality standards in the near future. Because of the limited data available on ephemeral streams, the Laboratory is not recommending at this time the application of acute aquatic life criteria to ephemeral streams outside of the Laboratory.

LABORATORY PROPOSAL: 20.6.4.900 CRITERIA APPLICABLE TO ATTAINABLE OR DESIGNATED USES

20.6.4.900.B, D, G, K, L: Compliance with standards is now detailed in 20.6.4.11 NMAC ("Compliance with Water Quality Standards") as was previously the case for subsections A, C, E, F and H of 20.6.4.900. The Laboratory proposed the phrase "are applicable to this use" for consistency with existing language in subsections A, C, E, F and H. However, if the Commission wishes to make a global change throughout 20.6.4 NMAC, the Bureau proposal of "apply to this use" is preferable for its brevity and use of the active voice.

[New Sections] 20.6.4.900.G2, L2: Secondary contact and Limited Aquatic Life are substantively identical to the Bureau proposals and are proposed because they are referenced elsewhere in the Laboratory proposal.

20.6.4.900.M: The Laboratory proposes adding the phrase "the following criteria are chronic" to clarify the nature of the criteria in 20.6.4.900.M and reduce the possibility that the criteria may be misapplied.

STATE OF NEW MEXICO

WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS, 20.6.4 NMAC **WQCC 03-05 (R)**

AFFIDAVIT OF FREDERICK M. FISHER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Frederick M. Fisher, being first duly sworn, depose and state that I am the individual whose prepared Direct Testimony accompanies this Affidavit, and that said Direct Testimony is true and correct to the best of my knowledge and belief.

Date: October 31, 2003

Frederick M. Fisher

Frederick M. Fisher

SUBSCRIBED AND SWORN TO before me this 31st day of October 2003.

Notary Public

My Commission Expires: 11/22/03.

Exhibit 24

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

DEC 29 2006

RECEIVED
JAN 10 2007
SURFACE WATER
QUALITY BUREAU

RECEIVED
JAN 10 2007
NM ENVIRONMENT DEPARTMENT
OFFICE OF THE SECRETARY

Mr. Ron Curry
Chairman
Water Quality Control Commission
Harold Runnels Building
1190 Saint Francis Drive
Santa Fe, NM 87502

Subject: EPA Approval of Revisions to New Mexico's Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC

Dear Mr. Curry:

I am pleased to inform you that we have completed our review of the State's triennial revisions. As always, I thank you for the efforts of the New Mexico Water Quality Control Commission and particularly the New Mexico Environment Department in the development of these revisions.

The new and revised water quality standards include a number of important amendments. These include the development of standards for non-classified ephemeral, intermittent and perennial waters; revisions to the State's bacteriological criteria, specifying *E. coli* as the indicator organism consistent with the Environmental Protection Agency's (EPA) recommendation; revision of rules for the applicability of criteria to prevent inappropriate attainment decisions; revisions to use attainability analyses procedures; and revised classified segments. The Commission and the Environment Department should be commended for making these important revisions to New Mexico's water quality standards.

EPA's review was of amendments to the *Standards for Interstate and Intrastate Surface Waters* 20.6.4. NMAC. These revisions where adopted by the Commission and became effective as State law on May 23, 2005, with revisions effective on July 17, 2005. The amendments were certified by the Assistant Attorney General by letter dated July 1, 2005, and were submitted to EPA as required under federal regulations at 40 CFR 131.20(c). EPA received the documents on July 7, 2005.

In today's action, EPA is approving the majority of these amendments. However, based on a review of the record, EPA was unable to take action on a few provisions because they did not meet the minimum requirements for a water quality standards submission. See 40 CFR 131.6(b) and (f). Specifically, EPA was unable to take action on the limited aquatic life, aquatic life and/or secondary contact recreation use designations for Sections 20.6.4.97, 20.6.4.98 and

SALADEN TESTIMONY
EXHIBIT 5

20.6.4.99. EPA strongly supports the concept the State has used in developing standards for unclassified ephemeral, intermittent and perennial surface waters; however, adequate supporting documentation (such as a use attainability analysis) was not available which would allow us to take action on all portions of these provisions. Similarly, EPA was unable to take action on the new and/or revised use designations and modifications for six classified segments because adequate supporting documentation (such as a use attainability analysis) was not available to support the modifications. See segments 20.6.4.126, 128, 221, 310, 701 and 702.

The enclosed detailed Record of Decision explains EPA's basis for the approval action taken and provides an explanation of the type of documentation that is necessary for EPA to be able to approve the remaining provisions. We would be glad to work with you and provide technical assistance regarding the needed supporting documentation.

It is important to note that EPA's approval of the State's water quality standards is considered a federal action which may be subject to the Section 7(a)(2) consultation requirements of the Endangered Species Act (ESA).[1] Section 7(a)(2) of the ESA states that "each federal agency ... shall ... insure that any action authorized, funded or carried out by such agency 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 to be critical..."

EPA's approval of the water quality standards revisions, therefore, may be subject to the results of consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the ESA. Nevertheless, EPA also has a Clean Water Act obligation, as a separate matter, to complete its water quality standards action. Therefore, in approving New Mexico's water quality standards revisions today, EPA is completing its CWA Section 303(c) responsibilities. However, should the consultation process with the U.S. Fish and Wildlife Service identify information that supports a conclusion that one or more of these revisions is likely to jeopardize the continued existence of any endangered or threatened species, EPA will revisit and amend its approval decision for those revised or new water quality standards.

Pursuant to the *Memorandum of Agreement Between the Environmental Protection Agency, Fish and Wildlife Service and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act* (66FR11202, February 22, 2001), EPA Headquarters and the Services have initiated a national consultation on all of EPA's published water quality criteria for the protection of aquatic organisms. As explained in the MOA, the national consultation provides Endangered Species Act Section 7 consultation coverage for any water quality criteria included in State water quality standards, approved by EPA, that are identical to or more stringent than EPA's recommended CWA Section 304(a) criteria. EPA Region 6, therefore, will defer to the national consultation on questions of

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[1] Where EPA concludes that its approval action will have "no effect" on listed endangered or threatened species, or is otherwise not subject to ESA consultation, EPA can issue an unconditional approval.

protectiveness for aquatic life criteria. In the unlikely event that the national consultation discovers EPA's published CWA Section 304(a) criteria (and by extension, the State standards) are likely to cause jeopardy to listed species or the adverse modification or destruction of designated critical habitat, EPA has retained its authority to revise its approval decision.

As mentioned earlier, I appreciate both the Commission's and the Environment Department's efforts in the development of these important revisions to New Mexico's water quality standards, and commend the Commission for its action. I also appreciate the cooperative and constructive way in which the Environment Department staff has worked with my staff as it developed its proposal for this triennial review of the State's water quality standards.

If you need additional detail and if you would like to schedule a meeting to work through the issues outlined in this letter, please call me at (214) 665-7101, or have the Environment Department staff contact Russell Nelson, my Regional Water Quality Standards Coordinator, at (214) 665-6646.

Sincerely,

Miguel I. Flores, Director
Water Quality Protection Division

Enclosure

cc: Denise Keehner, Director, SHPD
Amy Newman, Chief, RSTSSB
Lee Schroer, Office of General Counsel

Marcy Leavitt, Chief,
Surface Water Quality Bureau
New Mexico Environment Dept.

Lynn Wellman
Regional Water Quality Coordinator
USFWS
Box 1306
Albuquerque, NM 87103

Brian Hanson
Acting Field Supervisor
Ecological Services Office
USFWS
2105 Osuna Road NE
Albuquerque, NM 87113-1001

RECORD OF DECISION
FOR
EPA REVIEW OF

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 4 STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

The revisions to the New Mexico standards are extensive, ranging from simple punctuation, adding terms for clarity to update definitions and phrasing, to more substantive changes such as establishing new provisions, physically relocating and merging others and establishing narrative and numeric criteria. Repetitive and/or non-substantive changes may not be addressed in detail after initial discussion. As seen here, EPA's discussion and action will be italicized to differentiate it from the State's provisions.

20.6.4.6 Objective:
B.

Paragraph B discusses modified to read ...water contaminants resulting from these activities will not be permitted to lower the quality of surface waters of the state below that [~~which is~~] required for [~~recreation and maintenance of a fishery and protection of wildlife~~] protection and propagation of fish, shellfish and wildlife and recreation in and on the water. The change maintains the State's prohibition on lowering water quality and provides greater consistency with Clean Water Act (CWA) Section 101(a)(2) goals.

This change reflects the goals established in Section 101(a)(2) of the Clean Water Act.

***Action:** EPA approves the modifications to this section.*

20.6.4.7 Definitions:

Changes range from new and modified definitions as well as a substantial re-lettering, retaining alphabetical order. Re-lettering is not considered a significant modification.

B. "Adjusted gross alpha" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample, including radium-226, but excluding radon-222 and uranium. Also excluded are source, special nuclear and by-product material as defined by the Atomic Energy Act of 1954.

This new definition of "adjusted" gross alpha is intended to reflect that it is does not include all alpha emissions. The word "adjusted" has also been added to those places in the standards where the term appears.

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, 05-23-05]

This new segment for the perennial reaches of San Pedro Creek was broken out of Rio Grande Section 20.6.4.111, which previously contained the perennial reaches of both Las Huertas and San Pedro Creeks. As seen in that discussion, Las Huertas Creek has been shown to be capable of supporting a high quality coldwater aquatic life designation. The Commission indicates in its SoR (paragraph 217), that no evidence was presented to indicate that San Pedro Creek is capable of supporting that high quality coldwater use. Since this segment simply breaks San Pedro Creek out from segment 111, retaining its coldwater aquatic life and secondary contact uses and associated criteria, no supporting documentation is necessary.

Action: *EPA approves this new Section.*

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, 05-23-05]

This new segment was established to classify perennial waters within or near Los Alamos National Labs (LANL) property. The State based use designations for these segments on an intensive study by US Fish and Wildlife Service (Lusk and MacRae 2002). The US Fish and Wildlife Service's (Service) study demonstrated the presence of shellfish, which is indicative of a coldwater aquatic community although fish are not present in these segments. The Service's

study documented existing macroinvertebrate communities in all of the streams in this segment with the exception of Water Canyon. The study also indicated that these macroinvertebrate communities generally compare favorably to the coldwater aquatic community in the upper reaches of Los Alamos Canyon, further supporting the coldwater designation.

Although a waterbody may not support a reproducing fishery, it does not mean that it may not be supporting an aquatic life protection function. EPA agrees that an existing cold water aquatic community composed of invertebrates like that found in this stream should be protected whether or not the stream supports a fishery. The coldwater aquatic life designation is consistent with the 101(a)(2) interim goal of the Act, providing for protection of aquatic life uses. See 40 CFR 131.10(k). The State also established default uses of livestock watering and wildlife habitat. The use designations for these segments are consistent with the use in adjacent tributaries of the Rio Grande in Bandelier National Monument.

The basis for designating a secondary contact recreation use is unclear given that the Service's study indicates that there is evidence of pools of sufficient size for primary contact in the Sandia canyon stream. As discussed previously, EPA's current water quality regulation effectively establishes a rebuttable presumption that "fishable/swimmable" uses are attainable unless it can be demonstrated that such uses are not attainable. A secondary contact use does not meet that presumption.

Based on a review of the 2005 Triennial Submission record supplied by the State, the secondary contact use is not adequately supported. 40 CFR 131.6(b) and (f) requires the submission of supporting analyses and other general information that will assist EPA in determining the adequacy of standards that don't include uses specified in Sec. 101(a)(2) of the Act. To comply with the regulation, New Mexico must submit a UAA to demonstrate why attaining the secondary contact recreation uses are not feasible based on one of the factors listed in 40 CFR 131.10(g). The most logical factor is 40 CFR 131.10(g)(2) - natural, ephemeral, intermittent, or low-flow conditions or water levels prevent attainment of the use. Although the Service's intensive study is not a UAA in itself, the State could draw on information in that and other related intensive studies or information to support the secondary contact recreation use designation.

***Action:** EPA takes no action on this Section.*

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, 05-23-05]

As with the previous segment, this new segment was also established to classify perennial waters within or near LANL property. The use designations for this segment were also based on the Service's study of these waters. (Lusk and MacRae 2002). The reaches in this segment have been designated for coldwater aquatic life and primary contact recreation uses. The historical livestock watering and that wildlife habitat have been designated for this segment. The coldwater aquatic life designation and primary contact designations are consistent with the 101(a)(2) interim goals of the Act.

Action: *EPA approves this new Section.*

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:

(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 Subsection K of 20.6.4.900 NMAC (salmonids absent) are applicable to this use.

[20.6.4.128 NMAC - N, 05-23-05]

As with the two previous Sections, New Mexico has established this segment, classifying waters within LANL property. The State based use designations for this segment on the same intensive study by the Service (Lusk and MacRae 2002) mentioned in the previous sections. This segment has been designated for limited aquatic life and secondary contact based on likelihood of exposure by ingestion and a light frequency of use, as well as the State's default livestock watering and wildlife habitat uses that have been applied.

The limited aquatic life and secondary contact uses may be the highest uses that can be attained in this segment. However, as discussed in Section 20.6.4.126, such designations are not compatible with the uses specified in section 101(a)(2) of the Act and must be supported by a UAA based on one of the factors listed in 40 CFR 131.10(g). Again, the most logical factor is 131.10(g)(2) - natural, ephemeral, intermittent, or low-flow conditions or water levels prevent attainment of the use. The supporting UAA for waters in this segment and Section 20.6.4.126 may be combined.

***Action:** EPA takes no action on this Section.*

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, 05-23-05]

The State has established a new segment for the Rio Hondo in the Rio Grande Basin, breaking this tributary out of Section 20.6.4.123. The total phosphorus 0.1 mg/L total phosphorus criterion that was re-established for segment 123 is being carried over to this new segment. The coldwater aquatic life designation and secondary contact designations are also being carried over from the original segment designation.

The secondary contact designation is supported by revised bacteriological criteria sufficient to support primary contact recreation based on a light frequency of use. EPA recognizes that primary contact recreation may not be attainable or appropriate in all waters and that States may designate secondary contact recreation, but set bacteriological criteria sufficient to support primary contact based on frequency of use as New Mexico has done here.

***Action:** EPA approves this new Section.*

20.6.4.130 - 20.6.4.200: [RESERVED]

No response is required for this reserved section.

Exhibit 25

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS, 20.6.4 NMAC **WQCC No. 14-05(R)**

REBUTTAL TESTIMONY OF MICHAEL T. SALADEN LOS ALAMOS NATIONAL SECURITY, LLC.

LARA KATZ
LOUIS W. ROSE
Montgomery & Andrews, P.A.
P.O. Box 2307
Santa Fe, NM 87504-2307
(505) 982-3873

TIMOTHY A. DOLAN
Office of Laboratory Counsel
Los Alamos National Laboratory
P.O. Box 1663, MS A187
Los Alamos, NM 87545
(505) 667-7512

Attorneys for Los Alamos National Security, LLC

LISA CUMMINGS
U.S. Department of Energy
Office of Counsel
Los Alamos Site Office
528 35th Street
Los Alamos, NM 87544-2201
(505) 667-4667

Attorney for the U. S. Department of Energy

I. INTRODUCTION

I have prepared the following rebuttal testimony in response to the direct testimony of Rachel Conn and Jon Klingel, submitted on behalf of Amigos Bravos. *See* Amigos Bravos' Notice of Intent to Submit Technical Testimony ("Amigos Bravos NOI") (filed Dec. 12, 2014); Witness Statement of Rachel Conn Submitted on Behalf of Amigos Bravos ("Conn Direct"); Witness Statement of Jon Klingel Submitted on Behalf of Amigos Bravos ("Klingel Direct"). Amigos Bravos proposes to change the designated aquatic life use for Stream Segment 20.6.4.128 ("Segment 128") from "limited aquatic life" to "marginal warmwater aquatic life."

In support of this change, Amigos Bravos' witnesses assert three central points: (1) intermittent waters on Los Alamos National Laboratory ("LANL") property are given weaker protections than other intermittent waters in New Mexico; (2) the uses for Segment 128 have not been reassessed for more than 10 years, and are therefore past due for reassessment under 40 C.F.R. § 131.20(a); and (3) the Use Attainability Analysis supporting the current designated aquatic life use for Segment 128 was inadequate. As explained in my Direct Testimony, filed on December 12, 2014, the current designated aquatic life use for Segment 128 was adopted by the New Mexico Water Quality Control Commission ("WQCC") in the 2004 Triennial Review of Surface Water Quality Standards, and was approved by the United States Environmental Protection Agency ("EPA") in 2007 based on a Use Attainability Analysis (the "2007 UAA") prepared by the New Mexico Environment Department ("NMED") with technical assistance by EPA. The WQCC rejected a challenge by Amigos Bravos to the current designated aquatic life use during the 2009 Triennial Review based on similar arguments raised here, finding that the current designated use for Segment 128 was appropriate, and no change was warranted.

In its testimony in the current proceeding, Amigos Bravos has not put forth any new information or data indicating that a change to the existing designated aquatic life use for Segment 128 is appropriate.

II. RESPONSE TO RACHEL CONN

A. Intermittent Waters on LANL Property are Provided Adequate Protections

In her direct testimony, Ms. Conn asserts that the current designated aquatic life use for Segment 128 is inappropriate because the presence of invertebrates in this segment indicates the presence of Clean Water Act 101(a)(2) uses requiring protections under a "marginal warmwater aquatic life" designation for intermittent waters. Conn Direct at 4. She thus suggests that the presence of invertebrates automatically requires classification of Segment 128 as an intermittent, as opposed to an ephemeral, water, for which a marginal warmwater aquatic life designation is required. On this basis, Ms. Conn also criticizes the lack of a distinction between intermittent and ephemeral waters in the 2007 UAA.

Ms. Conn made this same argument in the 2009 Triennial Review. *See* Witness Statement for Rachel Conn, at 4-5 (August 27, 2009), attached hereto as Rebuttal Exhibit A, (arguing it is improper to apply the "limited aquatic life use to both ephemeral and intermittent waters" in Segment 128). However, as was the case in the previous Triennial, the WQCC's own regulations provide that a limited aquatic life designated use is appropriate for both ephemeral ***and*** intermittent waters. Specifically, 20.6.4.7(L)(2) NMAC states:

> 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 life 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.

Emphasis added. Thus, the classification of a stream segment as intermittent or ephemeral is not in itself determinative of whether a limited aquatic life designation is appropriate. Ms. Conn does

not, and cannot, contend that the limited aquatic life designation may not be applied to intermittent waters. Nor does she offer any reasons, data, or explanation as to why limited aquatic life is not an appropriate designation for Segment 128, beyond simply restating the long-acknowledged fact that there exists some macroinvertebrate life in that segment, which has already been considered by the WQCC. WQCC Order and Statement of Reasons for Amendment of Standards, October 14, 2010, at 81, ¶ 371 ("Amigos Bravos relies on information [regarding aquatic invertebrates] that the Commission already considered in assigning the limited aquatic life use.").

With regard to Ms. Conn's suggestion that the presence of invertebrates indicates the presence of Clean Water Act 101(a)(2) uses requiring protections under a "marginal warmwater aquatic life" designation, such protections are not required when, as here, a UAA demonstrates that attaining that designation is not feasible. A UAA is a scientific study conducted to examine the factors affecting the attainment of a use. The CWA and WQCC regulations allow a UAA to be conducted in order to evaluate and assign the appropriate use for any stream segment, including ephemeral and intermittent streams, if appropriately justified. *See* 40 C.F.R. § 131.10(g); NMAC 20.6.4.15(A)(1). As discussed below in response to Jon Klingel's direct testimony, the 2007 UAA was properly prepared and approved, and is sufficient to support the current designated aquatic life use for Segment 128.

B. LANL Waters are Assessed on a Continuous Basis

Ms. Conn points to 40 C.F.R. § 131.20(a), which requires that water body segments that do not meet CWA § 102(a)(2) uses must be reexamined every three years, and then suggests that this regulation has not been followed because "it has been more than 10 years since the waters subject to 20.6.4.128 NMAC have been afforded 101(a)(2) protections." Conn Direct at 3. As

an active participant in all matters relating to LANL waters, Amigos Bravos is well aware that Ms. Conn's suggestion that Segment 128 has not been reexamined in over 10 years is incorrect.

All stream segments at LANL are assessed on an essentially continuous basis through a combination of an extensive gage network that is monitored ***daily***, and field teams that routinely walk canyons and observe stream conditions. Moreover, Segment 128 and its designated uses have been addressed in every Triennial since that segment was adopted. Indeed, Amigos Bravos has submitted substantively identical petitions regarding Segment 128 in 2004, 2009, and in this Triennial. Additionally, each assessment unit within Segment 128 is addressed every two years in NMED's CWA Section 303/305 Integrated Report, available at *http://www.nmenv.state.nm.us/swqb/303d-305b/*. A map depicting assessment units on LANL property is attached hereto as Rebuttal Exhibit B.

In 2014, LANL field teams photographed gaging station sites, evaluated whether there was water in the channel, looked for evidence of base flows, identified if benthic macroinvertebrates were present, and evaluated vegetative cover. Based on information gathered during these field visits, it was determined that, of the 73 miles of Segment 128, approximately 71 miles are ephemeral and approximately two miles are intermittent (97% ephemeral and 3% intermittent).

Segment 128 has been evaluated in line with, and indeed beyond, the requirements of 40 C.F.R. § 131.20(a). All LANL monitoring information, Triennial documents, and reports are publicly available. None of this information reveals any changes or concerns warranting a different designated aquatic life use for Segment 128.

III. RESPONSE TO JOHN KLINGEL

A. LANL Agrees that Intermittent and Ephemeral Streams are Important and Need to be Protected

Mr. Klingel's testimony contains a lengthy discussion of the importance of ephemeral and intermittent stream drainages in providing increased primary productivity (food and cover); increased plant diversity (increased wildlife diversity); increased plant density (food and cover); recharge of ground water (wells and springs); and periodic surface water for wildlife drinking and reproduction. Klingel Direct at 2-6. LANL agrees that ephemeral and intermittent streams are important and need to be protected. LANL maintains that the current designated aquatic life use for Segment 128, as supported by the 2007 UAA, as well as LANL's and NMED's continued monitoring and evaluation activities, is appropriate and protective of aquatic life in that segment.

B. The Current Classification of Segment 128 is Appropriate

Mr. Klingel points to what he views as five "serious problems" with the designation of Segment 128: (1) Segment 128 does not define the location of perennial waters; (2) there is little documentation of biotic communities found in intermittent streams; (3) the limited aquatic life designated use does not contain chronic criteria; (4) shell fish have been reported as existing in Pajarito, Water, Los Alamos and Valle Canyons; and (5) the presence of people bathing and drinking downstream suggests that "secondary contact" is not appropriate. Klingel Direct at 6-7.

Mr. Klingel is correct in that Segment 128 does not provide locations of perennial waters on LANL property; however, those locations are expressly defined in Segment 126, which identifies specific geographic landmarks of all perennial LANL segments. *See* 20.6.4.126 NMAC

As to documentation of biotic communities in intermittent streams, numerous benthic studies were conducted by NMED, the United States Fish and Wildlife Service and LANL. These studies are referenced in the 2002 Use Study prepared by the U.S. Fish and Wildlife Service ("2002 Use Study"), *see* Saladen Direct at 3, and testimony from previous Triennial Reviews.

Mr. Klingel correctly notes that the limited aquatic life use does not contain chronic criteria. This is, presumably, because the WQCC recognizes that chronic criteria are not appropriate for the type of waters with the limited aquatic use. Indeed, during the last Triennial Review, the WQCC considered the question whether the water quality criteria associated with the limited aquatic life use were sufficiently protective, given that EPA does not consider that designation a CWA Section 101(a)(2) use. The Commission confirmed the appropriateness of the criteria when it adopted the definition in the 2004 Triennial Review and affirmed that conclusion when it rejected Amigos Bravos' attempt to strike the limited aquatic life use in 2009. WQCC Statement of Reasons for Amendment of Standards, May 13, 2005; WQCC Order and Statement of Reasons for Amendment of Standards, October 14, 2010, at 81, ¶ 370. ("[t]he Commission does not adopt Amigos Bravos' proposal to replace limited aquatic life with aquatic life use because this [Segment 128] was created and designated uses were assigned in the last triennial review; Amigos Bravos presented no evidence regarding current water quality conditions that would support a change in the standards.").

The shellfish discussed by Mr. Klingel are located in Segment 126 waters, and are afforded appropriate protections. Mr. Klingel provides no support for his speculation that these shellfish "possibly" occur in some ephemeral streams on DOE lands. *See supra* at 4 (97% of Segment 128 is ephemeral). Nor, in my opinion, does Mr. Klingel's speculation satisfy the requirement in § 74-6-4.D that water quality standards be "based on credible scientific data and other evidence appropriate under the Water Quality Act."

Finally, both the 2002 Use Study and the 2007 UAA concluded that recreational use/primary contact is highly unlikely and, because of the flash-flood nature of any flow, would be unreasonably hazardous. Moreover, the particular sections where Mr. Klingel speculates that

people bathe and otherwise have primary contact (i.e. Pajarito springs drainage) are located in Segment 20.6.4.98. *See* Klingel Direct at 6.

C. The 2007 UAA Was Properly Prepared and Approved

As set forth in LANL's direct testimony, the 2007 UAA was prepared by NMED and approved by EPA. Amigos Bravos does not contend otherwise. Instead, Mr. Klingel argues that 2007 UAA is flawed in a number of respects. Mr. Klingel's arguments regarding the problems with the 2007 UAA either were, or should have been, made when the UAA was prepared by NMED and adopted by EPA in 2007. Regardless, Amigos Bravos does not point to any significant changes with respect to Segment 128 that would warrant any further action or change in designated uses.

IV. CONCLUSION

In my opinion, the current designated aquatic life use for Segment 128 is appropriate, and Amigos Bravos has not put forth anything in their direct testimony that would indicate a change is warranted to that use.

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS, 20.6.4 NMAC **WQCC No. 14-05(R)**

AFFIDAVIT OF MICHAEL T. SALADEN

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Michael T. Saladen, being first duly sworn, depose and state that I am the individual whose prepared Rebuttal Testimony accompanies this Affidavit, and that said Rebuttal Testimony is true and correct to the best of my knowledge and belief.

Michael T. Saladen

SUBSCRIBED AND SWORN TO before me this 12th day of February 2015.

Notary Public

My Commission Expires: May 31, 2017

RITA CORDOVA NOTARY PUBLIC STATE OF NEW MEXICO

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE TRIENNIAL REVIEW OF STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS, 20.6.4 NMAC	)	WQCC No.08-13 (R)

WITNESS STATEMENT FOR RACHEL CONN

Submitted on Behalf of Amigos Bravos
August 27, 2009

Estimated Time for Direct Testimony: 35 minutes

Please Note: *Proposed materials to be deleted are indicated by **bold strikethrough (red in color copies)** and proposed new language is indicated by **bold underlining (blue in color copies)**. NMED's proposed changes are included here as non-bolded (and non-colored) underlined and strikethrough text.*

Rachel Conn is the Clean Water Circuit Rider for Amigos Bravos, a non-profit river conservation organization dedicated to protecting the ecological and cultural richness of the Rio Grande and other wild rivers in New Mexico. Ms. Conn has a BA in Environmental Biology from Colorado College. She has worked for the past 11 years in the environmental field. She worked for the Massachusetts Department of Environmental Protection as a consultant assessing the data management needs of the various bureaus in the department. Ms. Conn also worked for a non-profit in Colorado assessing and addressing water quality problems associated with gold mining. For the past seven years she has worked for Amigos Bravos on water quality issues. She is a Clean Water Act trainer and in this capacity gives trainings around the state on water quality standards, TMDLs, and other Clean Water Act topics. As Clean Water Circuit Rider for Amigos Bravos Ms. Conn helps New Mexico communities learn about and then use the Clean Water Act to clean up their rivers.[1]

1. COMPLIANCE WITH WATER QUALITY STANDARDS

Currently section 20.6.4.12 states, "The following provisions apply to determining compliance for enforcement purposes; they do not apply for purposes of determining attainment of uses." Because this section is entitled "Compliance With Water Quality Standards" it is assumed that

[1] A resume is attached to this testimony.

SALADEN REBUTTAL
EXHIBIT A

the enforcement purposes are related to enforcing water quality standards. Compliance with water quality standards is inextricably linked to attainment of uses. In fact, water quality standards are designated uses. As an experienced Clean Water Act trainer, I have given many trainings on the components of water quality standards. These components include designated uses, criteria and antidegradation. These are the basic requirements, as set out by the Clean Water Act, for setting water quality standards. Amigos Bravos urges the Commission to revise this section to accurately reflect the relationship between complying with water quality standards and the attainment of use.

Amigos Bravos' proposal:

20.6.4.12 - Compliance with Water Quality Standards

> 20.6.4.12 COMPLIANCE WITH WATER QUALITY STANDARDS: The following provisions apply to determining compliance **with 20.6.4 NMAC.** ~~for enforcement purposes; they do not apply for purposes of determining attainment of uses. The department has developed assessment protocols for the purpose of determining attainment of uses that are available for review from the department's surface water quality bureau.~~

2. FLOW CRITERIA

In many stretches of river in New Mexico, the applicable criteria are not adequately protecting the designated uses because of lack of flow. To ensure that New Mexico's standards are ensuring that state's criteria protect the state's designated uses (a required component of water quality standards) it is recommended that the state consider including a general criterion for flow in the standards to meet designated uses. Implementation of this general criterion will take some work and guidelines will need to be developed to identify the appropriate adequate flow for each use. For example, to meet the designated use of irrigation, water only needs to be flowing during irrigation season and to meet the wildlife habitat use, flow may not be necessary year round as long as there are pools remaining to provide drinking water to wildlife. EPA regulations require that states set criteria that are "necessary to protect the uses". 40 C.F.R. § 131.2. Seasonal flow is essential to attain the use of irrigation and thus flow is "necessary to protect the uses." Many other states have implemented flow criteria to protect the designated uses of their waters. For example, both the states of Washington and Minnesota have adopted flow criteria.

Amigos Bravos' proposal:

20.6.4.13.N – Flow

N. Flow: If waters of the state are not attaining designated uses due to lack of adequate flow they shall be considered impaired and appropriate planning documents and steps shall be taken.

3. PRIMARY CONTACT

The policy of having secondary contact listed as a designated use and then have site-specific primary contact standards should be stopped. Waters that have primary contact as an existing use should also have it as a listed designated use. The former policy causes undue confusion to the public, and I would assume to the regulators and policy makers as well. This practice makes it especially difficult to review the 303(d) list because there is no indication what is meant when a segment says that secondary contact is "fully supported". There is no way for the public to know if the primary contact criterion is being supported. This has come up time and time again in the trainings and work I have done across the state. Numerous people have come to me saying that they are concerned because their river is not protected for swimming and their family, kids, or neighbors are immersing themselves in the water. Upon closer inspection many of these rivers are indeed protected for primary contact but people are confused because it states secondary contact under the designated uses. In implementing the policy of having waters that are protected by primary contact criteria have a designated use of primary contact, care must be taken to ensure that if there is segment specific criteria that applied previously that was more protective than the criteria that are associated with primary contact, those more protective criteria continue to apply. For example, 20.6.4.115 currently has a designated use of secondary contact but has segment specific criteria for E.coli (monthly geometric mean of 126cfu/100mL or less; single sample 235cfu/100mL or less) that is more protective than the criteria associated with the primary contact use (monthly geometric mean of 120cfu/100mL or less; single sample 410 cfu/100mL). Downgrading of criteria can only occur if a UAA is performed. Care must be taken to ensure that section 20.6.4.115 and any other segment that has more protective criteria than those associated with primary contact maintain the more protective segment specific criteria.

Amigos Bravos' proposal:

> 20.6.4.115 RIO GRANDE BASIN - The perennial reaches of Rio Vallecitos and its tributaries, 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 [~~secondary~~] primary contact; public water supply on the Rio Vallecitos and El Rito creek.
> B. Criteria:
> [~~(1) In any single sample: specific conductance 300 µmhos/cm or less, 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~~], except that the following segments specific ~~criterion~~ criteria ~~applies~~ apply: specific conductance 300 µS/cm or less; the monthly geometric mean of E.coli 126 cfu/100mL or less; single sample of 235 cfu/100mL or less
> [~~(2) The monthly geometric mean of E. coli 126 cfu/100 mL or less; single sample 235 cfu/100 mL or less (See Subsection B of 20.6.4.14NMAC.)~~]

4. CONTACT STANDARDS FOR PERENNIAL / INTERMITTENT WATERS

One of the key aspects of the Clean Water Act (CWA) that I always include in my trainings is the Clean Water Act requirement to provide fishable and swimmable waters. This requirement has been clearly expressed by EPA in their comments on New Mexico's water quality standards. As stated by EPA, a use attainability analysis is required before a downgrading of uses from these baseline standards is permitted.

5. KLAUER SPRING

As Clean Water Circuit Rider for Amigos Bravos I have been approached by concerned citizens about the lack of appropriate standards for Klauer Spring, a small spring located about 20 yards from the banks of the Rio Grande near the Taos Junction Bridge. This spring is used by many Taos County residents as their drinking and domestic water supply (see photos attached as Exhibit 1). Clean Water Act regulations require that existing uses be protected (40 CFR131.10(h) and 40 CFR131.12(a)(1)). Because domestic water supply is an existing use as demonstrated by the photos, it should be included as a designated use.

Amigos Bravos' proposal:

20.6.4.114- Klauer Spring

> 20.6.4.114 RIO GRANDE BASIN - The main stem of the Rio Grande from the ~~[headwaters of]~~ Cochiti ~~[reservoir]~~ pueblo boundary upstream to Rio Pueblo de Taos, Embudo creek from its mouth on the Rio Grande upstream to the ~~[junction of the Rio Pueblo and the Rio Santa Barbara]~~ Picuris Pueblo boundary, the Santa Cruz river ~~[below]~~ from the Santa Clara pueblo boundary upstream to the Santa Cruz dam, the Rio Tesuque ~~[below the Santa Fe national forest]~~ except waters on the Tesuque and Pojoaque pueblos, ~~and the~~ Pojoaque river ~~[below Nambe dam]~~ from the San Ildefonso pueblo boundary upstream to the Pojoaque pueblo boundary, and Klauer Spring.
> A. Designated Uses: irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, primary contact and warmwater aquatic life; domestic water supply on Klauer Spring and public water supply on the main stem Rio Grande.

6. LOS ALAMOS INTERMITTENT AND EPHEMERAL WATERS

All intermittent waters on LANL property are given weaker protections (those associated with the limited aquatic life use) than all other intermittent waters in the state (which receive the aquatic life use). If EPA had issues with applying limited aquatic life to ephemeral waters in section 20.6.4.97, than they certainly would have a problem with applying the limited aquatic life use to both ephemeral and intermittent waters as is done in section 20.6.4.128. The standards

should be consistently applied unless a UAA has been conducted for a specific segment. If a UAA analysis is conducted that shows that the aquatic life use is not attainable in some ephemeral waters under this segment then a separate segment should be created for those waters. At this point, without an UAA for segment 20.6.4.128, to ensure that all waters are given "fishable/swimmable" protections, an "aquatic life" (rather than a "limited aquatic life" use) is necessary for all waters in 20.6.4.128. There is data that indicates that both intermittent and ephemeral streams on LANL property deserve protection of both the chronic and acute criteria. The US Fish and Wildlife provided testimony in the 2004 Triennial Review that showed many species of aquatic life thrived in these stretches. (Testimony attached as Exhibit 2). In addition, a 2002 study conducted by USFW and USGS found that "[b]ased on location, measure of air and water temperatures, and the presence of coldwater indicator species of aquatic life, these intermittent streams were considered coldwater in nature." (Study attached at Exhibit 3) The four intermittent streams on LANL property that were studied included Los Alamos Canyon, Sandia Canyon, Pajarito Canyon and Valle Canyon.

Amigos Bravos' proposal:

<u>20.6.4.128 - Los Alamos Intermittent and Ephemeral Waters</u>

> 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.

7. COOLWATER CRITERIA

The current water quality standards allow for five categories of temperature criteria: high quality coldwater, coldwater, marginal coldwater, warmwater, and marginal warmwater. Adding more categories brings up that waters will be placed into whatever category it presently fits rather than classifying for the appropriate designated use, i.e. its historical or appropriate use, and then working toward achieving that condition. In particular, as climate change causes New Mexico's waters to become more limited, and thus more susceptible to temperature change, there is a risk that the addition of another category will enable the categorizing what are appropriately coldwater streams as coolwater.

8. LIMITED AQUATIC LIFE

The designated use of "limited aquatic life," set forth at 20.6.4.900(H)(7), is ambiguous and confusing. The standards would be clearer and more in line with the goals of the Clean Water Act if there was a return to the pre-2005 policy of setting segment specific uses in the rare case where the other aquatic life uses are not attainable. For instance, in the case of Sulphur Creek, Section 20.6.4.124 it would be simple to say under paragraph B(3) that, "except for subsections I and J of 20.6.4.900, the chronic aquatic life criteria do not apply." The limited aquatic life use adds one more layer of confusion to the standards requiring members of the public to flip back and forth between the segment and the back of the standards. In addition, the limited aquatic life use could be abused to lower water quality standards. It is more appropriate to make segment specific changes in cases where the natural conditions have resulted in an impairment associated with either the chronic or acute aquatic life criteria. This method would allow for more fine tuned standards. For example, in some cases it may be that none of the chronic life criteria are attainable, and therefore all the criteria could be listed as not applying, but, in some other cases, it may be that only a couple of the chronic life criteria do not apply and in those cases these constituents could be listed individually. Returning to the pre-2005 policy also ensures that water quality standards are applied equitably and that standards are modified only when natural conditions necessitate such changes. Getting rid of the limited aquatic life use would not require a large overhaul to the standards as presently only three segments have the limited aquatic life designated use.

EPA's disapproval of the use of the limited aquatic life use for ephemeral waters is consistent with this point. EPA noted that "this limited use does not 'serve the purposes of the [CWA], as defined in CWA sections 101(a)(2) and 303(c)." *See* Discussion Draft, § 20.6.4.97 NMAC, Basis for Change. Although NMED has addressed this concern in part by requiring that ephemeral waters shall be classified as such by a hydrology protocol, it did not address the concern that such waters automatically include a limited aquatic life use, when they may qualify for a more protective standard. Organisms in ephemeral waters are often especially sensitive to changes, and thus ensuring that chronic life criteria are applied can be crucial to the survival of those species. As such, a separate limited aquatic life designation is inappropriate. At most, the criteria specified in the limited aquatic life designation should be applied on a segment-specific basis.

Amigos Bravos' proposal:

<u>20.6.4.900(H)(7) - Limited Aquatic Life Use</u>

~~[(6)](7) Limited Aquatic Life: [Criteria shall be developed on a segment-specific basis.] The acute aquatic life criteria of Subsections I and J of this section [shall] apply to this subcategory. Chronic aquatic life criteria do not apply unless adopted on a segment-specific basis. Human health-organism only criteria apply only for persistent pollutants unless adopted on a segment-specific basis.~~

9. HARDNESS TABLE FOR ACUTE AND CHRONIC CRITERIA FOR METALS

The Department's proposal of a hardness table for acute and chronic criteria for metals (20.6.4.900.I) will greatly increase the public's ability to understand the standards. This addition will also help me, as a Clean Water Act Trainer, to help people understand the standards.

10. DOMESTIC WATER SUPPLY CRITERIA

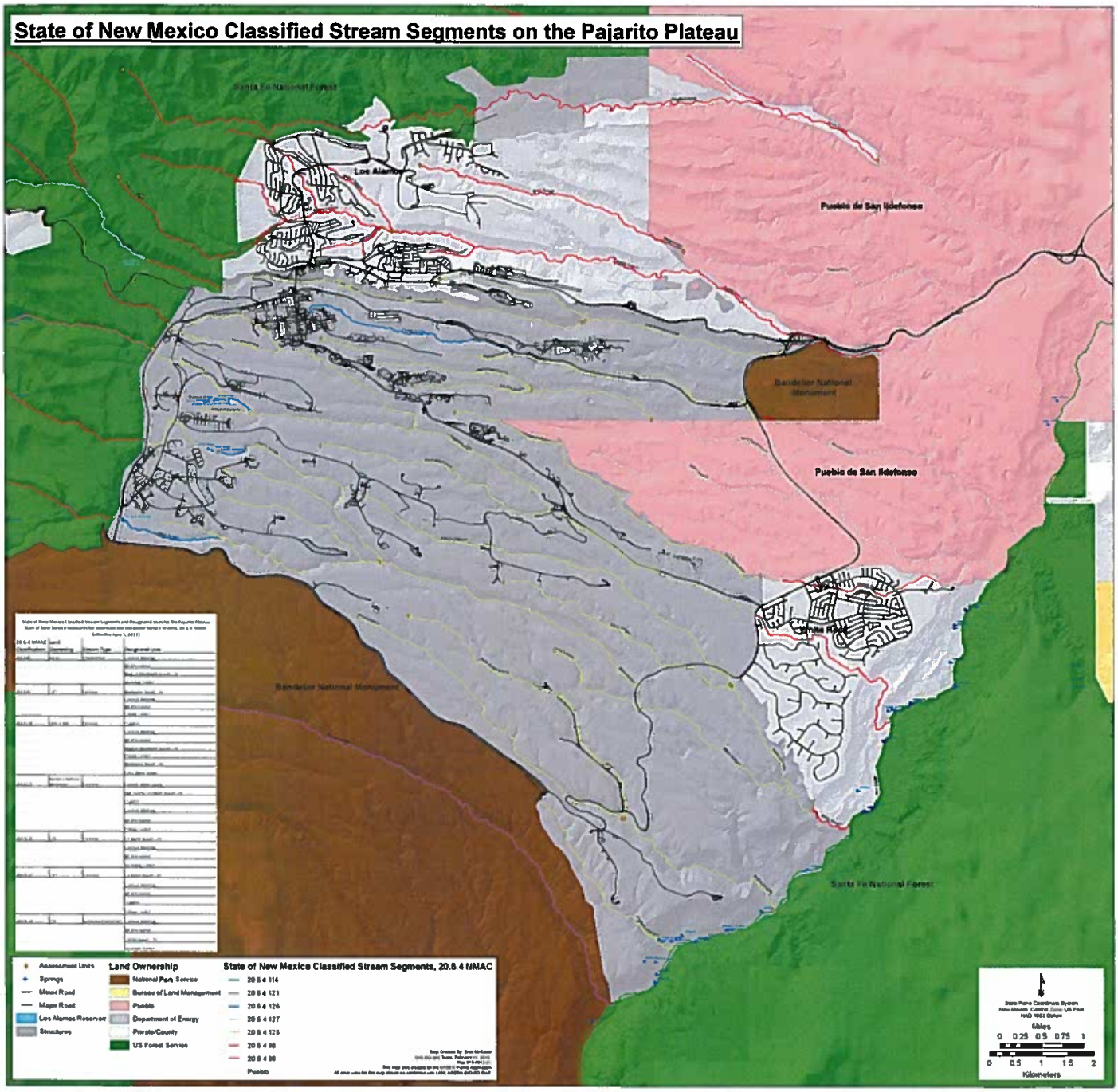
The Department's proposed changes to the domestic water supply use in most cases weaken the associated criteria because the proposed changes disregard the potential health effects to people who both drink the water and eat fish from the same water source. The EPA recommended criteria for consumption of water plus organism (these were the standards that the WQCC currently applies to the domestic water supply use) should continue to apply to the domestic water supply use. These criteria can be found in the November 2002 EPA Human Health Criteria Calculation Matrix. As a Clean Water Act trainer and through my work on New Mexico water policy issues, to my knowledge, all waters that have a domestic water supply use also has an aquatic life use and thus it is likely that some people both fish and drink from these waters. In fact, it is much more likely that both uses are conducted on the same waters than not. Many of the waters where people fish are also waters where people hike and camp and consume water. To protect these existing uses the more sensitive criteria for consumption of water and organism should apply. In addition, if protections are downgraded from consumption of water and organisms to only protecting for consuming water, a UAA is required. To my knowledge, UAAs for the multiple segments impacted have not been conducted.

11. 6T3 AND 4T3

The Department's 7/6/09 proposal to include these new definitions and temperature criteria under the designated uses is of concern. Unfortunately the on the ground impacts of these additions appears to be a lowering of water quality standards. For example, the previous maximum standard for the marginal coldwater use was 25 degrees C but now the maximum temperature is 29 degrees C and the 6T3 temperature is 25 degrees C. I question whether the Department rarely, if ever, is out sampling the same location for 4 consecutive hours on four or more consecutive days. If these sampling conditions are rarely, if ever, met then the end result is basically increasing the maximum temperature criteria (since this will be the only criteria for which there will be monitoring data) for each designated aquatic use.

Submitted by:
Rachel Conn
August 27, 2009

LA-UR-15-21057



SALADEN REBUTTAL
EXHIBIT B

Exhibit 26

RECORD OF DECISION

New Mexico's Standards For Interstate and Intrastate Surface Waters 20.6.4 NMAC

U.S. EPA REGION 6
WATER QUALITY PROTECTION DIVISION
APRIL 12, 2011

Table of Contents

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.

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).~~]

In 2006, EPA took no action on this new segment, noting that the State had not provided adequate supporting documentation justifying the secondary contact use designation. EPA noted that 40 CFR 131.6(b) and (f) requires the submission of supporting analyses and other general information that will assist EPA in determining the adequacy of standards that don't include uses specified in §101(a)(2) of the Act. We noted that to comply with the regulation, New Mexico must submit a UAA to demonstrate why attaining the secondary contact recreation uses are not feasible based on one of the factors listed in 40 CFR 131.10(g).

Following that recommendation, NMED developed a UAA in August 2007, to support the secondary contact use designation for this segment. The data indicate that the predominate low-flows throughout the majority of the year support the contention that primary contact is not feasible because insufficient water depth for full body immersion. In addition, the difficult and restricted access to this segment makes primary contact recreation unlikely. EPA approved this UAA on August, 31, 2007.

*See section **20.6.4.101 NMAC** for a discussion of the restructuring of section **B. Criteria (1)** and **(2)**.*

***EPA Action:** EPA approves the modifications to this segment. As required by 40 CFR 131.20(a), any segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act must be re-examined every three 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 must revise its standards accordingly.*

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)~~].

*See section **20.6.4.101 NMAC** for a discussion of the restructuring of section **B. Criteria (1)** and **(2)**.*

***EPA Action:** EPA approves the modifications to this segment.*

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:

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

[~~**(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 Subsection K of 20.6.4.900 NMAC (salmonids absent) are applicable to this use.~~]

In its 2005 action, New Mexico designated limited aquatic life and secondary contact uses for this segment. In 2006, EPA took no action on this new segment, noting that the State had not provided adequate support justifying the limited aquatic life or the secondary contact use designation. EPA noted that 40 CFR 131.6(b) and (f) requires the submission of supporting analyses and other general information that would assist EPA in determining the adequacy of standards that don't include uses specified in §101(a)(2)

of the Act. EPA noted that to comply with the regulation, New Mexico must submit a UAA to demonstrate why attaining the limited aquatic life and secondary contact recreation uses are not feasible based on one of the factors listed in 40 CFR 131.10(g).

Following that recommendation, NMED developed a UAA in August 2007, to support the limited aquatic life and secondary contact use designations for this segment. The State's UAA identified the streams included in this segment as ephemeral and intermittent. Given that these streams do not flow for varying periods throughout the year and the lack of upstream source populations, it is unlikely that this segment could support a higher use. EPA approved the limited aquatic life and secondary contact use designations for this segment on August 31, 2007.

*See section **20.6.4.101 NMAC** for a discussion of the restructuring of section **B. Criteria (1)** and **(2)**.*

***EPA Action:** EPA approves the modifications to this segment.*

As required by 40 CFR 131.20(a), any segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act must be re-examined every three 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 must revise its standards accordingly.

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~~] primary 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~~] 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~~], except that the following segment-specific criteria apply: specific conductance 400 µS/cm or less and phosphorus (unfiltered sample) less than 0.1 mg/L.

[~~**(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).~~]

*See section **20.6.4.7 A NMAC** for a discussion of abbreviations specific to conductance. See section **20.6.4.101 NMAC** for a discussion of the restructuring of section **B. Criteria (1)** and **(2)**.*

***EPA Action:** EPA approves the modifications to this segment.*

20.6.4.130 RIO GRANDE BASIN - The Rio Puerco from the Rio Grande upstream to Arroyo Chijuilla, excluding the reaches on Isleta, Laguna and

Exhibit 27

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202 – 2733

JUN 8 2017

Mr. Larry Dominguez
Chair
New Mexico Water Quality Control Commission
P.O. Box 5469
Santa Fe, NM 87502

RE: New Mexico 2013 Triennial Revisions to 20.6.4 NMAC

Dear Mr. Dominguez:

I am writing in response to Butch Tongate's letter requesting review and action on revisions to New Mexico's *Standards for Interstate and Intrastate Surface Waters* 20.6.4 New Mexico Administrative Code (NMAC). These revisions became effective on March 2, 2017, and were submitted by the New Mexico Water Quality Control Commission for the U.S. Environmental Protection Agency's (EPA) review via letter dated March 14, 2017, as required under federal regulations at 40 CFR §Part 131.5. The revised water quality standards (WQS) were submitted to EPA with an attorney's statement certifying that the revised WQS were adopted pursuant to the laws of the State of New Mexico. EPA received the WQS submission on March 20, 2017.

I am pleased to inform you that in today's action, EPA is approving the majority of the new and/or revised provisions as detailed in **Section II** of the enclosed Technical Support Document (TSD) pursuant to CWA §303(c) and its implementing regulations at 40 CFR Part 131. The EPA has determined that although some of the revisions to these provisions may be non-substantive, they are approved pursuant to CWA §303(c) and its implementing regulations at 40 CFR Part 131. Please be advised that EPA is not approving the New Mexico water quality standards for those waters or portions of waters located in Indian Country, as defined in 18 U.S.C. § 1151.

The EPA has determined that no action should be taken on two provisions as detailed in **Section III** of the TSD pursuant to CWA §303(c) and its implementing regulations at 40 CFR Part 131. First, no EPA action is required for 20.6.4.16 – Planned Use of a Piscicide. Although the amended provision has been retained in the state's WQS, the provision is not intended as a regulatory requirement. Consistent with its prior 2006 action, EPA has determined that the amended provision represents state implementation procedures for the use of a piscicide for restoration efforts, but is not a WQS subject to review under CWA Section 303(c). This means that the state may use the procedures as intended for restoration efforts in state waters. Secondly, the EPA has also determined that it does not have adequate information to take action on amended designated uses for the Chino Mines Smelter Tailings Soils Investigation Unit waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv) or associated criteria in 20.6.4.808 and 809 NMAC– Closed Basins and Water Effect Ratios (WER). This decision does not mean the use determinations or WER calculations for these waters cannot be supported, but that additional information is needed to support the conclusions concerning the highest attainable use for these waters consistent with federal regulations at 40 CFR 131.10(g). Please note that these provisions are not effective for CWA purposes unless and until approved by EPA as specified at 40 CFR §131.21(c).

The approval of some portions of the new and revised WQS identified in the TSD are subject to the results of consultation under Section 7(a)(2) of the Endangered Species Act (ESA). The EPA is approving specific aquatic life criteria and supporting criteria revisions contained in the submittal, pending the completion of consultation with the U.S. Fish and Wildlife Service (USFWS) under Section7(a)(2) of the Endangered Species Act (ESA). EPA initiated informal consultation with the Service on these revisions by letter dated March 21, 2017 (enclosed). Although EPA has not yet completed consultation with USFWS, EPA's approval of these new and revised water quality standards is fully consistent with Section 7(d) of the ESA because it does not foreclose either the formulation by USFWS or the implementation by the EPA of any alternatives that might be determined in the consultation to be needed to comply with Section 7(a)(2). EPA has authority to take additional action regarding the revision of the New Mexico WQS if the consultation with USFWS identifies deficiencies in the revised WQS requiring remedial action by EPA, after EPA has approved the revisions.

I would like to commend the Commission, New Mexico Environment Department and Surface Water Quality Bureau for their commitment and hard work in reviewing and revising the state's WQS. We look forward to working with you to resolve the outstanding issues related to this triennial review. If you have any questions or concerns, please contact me at (214) 665-7101, or have your staff contact Russell Nelson at (214) 665-6646.

Sincerely,

WK Honker

William K. Honker, P.E.
Director
Water Division

Enclosure

cc: Pam Castaneda
Administrator for Boards & Commissions
New Mexico Environment Department
P.O. Box 5469
Santa Fe, NM 87502 - 5469

John B. Verheul
Assistant General Counsel
New Mexico Environment Department

Butch Tongate
Secretary
New Mexico Environment Department

Shelly Lemon
Bureau Chief
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, NM 87502 – 5469

Kristopher Barrios
Program Manager (Acting)
Monitoring, Assessment & Standards Section
Surface Water Quality Bureau

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

Susan Millsap
Field Supervisor
Ecological Services Office
U.S. Fish and Wildlife Service
2105 Osuna Road NE
Albuquerque, NM 87113-1001

Lynn Wellman
Regional Water Quality Coordinator
U.S. Fish and Wildlife Service
Box 1306
Albuquerque, NM 87103

AMENDED

TECHNICAL SUPPORT DOCUMENT

EPA Action on the
New Mexico Water Quality Standards for
Interstate and Intrastate Surface Waters
20.6.4 NMAC

2013 Triennial Revisions

U.S. EPA REGION 6
WATER QUALITY PROTECTION DIVISION
August 11, 2017

Table of Contents

I. Introduction

Background

As described in § 303(c) of the Clean Water Act (CWA) and in the Water Quality Standards Regulation at 40 CFR Part 131.20, States and authorized Tribes have primary responsibility to develop and adopt water quality standards to protect their waters. State and Tribal water quality standards consist of three primary components: designated uses, criteria to support those uses, and an antidegradation policy. In addition, CWA § 303(c)(1) and 40 CFR 131.20 require States to hold public hearings at least once every three years to review and, as appropriate, modify and adopt standards. Under 40 CFR 131.21, EPA reviews new and revised surface water quality standards that have been adopted by States and authorized Tribes. Authority to approve or disapprove new and/or revised standards submitted to EPA for review has been delegated to the Water Quality Protection Division Director in Region 6. Tribal or State water quality standards are not effective under the CWA until approved by the Environmental Protection Agency (EPA)[1].

The purpose of this Technical Support Document (TSD) is to provide the basis for the Environmental Protection Agency's (EPA) action on the New Mexico Standards for Interstate and Intrastate Waters (20.6.4 NMAC).

Chronology of Events

The Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department (NMED) announced a scoping phase and the intent to review New Mexico's water quality standards. The scoping phase ran from April 3rd to May 15th, 2013.

The review included an extensive public participation process, including public notices for the comments and public meetings on its initial discussion draft as well as informal meetings with stakeholder groups. These included a public meeting in Farmington, New Mexico on December 17, 2013 to present and discuss the draft Use Attainability Analysis (UAA) related to the Animas River, and another in Silver City, New Mexico on July 10, 2014, where the Mimbres UAA was discussed. The comment period for the Public Discussion Draft was conducted April 1 – May 30, 2014, and included a 30-day extension which was granted on April 28, 2014. Throughout 2015 the SWQB met with watershed/river conservation groups, municipalities, water districts, industrial/trade groups, private entities and citizens to resolve issues related to SWQB's proposed amendments. The SWQB also received formal comments from a variety of contributors including the U.S. Environmental Protection Agency (EPA). The SWQB revised its initial discussion draft to reflect comments received from both the public and EPA during the public participation process.

[1] Alaska rule" [Federal Register: April 27, 2000 (Volume 65, Number 82)]

NMED had previously petitioned the Water Quality Control Commission (Commission) in its July 8, 2014 regular public meeting to conduct the triennial review of New Mexico's Water Quality Standards, 20.6.4. NMAC. The SWQB requested that the Commission set the hearing date for its March 10, 2015, meeting. The Commission's hearing was initially postponed and rescheduled and was held October 13, 2015 through October 16, 2015. The water quality standards amendments were approved by the Commission on January 10, 2017; published in the NM Register on January 31, 2017; and became effective for state purposes on March 2, 2017. The Commission submitted these amendments to EPA on March 14, 2017.

Summary of Proposed Revisions

The SWQB proposed the following for consideration by the Commission:

- Segment-specific standards for aquatic life protection in the Mimbres and San Juan River basins;
- A new temporary standards provision in 20.6.4.10 NMAC;
- Updates to the piscicide provision in 20.6.4.16 NMAC for applications under EPA permit program and for public input or hearing requests when applications are not covered under an EPA permit;
- Primary contact uses and criteria updates for nine segments based on CWA requirements and the most recent EPA recommendations;
- Listing of ephemeral waters under Section 20.6.4.97 NMAC pursuant to Subsection C of Section 20.6.4.15 NMAC;
- Adoption of EPA recommended criteria for *E. coli* and *enterococci* as indicators of fecal contamination;
- Revisions to applicability of hardness-based aluminum criteria, and
- Clarifications of criteria applicability, updates to methods and corrections of grammatical errors.

EPA initially approved the majority of these amendments on June 8, 2017. In cooperation with the SWQB, EPA found that it inadvertently approved the proposed revisions to segments 20.6.4.103, 116, 124, 204, 206, 207, 213, 219, and 308 NMAC in error. EPA amended its action and this TSD on August 11, 2017. Provisions that EPA approved are identified and discussed in **Section II** of this TSD. Those provisions that EPA is taking no action on at this time are identified and discussed separately in **Section III**.

II. New or Revised Provisions EPA is Approving

EPA Review of New/Revised Provisions

The EPA is approving the new or revised provisions in New Mexico's Water Quality Standards 20.6.4 NMAC described in this section unless noted otherwise. The new and revised standards will apply throughout the State of New Mexico, excluding areas of Indian country as defined in 18 U.S.C. § 1151.

Some of the modified provisions in 20.6.4. NMAC are presented in an underline/strikeout format to provide context to the reader. What follows modified provision is EPA's discussion of the new/revised provision, which may include an explanation of how EPA interprets the particular provision on its own or in the context of a specific applicable federal regulation(s).

The EPA has determined that a number of the following revisions to New Mexico's WQS at 20.6.4 NMAC do not substantively modify New Mexico's WQS. The EPA considers such non-substantive changes to existing WQS to constitute new or revised WQS that EPA has the authority and duty to approve or disapprove under CWA 303(c)(3). While such revisions do not substantively change the meaning or intent of the existing WQS, EPA believes that it is reasonable to treat such non-substantive changes in this manner to ensure public transparency on what provisions are effective for purposes of the CWA. The EPA's action on non-substantive changes to previously approved WQS do not constitute an action on the underlying previously approved WQS. Any challenge to EPA's prior approval of the underlying WQS would be subject to any applicable statute of limitations and prior judicial decisions. In today's action, EPA is acting on both the non-substantive and substantive revisions to New Mexico's WQS adopted by the Commission on January 10, 2017, which are identified in the subsections below, pursuant to § 303(c) of the CWA.

New Mexico 2010 Triennial Review Amendments

20.6.4.7. Definitions

The Commission has made the following changes to 20.6.4.7 NMAC. In most instances, a change to a current definition is considered to be a non-substantive revision and will not be discussed in detail unless relevant to understanding, interpretation or applying other provisions. Structural changes (e.g., renumbering of subparagraphs, etc. are considered non-substantive changes and are not discussed here. These amendments are approved.

A. Terms beginning with numerals or the letter "A," and abbreviations for units.

(3) Abbreviations used to indicate units are defined as follows:

(a) "cfu/100 mL" means colony-forming units per 100 milliliters. 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;

(g) "MPN/100 mL" means most probable number per 100 milliliters; the results for *E. coli* may be reported as either CFU or MPN, depending on the analytical method used;

[~~(g)~~] (h) "NTU" means nephelometric turbidity unit;

[~~**(h)**~~] **(i) "pCi/L"** means picocuries per liter;

(j) "pH" means the measure of the acidity or alkalinity and is expressed in standard units (su).

EPA Discussion: The Commission has amended the definition for "cfu" to clarify that results based on alternate enumeration methods for the detection of enterococci and E. coli in ambient waters, and in wastewater and sludge are consistent with EPA

recommendations (68 FR 43272, July 21, 2003 and 72 FR 14220, March 26, 2007). The state's intent is to include the alternate enumeration in the definition here to clarify that the approved method may be used in reporting results for the 52 classified segments with segment-specific E. coli criteria expressed as cfu/100 mL, without adding the language to each segment in the water quality standards (WQS).

The Commission also adopted the language in Subsections 20.6.4.900 D. and 20.6.4.900 E. NMAC that acknowledges the use of alternate enumeration methods for E. coli bacteria including most probable number (MPN) for the detection of enterococci and E. coli in ambient waters and in wastewater and sludge. The abbreviation and units for most probable number (as MPN) here are intended to support the revision to Subsections 20.6.4.900 D. and 20.6.4.900 E. NMAC. Subsequent modifications to numbering in subsequent provision are nonsubstantive.

In addition, a definition for pH and the unit of measure for pH, standard units (su) has also been included in the abbreviations. pH is referred to throughout the state's water quality standards but previously had not been defined or its unit of measure indicated.

C. Terms beginning with the letter "C".

(4) **"Closed basin"** is a basin where topography prevents the surface outflow of water and water escapes by evapotranspiration or percolation.

[~~(4)~~] (5) "Coldwater" in reference to an aquatic life use means a surface water of the state where the water temperature and other characteristics are suitable for the support or propagation or both of coldwater aquatic life.

[~~(5)~~] (6) "Coolwater" in reference to an aquatic life use means the water temperature and other characteristics are suitable for the support or propagation of aquatic life whose physiological tolerances are intermediate between and may overlap those of warm and coldwater aquatic life.

[~~(6)~~] (7) "Commission" means the New Mexico water quality control commission.

[~~(7)~~] (8) "Criteria" are elements of state water quality standards, expressed as constituent

EPA Discussion:

The Commission added a definition of "closed basin" to describe surface waters in closed basins within 20.6.4.801-807 NMAC. The term "closed basin" is based on a classification scheme used by the United States Geological Survey (USGS). Modifications to numbering in subsequent provision are nonsubstantive.

D. Terms beginning with the letter "I".

(6) "Irrigation storage" means storage of water to supply the needs of beneficial plants.

EPA Discussion:

Most reservoirs classified in the New Mexico WQS standards include the designated use 'irrigation storage' as described in Subsection C of 20.6.4.900 NMAC. Although waters with the irrigation and irrigation storage designated uses have identical criteria assigned as described in Subsections C and J, of 20.6.4.900 NMAC, irrigation storage has not previously been defined in this subsection. By defining irrigation storage, the

Commission make it clear that the irrigation and irrigation storage uses are essentially the same and that the referenced criteria apply to both designated uses.

20.6.4.10. Review of Standards; Need for Additional Studies

F. Temporary Standards.

(1) Any person may petition the commission to adopt a temporary standard applicable to all or part of a surface water of the state as provided for in this section and applicable sections in 40 CFR Part 131, Water Quality Standards; specifically, Section 131.14. The commission may adopt a proposed temporary standard if the petitioner demonstrates that:

(a) attainment of the associated designated use may not be feasible in the short term due to one or more of the factors listed in 40 CFR 131.10(g), or due to the implementation of actions necessary to facilitate restoration such as through dam removal or other significant wetland or water body reconfiguration activities as demonstrated by the petition and supporting work plan requirements in Paragraphs (4) and (5) of Subsection F of 20.6.4.10 NMAC;

(b) the proposed temporary standard represents the highest degree of protection feasible in the short term, limits the degradation of water quality to the minimum necessary to achieve the original standard by the expiration date of the temporary standard, and adoption will not cause the further impairment or loss of an existing use;

(c) for point sources, existing or proposed discharge control technologies will comply with applicable technology-based limitations and feasible technological controls and other management alternatives, such as a pollution prevention program; and

(d) for restoration activities, nonpoint source or other control technologies shall limit downstream impacts, and if applicable, existing or proposed discharge control technologies shall be in place consistent with Subparagraph (c) of Paragraph (1) of Subsection F of 20.6.4.10 NMAC.

(2) A temporary standard shall apply to specific designated use(s), pollutant(s), or permittee(s), and to specific water body segment(s). The adoption of a temporary standard does not exempt dischargers from complying with all other applicable water quality standards or control technologies.

(3) Designated use attainment as reported in the federal Clean Water Act Section 305(b)/303(d) Integrated Report shall be based on the original standard and not on a temporary standard.

(4) A petition for a temporary standard shall:

(a) identify the currently applicable standard(s), the proposed temporary standard for the specific pollutant(s), the and the specific surface water body segment(s) of the state to which the temporary standard would apply;

(b) include the basis for any factor(s) specific to the applicability of the temporary standard (for example critical flow under Subsection B of 20.6.4.11 NMAC);

(c) demonstrate that the proposed temporary standard meets the requirements in this subsection;

(d) present a work plan with timetable of proposed actions for achieving compliance with the original standard in accordance with Paragraph (5) of Subsection F of 20.6.4.10 NMAC;

(e) include any other information necessary to support the petition.

(5) As a condition of a petition for a temporary standard, in addition to meeting the requirements in this Subsection, the petitioner shall prepare a work plan in accordance with Paragraph (4) of Subsection F of 20.6.4.10 NMAC and submit the work plan to the department for review and comment. The work plan shall identify the factor(s) listed in Subsection 40 CFR 131.10(g) or Subparagraph (a) of Paragraph (1) of Subsection F of 20.6.4.10 NMAC affecting attainment of the standard that will be analyzed and the timeline for proposed actions to be taken to achieve the uses attainable over the term of the temporary standard, including baseline water quality, and any investigations, projects, facility modifications, monitoring, or other measures necessary to achieve compliance with the original standard. The work plan shall include provisions for review of progress in accordance with Paragraph (8) of Subsection F of 20.6.4.10 NMAC, public notice and consultation with appropriate state, tribal, local and federal agencies.

(6) The commission may condition the approval of a temporary standard by requiring additional monitoring, relevant analyses, the completion of specified projects, submittal of information, or any other actions.

(7) Temporary standards may be implemented only after a public hearing before the commission, commission approval and adoption pursuant to Subsection F of 20.6.4.10 NMAC for all state purposes, and the federal Clean Water Act Section 303 (c) approval for any federal action.

(8) All temporary standards are subject to a required review during each succeeding review of water quality standards conducted in accordance with Subsection A of 20.6.4.10 NMAC. The petitioner shall provide a written report to the commission documenting the progress of proposed actions, pursuant to a reporting schedule stipulated in the approved temporary standard. The purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. If the petitioner cannot demonstrate that sufficient progress has been made the commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

(9) The commission may consider a petition to extend a temporary standard. The effective period of a temporary standard shall be extended only if demonstrated to the commission that the factors precluding attainment of the underlying standard still apply, that the petitioner is meeting the conditions required for approval of the temporary standard, and that reasonable progress towards meeting the underlying standard is being achieved.

(10) A temporary standard shall expire no later than the date specified in the approval of the temporary standard. Upon expiration of a temporary standard, the original standard becomes applicable.

(11) Temporary standards shall be identified in Sections 20.6.4.97-899 NMAC as appropriate for the surface water affected.

(12) "Temporary standard" means "a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the temporary standard."

EPA Discussion:

The Commission has previously adopted a number of tools to revise designated uses and criteria when appropriate. In developing this provision, the SWQB also recognized that there are instances when water quality standards are not currently attainable, but downgrading the designated or developing site specific criteria are not appropriate. To address these instances, the SWQB considers a temporary standard to be the appropriate legal mechanism for establishing less stringent water quality based effluent limits in NPDES permits while efforts are made to make incremental improvements in water quality leading to eventual attainment of the underlying designated use. The SWQB developed these temporary standards in line with 40 CFR § 131.14 that establishes an explicit regulatory framework for the adoption of WQS variances that states and authorized tribes can use to implement adaptive management approaches to improve water quality.

Although the SWQB initially considered the development of a general variance authorizing provision, a unique aspect of state law complicated that effort. The New Mexico Water Quality Act, NMSA 1978, § 74-6-1, et. seq., and its implementing regulations, define a 'variance' as an individual discharge permit-specific exclusion from regulation. See generally NMSA 1978 § 74-6-4 (h). This provision of state law means that the use of the term 'variance' as described in 40 CFR § 131.14 would likely result in

confusion with the meaning as defined in the NMSA[2] and as a result, the term could not be used in the state's WQS. This prompted the SWQB to develop a temporary water quality standard provision that would function much the same way as a WQS variance would, resulting in the provision under review today.

EPA defines a variance as a time-limited designated use and water quality criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the WQS variance. Given that EPA guidance refers to temporary or interim water quality criteria as a 'WQS variance' the Region considers the use of the term 'temporary standard' in the context it is being used in this provision to be appropriate, thus avoiding the conflict with the NMSA and enabling the SWQB to fashion a provision that is intended to meet federal requirements. For the purposes of EPA's review of 20.6.4.10 F. NMAC, the terms "temporary standard" and "WQS variance" are equivalent.

Although states and authorized tribes are not required to adopt a variance provision into their water quality standards, in those instances where a state has adopted such a provision and the provision is new or revised, EPA considers the provision itself to be a WQS pursuant to 40 CFR § 131.14. Although EPA is approving this variance procedure, the Commission is still required to submit each individual WQS variance to EPA for review and action before it is effective for purposes of the CWA because the individual variances themselves are new or revised WQS. Accordingly, each variance submitted for EPA's review must include the Attorney General's certification and be consistent with the CWA and EPA's implementing regulations, including 40 CFR 131.14 and all applicable public participation requirements. Thus, EPA's review of the Commission's variance procedures at 20.6.4.10 NMAC need not evaluate each hypothetical variance the state could issue under this regulation and consider whether such a variance would be consistent with the CWA and EPA's implementing regulation. EPA's approval of Commission's general authorizing procedures for variances is not an automatic approval of any future variance the Commission wishes to grant nor does it bind EPA to reviewing the subsequent variance on any basis other than the CWA and EPA's regulation.

EPA Interpretation of 20.6.4.10 NMAC

At the time the SWQB's then draft provision was working its way through the state's public review and hearing process, EPA was revising the water quality standards regulation at 40 CFR 131. These revisions included a new section at 40 CFR 131.14 authorizing the use and specifying the requirements for WQS variances. Because 40 CFR 131.14 was not final when the SWQB drafted the state regulations providing for temporary standards, there are significant differences between the state and federal provisions. These differences will mean that Region 6 and SWQB water programs will need to work closely to ensure that temporary standards that are adopted by the Commission are consistent with federal regulations.

[2] Cite New Mexico statutes using the chapter, article, and section of the official 1978 compilation of the *New Mexico Statutes Annotated* (NMSA 1978).

To facilitate this, EPA has reviewed the state's temporary standard provision in the context of the federal regulation. Although generally not inconsistent with the federal regulation at 40 CFR 131/14, there are elements of 20.6.4.10. NMAC for which the state should provide additional supporting information as detailed below:

20.6.4.10. F(1) NMAC

EPA equates "any person" to mean permittee(s) or discharger(s) subject to a temporary standard for an existing CWA Sec. 402 permit since EPA recognizes that states and authorized tribes often delegate much of the analytical and administrative work related to developing a WQS variance to permittees/dischargers. EPA also equates "any person" to mean any individual petitioning the Commission for a temporary standard establishing enforceable controls or limits that apply to CWA Sec. 404 permits for restoration/remediation. Regardless of the entity developing the temporary standard, the state is ultimately responsible for the content and for submitting the temporary standard to EPA for review and action under CWA Sec. 303(c). In effect, it doesn't matter who actually does the work of developing the variance as long as the state takes responsibility for its submission and reevaluations as may be required.

20.6.4.10. F(1)(b) NMAC

This subparagraph states that a proposed temporary standard represents the highest degree of protection feasible in the short term, limits the further degradation of water quality to the minimum necessary to achieve the original standard by the expiration date of the temporary standard, and ensures that adoption will not cause the further impairment or loss of an existing use.

The federal regulation at 40 CFR § 131.14(b)(1)(ii) requires the highest attainable condition of the water body or waterbody segment apply throughout the term of the WQS variance, but also specifically limits the lowering of the currently attained ambient water quality, unless a WQS variance is necessary for restoration activities. Given that 20.6.4.10. F(1)(b) NMAC does not differentiate between a variance that may be allowed for a direct discharge under a National Pollutant Discharge Elimination System (NPDES) permit or a restoration project, it could be interpreted as allowing degradation inconsistent with the requirements in 40 CFR § 131.14(b)(1)(ii). However, based on further clarification provided by the SWQB, EPA interprets the provision as a whole to mean that the Commission's temporary standard provision is intended to not only describe the general mechanism for application, development, adoption and approval of variances that apply to a NPDES discharge but to also apply to restoration and/or remediation activities. Further, New Mexico's Antidegradation Policy (20.6.4.8 NMAC) and Implementation Procedure (Appendix A of WQMP/CPP) detail the level of protection afforded to waters of the state. At a minimum, existing instream water uses and the level of water quality necessary to protect those uses must be maintained and protected in all surface waters of the state at all times.

Thus EPA interprets this provision to mean that the Commission may adopt temporary standards for a NPDES discharge or for restoration activities under this provision so long at that variance does not allow the lowering of the currently attained ambient water quality throughout the term of the variance consistent with the state's antidegradation policy. The state's policy requires, at a minimum, existing uses (i.e., "currently attained ambient water quality") be maintained and protected regardless of whether it is for an NPDES permit or restoration activity. This approach is more protective than the federal provision at 40 CFR § 131.14 (b)(2)(i)(A)(2) which allows lowering of the currently attained ambient water quality, but appears intended to apply to temporary standard for restoration.

The Commission may also consider revising the provision language to clarify that a variance not result in any lowering of the currently attained ambient water quality, unless the variance is necessary for restoration activities; and that the requirements that apply throughout the term of the temporary standard represent the "highest degree of protection feasible," or equivalent to the highest attainable condition of the water body or water body segment as defined in 40 CFR §131.14(b)(1)(ii). As written, 20.6.4.10 F(1)(b) NMAC contemplates the possibility of the original standard being achieved by the expiration date of the temporary standard. If the original standard could be achieved over the course of a temporary standard, a compliance schedule would be a more appropriate mechanism for meeting the underlying designated use and criterion.

20.6.4.10. F(2) NMAC

EPA interprets subparagraph 20.6.4.10. F(2) to mean that a temporary standard may be applied to a specified water body, or portion of a water body, and to a specified criterion or pollutant. As such, a temporary standard would apply to a particular designated use and associated criterion for a specified period.

20.6.4.10. F(3) NMAC

The first sentence in this subparagraph could be interpreted as inconsistent with 40 CFR § 131.14(a)(2). However, EPA interprets the reference to "designated uses" to mean the underlying designated use and considers the language in this paragraph approvable.

20.6.4.10. F(4)(d) NMAC and 20.6.4.10. F(5) NMAC

Subparagraph 20.6.4.10. F(4)(d) NMAC describes the required elements of a petition for a temporary standard, specifically a work plan with timetable of proposed actions for achieving compliance with the original standard in accordance with paragraph (5). 20.6.4.10. F(5) NMAC itself specifies actions to be taken to achieve the uses attainable over the term of the temporary standard, including other measures necessary to achieve compliance with the original standard.

EPA's concern here is that both subparagraph 4 and paragraph 5 use the phrases "achieving compliance" or "achieve compliance" which could be confused as referring to

a compliance schedule rather than a temporary standard. Because it has the potential to cause confusion, EPA recommends that the Commission clarify this language in subsequent revisions. In the interim, EPA will interpret these phrases to mean achieving the highest attainable use as the proponent makes progress toward the original standard (underlying designated use).

20.6.4.10 F(5) NMAC

This paragraph details that as a condition of a petition for a temporary standard, the petitioner must prepare a detailed work plan to ensure consistency with this subsection and specifically paragraph (4), along with other measures that are necessary to achieve the highest attainable condition throughout the term of the temporary standard.

Although this paragraph refers to consultation with appropriate state, tribal, local and federal agencies, there is no specific reference to EPA review of temporary standard work plans. 20.6.4.10. F(1) refers to the federal regulation at 40 CFR 131.14, which requires at (b)(2)(ii) that states submit to EPA "… documentation demonstrating that the term of the WQS variance is only as long as necessary to achieve the highest attainable condition. Such documentation must justify the term of the WQS variance by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance." Thus, the workplan is an important piece of documentation the state should submit to EPA so that EPA can properly evaluate the WQS variance duration. Additionally, early EPA review of supporting work plans that may lead to proposed standards can potentially save the proponent, the state and EPA resources if problems can be identified and resolved before formal adoption and submission by the Commission and formal review by EPA.

20.6.4.10. F(8) NMAC

This paragraph specifies that all temporary standards are subject to a required review during each succeeding review of the state's water quality standards and that such reviews are to be conducted in accordance with 20.6.4.10. A. NMAC. The paragraph also requires the petitioner for a temporary standard to provide a written report to the Commission documenting the progress of proposed actions, pursuant to a reporting schedule stipulated in the approved temporary standard. The stated purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. In those instances, where the petitioner cannot demonstrate that sufficient progress has been made, the paragraph states that the Commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

The language in this paragraph raises three issues: (1) the timing of the required reviews; (2) the review of the reports documenting progress to be provided to the Commission; and (3) revocation of temporary standard based on performance.

Timing of the required review

Paragraph 20.6.4.10. F(8) NMAC specifies that all temporary standards are subject to a required review during each succeeding review of the state's water quality standards. These reviews are to be conducted in accordance with 20.6.4.10. A. NMAC. The provision at 20.6.4.10. A. NMAC refers to CWA Section 303(c)(1) which requires states to hold public hearings at least once every three years for the purpose of reviewing water quality standards and proposing, as appropriate, necessary revisions to those WQS.

EPA guidance concerning timing of triennial reviews describes the 3-year triennial period as being measured from the date of the letter in which the State informs EPA that new or revised standards have been adopted and are being submitted for EPA review or, if no changes were made in the standards for those waters, from the date of the letter in which the State informs EPA that the standards were reviewed and no changes were made. Paragraph 20.6.4.10. F(8) NMAC refers to an undefined term of "succeeding review" in reference to the state's triennial reviews. However, the state's succeeding reviews typically exceeds the 3-year triennial period described in the CWA and EPA guidance. For example, the Commission last notified EPA that new/revised standards had been adopted on December 10, 2010. To meet the 3-year triennial period described in the CWA, the Commission should have held a hearing to consider potential revisions by December 2013, but did not hold its hearing on proposed amendments until October 2015. The Commission did not adopt revisions until January 2017 or submit them for EPA review until March 2017. Given the inherent variability in the actual duration of a state's triennial revision that often exceeds the defined 3-year triennial period described in the CWA and defined in EPA guidance, it is important that the meaning of the phrase "succeeding review" is clear to ensure that the timing of the timing of the required review is both clearly identified in the temporary standard and consistent with the definition outlined in the state's provision and is not inconsistent with the requirements in 40 CFR 131.14.

EPA recommends that this portion of the paragraph be revised and the term "succeeding review" be clarified or defined. Until this can occur, EPA will only consider temporary variances that have defined time frames for review as required by 20.6.4.10.F.(4)(e) NMAC. For those proposed variances with a term greater than five years, the variance must specify that it will be reevaluated no less frequently than every five years after EPA approval and the results of such a reevaluation be submitted to EPA within 30 days of completion to ensure proposed variances are not inconsistent with 40 CFR 131.14(b)(1)(v).

Review of progress reports

Paragraph 20.6.4.10. F(8) NMAC also requires that the petitioner for a temporary standard provide a written report to the Commission documenting the progress of the proposed action, pursuant to a reporting schedule stipulated in the approved temporary standard. The stated purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. Although

this paragraph requires that a report be provided to the Commission based on a specific schedule, it does not specify who will review the report, how public input on the evaluation of progress toward meeting the original conditions identified in the temporary standard will be taken into account, nor does it provide for EPA review.

The state's provision must not be inconsistent with the federal regulation which requires a WQS variance with a term greater than five years to specify a frequency to reevaluate the highest attainable condition using all existing and readily available information and to include a provision specifying how the State intends to obtain public input on the reevaluation. Such reevaluations must occur no less frequently than every five years after EPA approval of the WQS variance and the results of such reevaluation must be submitted to EPA within 30 days of completion of the reevaluation (see 40 CFR 131.14(b)(2)(v)). This means that 1) the state must submit the reevaluation to EPA within 30 days of when the reevaluation takes place, and 2) if it doesn't, the variance is "no longer the applicable water quality standard." EPA's position is that "no longer the applicable water quality standard" means that as long as the requirement is not fulfilled, the underlying designated use is the applicable standard, which means the NPDES permit is no longer deriving from and complying with water quality standards. "No longer the applicable water quality standard" does NOT mean the variance is terminated. Once the reevaluation requirements are fulfilled (the state conducts the reevaluation and submits the results to EPA), the variance again becomes the applicable standard. Practically speaking, this means the consequences for not meeting the reevaluation requirements is that the NPDES permit is no longer complying with WQS.

Revocation of approval of a temporary standard

This portion of this paragraph specifies that if the petitioner cannot demonstrate that sufficient progress has been made the Commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

Although it is unclear whom at the state is responsible for the actual review to determine if a petitioner is not making sufficient progress, once that determination is made, this paragraph gives the Commission authority to revoke or provide additional conditions to that temporary standard. The Commission can only do so under state law. When a temporary standard is adopted by the Commission, once approved by EPA pursuant to Sec. 303 of the CWA, that temporary standard is effective under the CWA and cannot be altered by the Commission. To revoke or revise the temporary standard, the state must submit the results of its review to EPA and demonstrate that the temporary standard should be revoked or modified. If EPA approves the revocation or additional conditions under Sec. 303 of the CWA, those conditions would become the temporary standard that would be effective for CWA purposes.

20.6.4.10.F(9) NMAC

This paragraph specifies that the Commission may consider a petition to extend a temporary standard. The effective period of a temporary standard may be extended only

if it has been demonstrated to the Commission that the factors precluding attainment of the underlying standard still apply, that the petitioner is meeting the conditions required for approval of the temporary standard, and that reasonable progress towards meeting the underlying standard is being achieved.

As noted above, a WQS variance (temporary standard) is a water quality standard subject to EPA review and approval or disapproval. (40 CFR 131.14). When a temporary standard is adopted by the Commission and submitted to EPA for review and approved under Sec. 303 of the CWA, the temporary standard is effective for CWA purposes. Any action to extend the effective period of the temporary standard would constitute a revision to applicable WQS, and the revised variance must be submitted to EPA along with all of the necessary supporting documentation for a variance, including justification of the variance term. If EPA approves the revised variance under Sec. 303 of the CWA, it will then become applicable for CWA purposes.

20.6.4.12 Compliance with Water Quality Standards

H. It is a policy of the commission to allow a temporary standard approved and adopted pursuant to Subsection F of 20.6.4.10 NMAC to be included in the applicable federal Clean Water Act permit as enforceable limits and conditions. The temporary standard and any schedule of actions may be included at the earliest practicable time, and shall specify milestone dates so as to measure progress towards meeting the original standard.

EPA Discussion:
By referring to a "Clean Water Act permit" this subparagraph specifies that a temporary standard that has been approved and adopted by the Commission pursuant to 20.6.4.10 F. NMAC must be included as enforceable limits and conditions in both CWA Section 402 and 404 permits at the earliest practicable time.

Although EPA has not granted New Mexico authorization to issue CWA Sec. 402 NPDES permits and only the US Army Corp of Engineers issues individual and general Sec. 404 permits, states have the authority pursuant to CWA Section 401 to allow, disallow or condition federal licenses or permits. EPA interprets this paragraph as enabling the Commission to specify enforceable limits and conditions with regard to CWA Sec. 402 or 404 permits as they apply to temporary standards adopted pursuant to 20.6.4.10 NMAC (unless the activity is exempt from Section 404 regulation, e.g., certain farming and forestry activities) the state's CWA Sec. 401 authority.

20.6.4.97 Ephemeral Waters

20.6.4.97 EPHEMERAL WATERS - Ephemeral [~~unclassified~~] surface waters of the state as identified below and additional ephemeral waters as identified on the department's water quality standards website pursuant to Subsection C of 20.6.4.15 NMAC are subject to the designated uses and criteria as specified in this section. Ephemeral waters classified in sections 20.6.4.101-899 NMAC are subject to the designated uses and criteria as specified in those sections.

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.

C. Waters:

(1) the following waters are designated in the Rio Grande basin:

(a) Cunningham gulch from Santa Fe county road 55 upstream 1.4 miles to a point upstream of the Lac minerals mine, identified as Ortiz mine on U.S. geological survey topographic maps;

(b) an unnamed tributary from Arroyo Hondo upstream 0.4 miles to the Village of Oshara water reclamation facility outfall;

(c) an unnamed tributary from San Pedro creek upstream 0.8 miles to the PAA-KO community sewer outfall;

(d) Inditos draw from the crossing of an unnamed road along a power line one-quarter mile west of McKinley county road 19 upstream to New Mexico highway 509;

(e) an unnamed tributary from the diversion channel connecting Blue canyon and Socorro canyon upstream 0.6 miles to the New Mexico firefighters academy treatment facility outfall;

(f) an unnamed tributary from the Albuquerque metropolitan arroyo flood control authority (AMAFCA) Rio Grande south channel upstream of the crossing of New Mexico highway 47 upstream to I-25;

(g) the south fork of Cañon del Piojo from Canon del Piojo upstream 1.2 miles to an unnamed tributary;

(h) an unnamed tributary from the south fork of Cañon del Piojo upstream 1 mile to the Resurrection mine outfall;

(i) Arroyo del Puerto from San Mateo creek upstream 6.8 miles to the Ambrosia Lake mine entrance road;

(j) an unnamed tributary from San Mateo creek upstream 1.5 miles to the Roca Honda mine facility outfall;

(k) San Isidro arroyo from the Lee Ranch mine facility outfall upstream to Tinaja arroyo;

(l) Tinaja arroyo from San Isidro arroyo upstream to Mulatto canyon; and

(m) Mulatto canyon from Tinaja arroyo upstream to 1 mile northeast of the Cibola national forest boundary.

(2) the following waters are designated in the Pecos river basin:

(a) an unnamed tributary from Hart canyon upstream 1 mile to South Union road;

(b) Aqua Chiquita from Rio Peñasco upstream to McEwan canyon; and

(c) Grindstone canyon upstream of Grindstone Reservoir.

(3) the following waters are designated in the Canadian river basin:

(a) Bracket canyon upstream of the Vermejo river;

(b) an unnamed tributary from Bracket canyon upstream 2 miles to the Ancho mine; and

(c) Gachupin canyon from the Vermejo river upstream 2.9 miles to an unnamed west tributary near the Ancho mine outfall.

(4) in the San Juan river basin an unnamed tributary of Kim-me-ni-oli wash upstream of the mine outfall.

(5) the following waters are designated in the Little Colorado river basin:

(a) Defiance draw from County Road 1 to upstream of West Defiance Road; and

(b) an unnamed tributary of Defiance draw from McKinley county road 1 upstream to New Mexico highway 264.

(6) the following waters are designated in the closed basins:

(a) in the Tularosa river closed basin San Andres canyon downstream of South San Andres canyon; and

(b) in the Mimbres river closed basin San Vicente arroyo from the Mimbres river upstream to Maudes canyon.

EPA Discussion:

In an effort to ensure that all unclassified nonperennial waters in New Mexico are protected consistent with CWA requirements, EPA worked closely with the SWQB in its efforts to establish and revise 20.6.4.97-99 and 20.6.4.15 NMAC in the state's 2005 and 2010 triennial revisions as part of a performance-based approach (See 65 FR 24647, 24648 (April 27, 2000).

The 2010 amendments to 20.6.4.15 C. NMAC allow the SWQB to carry out UAAs supported by its Hydrology Protocol (HP) in an effort to determine appropriate designated uses for waters or reaches within classified segments based on hydrologic characteristics. If such a UAA(s) is approved by the Commission, it is made available on the SWQB's website for 30-day public review and comment period. After addressing comments, the provision provides for the submission of the UAA to EPA for technical approval. If granted technical approval, the specified waters identified on the SWQB's website are then subject to 20.6.4.97 NMAC and can then be use in state water quality management planning decisions. The provision requires that the SWQB periodically petition the Commission to include these waters under subsection C of 20.6.4.97 NMAC. Consistent with this process, the Commission has incorporated a number of waters in subsection C of 20.6.4.97 and submitted the revised water quality standards to EPA for formal review and final approval action under Section 303(c) of the CWA.

In addition, the Commission has removed the term "unclassified" as it applied to those waters which have been characterized as ephemeral based on UAAs supported by the SWQB's HP. Further, the term "surface" to be consistent with the term "surface water(s) of the state" defined in Subsection S of 20.6.4.7 NMAC.

Waters adopted under 20.6.4.97 NMAC:
Subsection C(1); (2)(a); (C)(3); (C)(4), and (C)(5)

The SWQB developed a UAA supported by its HP to determine if what beneficial uses are supported in 18 streams in the Rio Grande basin, Pecos River basin, Canadian River basin and Little Colorado River basin. These waters are associated with 13 NPDES permitted discharges. Table 1 describes the individual waters and the locations of the recorded permitted discharges and the associated facility affected by the state's amendments. They are as follows:

Table 1.

Watercourse	Upstream Lat/Long	Downstream Lat/Long	Total length (Miles)	Facility
Bracket Canyon	36.778/-104.885	36.767/-104.843	2.75	Chevron Mining Inc. Ancho Mine #NM0030180

Tributary to Bracket Canyon	36.778/-104.885	36.766/-104.858	2.00	Chevron Mining Inc Ancho Mine #NM0030180
Gachupin Canyon	36.793/-104.907	36.783/-104.863	2.85	Chevron Mining Inc Ancho Mine #NM0030180
Unnamed Arroyo	35.029/ -106.639	35.03/-106.644 0.35	0.35	Delta Person Generating Station #NM0030376
Unnamed Arroyo	35.059/-106.919	34.063/-106.914	0.57	Firefighters Academy #NM0029726
Cunningham Gulch	35.334/-106.1401	35.342/-1061198	1.41	LAC Minerals, Inc. #NM0028711
Mulatto Canyon Arroyo	35.485/-107.68	35.537/-107.574	8.05	Lee Ranch Coal Co Lee Ranch Mine #NM0029581
Inditos Draw	35.649/-107.833	35.641/-107.788	3.12	Lee Ranch Coal Co. El Segundo Mine #NM0030986
Unnamed Tributary to Kim-me-ni-oli Wash	35.652/-107.839	35.674/-107.923	5.12	Lee Ranch Coal Co. El Segundo Mine #NM0030986
Defiance Draw	35.581/-108.96	35.583/-108.919	2.70	Chevron Mining Inc McKinley Mine #NM0029386
Unnamed Tributary to Defiance Draw	35.625/-108.954	35.601/-108.919	3.14	Chevron Mining Inc McKinley Mine #NM0029386
Canon del Piojo	35.274/-107.2	35.288/-107.192	1.20	Resurrection Mining #NM0028169
Unnamed Tributary to Canon del Piojo	35.265/-107.199	35.287/-107.2	1.00	Resurrection Mining #NM0028169
Unnamed Tributary to Arroyo Hondo	35.601/-106	35.61/-106.006	0.37	Oshara Village Water Reclamation Facility #NM0030813
Unnamed Tributary to San Pedro Creek	35.206/-106.32	35.209/-106.308	0.83	Paa-Ko Communities Sewer Association #NM0029724
Arroyo del Puerto	35.411/-107.83	735.339/-107.795	6.80	Rio Algom Mining LLC Ambrosia Lake

				#NM0020532
Unnamed Tributary to San Mateo Creek	35.361/-107.682	35.344/-107.677	1.45	Strathmore Roca Honda #NM0031020
Unnamed Arroyo	32.826/-104.24	32.836/-104.25	0.95	S.W. Public Services Co. #NM0029131

The supporting UAA was submitted to EPA Region 6 for technical review on October 11, 2012 pursuant to 20.4.6.15 C. NMAC. Based on its review of this supporting UAA, EPA determined that CWA 101(a)(2) uses are not currently attainable in these waters due to natural conditions, and that the appropriate water quality standards designation for these streams is under Section 20.6.4.97 NMAC. EPA Region 6 provided technical approval through its letter and supporting TSD on January 30, 2013.

The Region's January 30, 2013 technical approval did not constitute a final action under § 303(c) of the CWA, but was an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 ((April 27, 2000)). The EPA considers the submission of the amendments detailed above at 20.4.6.97 NMAC, subsections C(1); C(2)(a); C(3); C(4) and C(5) as part of the current amendments to constitute the state's submission under § 303(c) of the CWA. In today's action, EPA is approving the use designations described above for these waters for the reasons detailed in the Region's technical approval and TSD.

Any time a state adopts and EPA approves uses not specified in § 101(a)(2) of the Act, federal regulations at 40 CFR 131.20 require states to periodically re-examine those waters to determine if any new information has become available. That requirement is particularly important in intermittent and ephemeral waters with a regulated discharge since the presence of water can significantly influence the instream and riparian habitat and attract wildlife depending on the consistency and volume of flow, independent of the quality of that effluent. A permittee is not obligated to continue to discharge, even where instream and riparian habitat has been augmented. However, so long as that discharge exists, the permittee is obligated to ensure that the community that develops as a result of the discharge is protected consistent with federal requirements.

Subsection C(2)(b) and (c); and C(6)(a) and (b)(i)

The SWQB developed a UAA supported by its HP to determine if designated uses are supported in four unclassified stream segments in the Pecos River basin, Tularosa River closed basin and the Mimbres River closed basin. These waters are as follows:

<u>Pecos River Basin</u>
Aqua Chiquita from Rio Penasco to McEwan Canyon
Grindstone Canyon from Grindstone Reservoir to headwaters

<u>Tularosa Closed Basin</u>
San Andres Canyon

Mimbres Closed Basin
San Vicente Arroyo from Mimbres River to Maudes Canyon

The SWQB submitted its supporting assessment to EPA Region 6 for technical review pursuant to 20.6.4.15 C. NMAC on October 18, 2013. Following a technical review of the supporting UAA, EPA Region 6 provided technical approval on December 19, 2013 through its letter and supporting TSD that were provided to the SWQB.

The Region's technical approval did not constitute a final action under Sec. 303(c) of the Clean Water Act (CWA), but is an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 ((April 27, 2000)). EPA considers the submission of the amendments to 20.4.6.97 NMAC, subsections C(2)(b) and (c); and C(6)(a) and C(6)(b)(i) to constitute the state's submission and under Sec. 303(c) of the CWA. In today's action, EPA is approving the use designations described above for these waters for the reasons detailed in EPA's prior technical approval and supporting TSD.

20.6.4.98 Intermittent Waters

20.6.4.98 INTERMITTENT WATERS: All non-perennial [~~unclassified~~] surface waters of the state, except those ephemeral waters included under section 20.6.4.97 NMAC or classified in sections 20.6.4.101-899 NMAC.

A. Designated Uses: livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following site-specific criteria apply: the monthly geometric mean of E. coli bacteria 206 cfu/100 mL or less, single sample 940 cfu/100 mL or less.

20.6.4.99 Perennial Waters

20.6.4.99 PERENNIAL WATERS: All perennial [~~unclassified~~] surface waters of the state except those classified in sections 20.6.4.101-899 NMAC.

A. Designated uses: Warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria: The use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following site-specific criteria apply: the monthly geometric mean of E. coli bacteria 206 cfu/100 mL or less, single sample 940 cfu/100 mL or less.

EPA Discussion:

In its 2005 Triennial and interim revisions, the Commission clarified the presumption that CWA Sec. 101(a)(2) uses apply to all surface waters of the state. The revised language here clarifies that that presumption applies to all intermittent or perennial waters of the state that are not specifically included in 20.6.4.97 NMAC or described in Sections 20.6.4.101-899 NMAC.

The Commission removed the term "unclassified" in Sections 20.6.4.98 and 20.6.4.99 NMAC and added the term "surface" to be consistent with the phrase "surface water(s) of the state" as defined in 20.6.4.7 NMAC. The Commission has also included the phrase "or/those classified in 20.6.4.100 thru 899."

20.6.4.101 – 317 NMAC River Basins

20.6.4.101 RIO GRANDE BASIN: The main stem of the Rio Grande from the international boundary with Mexico upstream to one mile [~~below~~] downstream of Percha dam.

20.6.4.102 RIO GRANDE BASIN: The main stem of the Rio Grande from one mile [~~below~~] downstream of Percha dam upstream to Caballo dam.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, 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, except that the following segment-specific criteria apply: the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

C. Remarks: sustained flow in the Rio Grande [~~below~~] downstream of 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.

20.6.4.110 RIO GRANDE BASIN - The main stem of the Rio Grande from Angostura diversion works upstream to Cochiti dam, excluding the reaches on San Felipe, [~~Santo Domingo~~] Kewa and Cochiti pueblos.

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 [~~below~~] downstream of the town of El Rito.

20.6.4.124 RIO GRANDE BASIN: Perennial reaches of Sulphur creek from [~~its headwaters to~~] its confluence with Redondo creek upstream to its headwaters.

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 tributaries [~~below~~] downstream of Bonney canyon and perennial reaches of the Rio Felix.

20.6.4.305 CANADIAN RIVER BASIN: The main stem of the Canadian river from the headwaters of Conchas reservoir upstream to the New Mexico-Colorado line, perennial reaches of the Conchas river, the Mora river downstream from the USGS gaging station near Shoemaker, the Vermejo river downstream from Rail canyon and perennial reaches of Raton, Chicorica (except Lake Maloya and Lake Alice) and Uña de Gato creeks.

A. Designated Uses: irrigation, marginal warmwater aquatic life, livestock watering, 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) TDS 3,500 mg/L or less at flows above 10 cfs.

[20.6.4.305 NMAC - Rp 20 NMAC 6.1.2305, 10-12-00; A, 05-23-05; A, 12-01-10]

[**NOTE:** This segment was divided effective 12-01-10. The standards for Lake Alice and Lake Maloya are under 20.6.4.311 and 20.6.4.312 NMAC, respectively.]

20.6.4.317 CANADIAN RIVER BASIN: Springer lake.

A. Designated Uses: coolwater aquatic life, irrigation, primary contact, livestock watering, [and] wildlife habitat, and public water supply.

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

[20.6.4.317 NMAC - N, 07-10-12; A, 03-02-2017]

EPA Discussion:

The amendments adopted by the Commission for segments 20.6.4.101 through 317 NMAC were to correct minor grammatical errors and add hydrologic terms in descriptions; replacing the word "below" with the hydrologic term "downstream of." In addition, the amendments include the name change for Kewa Pueblo in 20.6.4.110 NMAC, and adding public water supply as a designated use to Springer Lake because it is an existing use.

The SWQB proposed upgrade the secondary contact to primary contact designated use in segments 20.6.4.103, 116, 124, 204, 206, 207, 213, 219, and 308 NMAC. However, these recommendations were rejected by the Commission, referring to but not citing specific federal regulations "…that require new and substantive information to upgrade a designated use…" in its Statement of Reasons. In contrast to this unsupported statement, Federal regulations at 40 CFR 131.20(a) require states to 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 is obligated to revise its standards consistent with these requirements. Given that the SWQB has carried out surveys of these segment and determined that primary contact is an existing use in this segment, EPA recommends that the Commission adopted the primary contact use and the applicable criteria for these waters consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.403 and 20.6.4.404 NMAC San Juan River Basin

20.6.4.403 SAN JUAN RIVER BASIN: The Animas river from its confluence with the San Juan river upstream to Estes Arroyo.

A. Designated uses: Public water supply, industrial water supply, irrigation, livestock watering, wildlife habitat, [marginal coldwater] coolwater aquatic life, and 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, except that the following segment-specific criterion applies: temperature 29°C (84.2°F) or less.

[20.6.4.403 NMAC - Rp 20 NMAC 6.1.2403, 10-12-00; A, 05-23-05; A, 12-01-10; A, 03-02-2017]

20.6.4.404 SAN JUAN RIVER BASIN - The Animas river from Estes Arroyo upstream to the ~~[New Mexico-Colorado line]~~ Southern Ute Indian tribal boundary.

A. Designated uses: ~~[coldwater]~~ Coolwater aquatic life, irrigation, livestock watering, wildlife habitat, public water supply, industrial 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 criterion applies: phosphorus (unfiltered sample) 0.l mg/L or less.

EPA Discussion:

The SWQB initially developed a UAA for the upper and lower segments of the Animas River and made a public discussion draft UAA in November 2013. Following the public comment period for the discussion draft, the SWQB requested that Region 6 review its revised public discussion draft UAA in April 2014. Region 6 provided informal comments to the SWQB later that month, followed by more formal comments on May 6, 2014. Based on those comments, the SWQB revised the document and provided a final draft UAA for the Region's technical review pursuant to 20.4.6.15 C. NMAC on July 2014. EPA Region 6 provided its technical approval on the final draft UAA on October 13, 2014.

The Region's technical approval did not constitute a final action under § 303(c) of the CWA, but is an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 (April 27, 2000)). The EPA considers the submission of the amendments to 20.4.6.403 and 404 NMAC to constitute the state's submission and under § 303(c) of the CWA. In today's action, EPA is approving the use designations described above for segments of the Animas River for the reasons detailed in the Region's previous technical approval and supporting TSD.

20.6.4.502 and 503 NMAC Gila River Basin

20.6.4.502 GILA RIVER BASIN - The main stem of the Gila river from Redrock canyon upstream to the confluence of the West Fork Gila river and East Fork Gila river and perennial reaches of tributaries to the Gila river ~~[below]~~ downstream of Mogollon creek.

A. Designated uses: industrial water supply, irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, 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, except that the following segment-specific criterion applies: 28°C (82.4°F) or less.

20.6.4.503 GILA RIVER BASIN - All perennial tributaries to the Gila river ~~[above]~~ upstream of and including Mogollon creek.

A. Designated uses: domestic water supply, 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 of 400 µS/cm or less for all perennial tributaries except West Fork Gila and tributaries thereto, specific conductance of 300 µS/cm or less; ~~[for the main stem of the Gila river above Gila hot springs and 400 µS/cm or less for other reaches;]~~ 32.2°C (90°F) or less in the east fork of the Gila river and Sapillo creek ~~[below]~~ downstream of Lake Roberts; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

EPA Discussion:

The word ‘above’ and ‘below’ have been replaced with the hydrological terms ‘upstream of’ and ‘downstream of’ in the segment description (and subparagraph B. for segment 503) respectively.

Segment 20.6.4.503 NMAC is currently designated as high quality coldwater aquatic life use (HQCW) with an associated segment-specific criterion of 300 µS/cm. The specific conductance criterion applies to “the main stem of the Gila river above Gila hot springs.” A specific conductance criterion of 400 µS/cm applies to all other reaches. However, in its review of this segment, the SWQB found that USGS maps indicate that the section of the Gila River referred to as the “main stem of the Gila River above the Gila Hot Springs” is actually the West Branch (or West Fork) Gila River. The main stem of the Gila River begins from the confluence of the West and East Forks of the Gila River, and extends downstream from the confluence.

Since specific conductance criteria are specific to the HQCW use and are segment-specific depending on the natural background in the particular surface water. The SWQB had to determine if it was appropriate to continue to apply one specific conductance criterion to the West Fork Gila, or two different specific conductance criteria, one upstream and one downstream of the influence of the Gila Hot Springs. The SWQB relied on water quality data to determine if the lower specific conductance criterion currently associated with the West Fork of the Gila could meet. The SWQB determined that the 300 µS/cm criterion should be applied to West Fork Gila and its tributaries, and that the more protective 400 µS/cm criterion applies to all other reaches.

20.6.4.803, 20.6.4.804 and 20.6.4.807 NMAC Mimbres River Basin

20.6.4.803 CLOSED BASINS: Perennial reaches of the Mimbres river downstream of the confluence with ~~[Willow Springs]~~ Allie canyon and all perennial reaches of tributaries thereto.

A. Designated uses: ~~[coldwater]~~ Coolwater 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: the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less and temperature of 30°C (86°F) or less.

20.6.4.804 CLOSED BASINS: Perennial reaches of the Mimbres river upstream of the confluence with ~~[Willow Springs canyon]~~ Allie canyon to Cooney canyon, and all perennial reaches of East Fork Mimbres (McKnight canyon) downstream of the fish barrier, and all perennial reaches thereto.

A. Designated uses: Irrigation, domestic water supply, high quality coldwater aquatic life, 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 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.

[20.6.4.804 NMAC - Rp 20 NMAC 6.1.2804, 10-12-00; A, 05-23-05; A, 12-01-10; A, 03-02-2017]

[**NOTE:** The segment covered by this section was divided effective 03-02-2017. The standards for the additional segment are covered under 20.6.4.807 NMAC.]

20.6.4.807 CLOSED BASINS: Perennial reaches of the Mimbres river upstream of Cooney canyon and all perennial reaches thereto, including perennial reaches of East Fork Mimbres river (McKnight canyon) upstream of the fish barrier.

A. Designated uses: Irrigation, domestic water supply, high quality coldwater aquatic life, 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 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.

EPA Discussion:

The SWQB initially developed a UAA for the Mimbres River in March 2014 based on the SWQB's Air-Water Temperature Correlation for New Mexico streams using corroborative survey data from prior years (NMED/SWQB, 2011). A discussion draft was posted for public comment on April 1, 2014 as part of the state's 2013 Triennial Review. Although this ended on April 30, 2014, an additional 30 days was requested on April 28, 2014 for review of the SWQB's Triennial Public Draft, which included the Mimbres UAA draft, extending the review to May 30, 2014.

The SWQB provided a final draft UAA for the Region's technical review pursuant to section 20.4.6.15 C. NMAC on July 21. 2014. The EPA provided informal comments to the SWQB on January 14, 2015 and continued discussions through informal communication. The EPA provided informal comments on January 14, 2015 and received an informal response from NMED staff on April, 13, 2015.

The supporting UAA was intended to consider the influences from varying ecological zones, ambient air temperature, and anthropogenic factors as determining factors affecting attainment of aquatic life uses in the Mimbres River. The data adequately demonstrated that the original upper segment, 20.6.4.804 NMAC should be broken into two separate segments consistent with the variation in ecological zones. The SWQB proposed that new segment, 20.6.4.807 NMAC include the upper reaches, extending down to Cooney Canyon and McKnight Canyon on the East Fork of the Mimbres. The SWQB concluded that this new segment can support a HQCW aquatic life use. The data indicated remaining portion of the original segment 20.6.4.804 NMAC should extend from Cooney Canyon and McKnight Canyon on the East Fork down to Allie Canyon (the "Middle Mimbres"). The SWQB also showed that this segment can support the original HWCW aquatic life use. The lower segment, 20.6.4.803 NMAC now includes the perennial reaches below Allie Canyon. Given the naturally high ambient water temperature in the segment, the Coolwater aquatic life use can be attained with a segment-specific temperature criterion of 30°C.

Region 6 considered all the supporting information presented in the original discussion draft and additional information provided by the SWQB and determined that the UAA was technically approvable on May 4, 2015. This technical approval did not constitute a final action under § 303(c) of the Clean Water Act (CWA), but was an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 ((April 27, 2000)). The EPA considers the current submission of the amendments to

20.4.6.803, 804 and 807 NMAC to constitute the state's submission and under § 303(c) of the CWA. The EPA is approving these coolwater aquatic life use designations and segment-specific criteria based on the prior technical approval and supporting TSD developed by EPA Region 6.

20.6.4.900 Applicable Criteria

20.6.4.900 Criteria Applicable to Existing, Designated or Attainable Uses Unless Otherwise Specified in 20.6.4.97 Through 20.6.4.899 NMAC.

A. Fish [~~Cultureand~~] Culture and water supply: Fish culture, public water supply and industrial water supply are designated uses in particular classified waters of the state where these uses are actually being realized. However, no numeric criteria apply uniquely to these uses. Water quality adequate for these uses is ensured by the general criteria and numeric criteria for bacterial quality, pH and temperature.

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 pH within the range of 6.6 to 9.0 apply to this use. The results for *E. coli* may be reported as either colony forming units (CFU) or the most probable number (MPN) depending on the analytical method used.

E. Secondary Contact: The monthly geometric mean of E. coli bacteria of 548 cfu/100 mL or MPN/100 mL and single sample of 2507 cfu/100 mL or MPN/100 mL apply to this use. The results for *E. coli* may be reported as either colony forming units (CFU) or the most probable number (MPN), depending on the analytical method used.

EPA Discussion:

In the 2012 Recreational Water Quality Criteria (RWQC), EPA recommended that states/tribes use Escherichia coli (E. coli) and enterococci as indicators of fecal contamination for fresh water and marine water, respectively. They can be enumerated using various analytical methods the defined substrate method, produces a most probable number (MPN) per volume. MPN analyses estimate the number of organisms in a sample using statistical probability tables, hence the term "most probable number."

Given the RWQC described above, Region 6 recommended that the state's update its WQS and TMDL guidance to refer to the use of both cfu and MPN. The use of more cost-effective and time efficient methods in which counts are expressed as MPN/100 ml was approved by EPA for testing ambient waters in 2003[3] and for wastewater and sewage sludge in 2007[4]. The SWQB is currently using an approved EPA method for sampling and analyzing bacteria levels in ambient water and which reports results in MPN/100 ml. The currently recommended EPA recreational or bacteria criteria for E. coli are expressed as cfu/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable E. coli[5] [6]. Based on this recommendation, the

[3] *U.S. Federal Register* - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.
[4] *U.S. Federal Register* - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.
[5] EPA, 2012: http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf
[6] USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified

Commission modified this provision to reflect the use of updated methods for monitoring, assessment and reporting.

In future amendments, EPA recommends that the SWQB propose updating its terminology to reflect that used in EPA guidance, i.e., statistical threshold value and geometric mean.

20.6.4.900 H. NMAC.

H. Aquatic Life:

(3) Marginal Coldwater: Dissolved oxygen [~~6~~] 6.0 mg/L or more, 6T3 temperature 25°C (77°F), maximum temperature 29°C (84°F) and pH within the range from 6.6 to 9.0. Where a single segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature and no 6T3 temperature applies.

(4) Coolwater: Dissolved oxygen 5.0 mg/L or more, maximum temperature 29°C (84°F) and pH within the range of 6.6 to 9.0.

(5) Warmwater: Dissolved oxygen [~~5~~] 5.0 mg/L or more, maximum temperature 32.2°C (90°F) and pH within the range of 6.6 to 9.0. Where a segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature.

(6) Marginal Warmwater: Dissolved oxygen [~~5~~] 5.0 mg/L or more, pH within the range of 6.6 to 9.0 and maximum temperature 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.

EPA Discussion:

Dissolved oxygen criteria have been revised in subparagraphs (3), (5) and (6) of 20.6.4.900 H. NMAC to show decimal places consistent with dissolved oxygen criteria for the other aquatic life designated uses. These are nonsubstantive modifications.

20.6.4.900 I.

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 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:

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membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA–821–R–02–023.

Metal	m_A	b_A	Conversion factor (CF)
Aluminum (Al)	1.3695	1.8308	
Cadmium (Cd)	0.8968	-3.5699	1.136672-[(ln hardness)(0.041838)]
Chromium (Cr) III	0.8190	3.7256	0.316
Copper (Cu)	0.9422	-1.700	0.960
Lead (Pb)	1.273	-1.460	1.46203-[(ln hardness)(0.145712)]
Manganese (Mn)	0.3331	6.4676	
Nickel (Ni)	0.8460	2.255	0.998
Silver (Ag)	1.72	-6.59	0.85
Zinc (Zn)	0.9094	0.9095	0.978

(2) Chronic aquatic life criteria for metals. The equation to calculate chronic criteria in µg/L is $\exp(m_C[\ln(\text{hardness})] + b_C)(CF)$**.** Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that 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:

Metal	[~~m_A~~] m_C	[~~b_A~~] b_C	Conversion factor (CF)
Aluminum (Al)	1.3695	0.9161	
Cadmium (Cd)	0.7647	-4.2180	1.101672-[(ln hardness)(0.041838)]
Chromium (Cr) III	0.8190	0.6848	0.860
Copper (Cu)	0.8545	-1.702	0.960
Lead (Pb)	1.273	-4.705	1.46203-[(ln hardness)(0.145712)]
Manganese (Mn)	0.3331	5.8743	
Nickel (Ni)	0.8460	0.0584	0.997
Zinc (Zn)	0.9094	0.6235	0.986

EPA Discussion:

In today's action, EPA is reaffirming its June 8, 2017 action approving the new narratives in Subsections 20.6.4.900 I. (1) and (2) NMAC. Following subsequent discussions with NMED related to this actions, EPA agrees that some clarification is needed to describe what criteria apply to differing classes of waters as a result of EPA's initial 2012 and 2017 actions.

In its April 30, 2012 action, EPA approved the hardness-based equations for aluminum for only those waters of the State within a pH range of 6.5 to 9.0, but disapproved these equations in waters where the pH is less than 6.5. The EPA stated that it will apply the 304(a) recommended 87 µg/L chronic *total recoverable* aluminum criterion in the receiving water after mixing where pH is 6.5 or less. In its subsequent June 30, 2012 amended action, EPA clarified that it would apply New Mexico's previously approved 87 µg/L chronic *dissolved* aluminum criterion to such waters.

The EPA did not approve the removal of the existing 750 ug/L acute and 87 ug/L chronic aluminum criteria from Subsection 20.6.4.900. J. (2) NMAC in its April 30th or subsequent June 8, 2012 actions. EPA stated in its April 30, 2012 letter that "*Consistent with EPA's regulations, the previously approved 304(a) criteria for aluminum are thus the applicable water quality standards for purposes of the CWA in waters where the pH is at or below 6.5*." As noted in the 2012 disapproval, as the permitting authority, EPA intended

to apply the 87 µg/L chronic dissolved aluminum criterion in waters of the State where pH is 6.5 or less to ensure protection of those aquatic/aquatic dependent species that tolerate low pH levels. However, in our 2012 action EPA did not consider that Subsection 20.6.4.900 H. (7) NMAC which prohibits the application of chronic aquatic life criteria to waters with the limited aquatic life use unless adopted on a segment-specific basis, such as Sulphur Creek. Although no chronic criteria for toxics apply to waters designated as limited aquatic life use unless adopted on a segment-specific basis as described above, given that the existing 750 ug/L acute and 87 ug/L chronic aluminum criteria remain effective for CWA purposes, the 750 ug/L acute aluminum criterion is still effective for CWA purposes in New Mexico waters, including limited aquatic life use waters.

It should be noted that EPA has recently announced the release of its draft updated aquatic life criteria for aluminum in freshwater and a corresponding public comment period. EPA is updating the aluminum criteria to better reflect the latest science. Studies have shown that three water chemistry parameters; pH, dissolved organic carbon, and hardness, can affect the toxicity of aluminum by impacting aquatic species' overall exposure to aluminum. Unlike the fixed values recommended by EPA in the 1988 document, the draft updated criteria take these three important parameters into account and provide users the flexibility to develop site-specific criteria based on a site's water chemistry. To support the development of site-specific criteria, EPA is providing lookup tables as well as an Aluminum Criteria Calculator. EPA recommends that New Mexico track that effort, and consider whether any updates to the state's aluminum criteria are warranted as a result.

20.6.4.900 I. (3) NMAC

(3) Selected values of calculated acute and chronic criteria (µg/L).

Hardness as [~~CaCO~~] $CaCO_3$, dissolved (mg/L)		Al	Cd	Cr III	Cu	Pb	Mn	Ni	Ag	Zn
25	Acute	512	0.51	180	4	14	1,881	140	0.3	45
	Chronic	205	0.17	24	3	1	1,040	16		34
30	Acute	658	0.59	210	4	17	1,999	170	0.4	54
	Chronic	263	0.19	28	3	1	1,105	19		41
40	Acute	975	0.76	270	6	24	2,200	220	0.7	70
	Chronic	391	0.23	35	4	1	1,216	24		53
50	Acute	1,324	0.91	320	7	30	2,370	260	1.0	85
	Chronic	530	0.28	42	5	1	1,309	29		65
60	Acute	1,699	1.07	370	8	37	2,519	300	1.3	101
	Chronic	681	0.31	49	6	1	1,391	34		76
70	Acute	2,099	1.22	430	10	44	2,651	350	1.7	116
	Chronic	841	0.35	55	7	2	1,465	38		88
80	Acute	2,520	1.37	470	11	51	2,772	390	2.2	131
	Chronic	1,010	0.39	62	7	2	1,531	43		99

Hardness as [~~CaCO~~] $CaCO_3$, dissolved (mg/L)		Al	Cd	Cr III	Cu	Pb	Mn	Ni	Ag	Zn
90	Acute	2,961	1.51	520	12	58	2,883	430	2.7	145
	Chronic	1,186	0.42	68	8	2	1,593	48		110
100	Acute	3,421	1.65	570	13	65	2,986	470	3.2	160
	Chronic	1,370	0.45	74	9	3	1,650	52		121
200	Acute	8,838	2.98	1,010	26	140	3,761	840	11	301
	Chronic	3,541	0.75	130	16	5	2,078	90		228
220	Acute	10,071	3.23	1,087	28	151	3,882	912	13	328
	Chronic	4,035	0.80	141	18	6	2,145	101		248
300	Acute	[~~10,071~~]	4.21	1,400	38	210	4,305	1190	21	435
	Chronic	[~~4,035~~]	1.00	180	23	8	2,379	130		329
400 and above	Acute	[~~10,071~~]	5.38	1,770	50	280	4,738	1510	35	564
	Chronic	[~~4,035~~]	1.22	230	29	11	2,618	170		428

EPA Discussion:
The table in 20.6.4.900 I. (3) has been revised, adding the subscript ’3’ to the chemical nomenclature for hardness, and to include the missing calculated values for metals at hardness of 220 mg/L $CaCO_3$. These are nonsubstantive amendments.

20.6.4.900 J. (1) and (2) NMAC

J. Use-Specific Numeric criteria.

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

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

~~**(b)** Where the letter “b” is indicated in a cell, the criterion can be referenced in Subsection C of 20.6.4.900 NMAC.~~

~~**(c)** Criteria are in µg/L unless otherwise indicated.~~

~~**(d)** Abbreviations are as follows: CAS - chemical abstracts service (see definition for “CAS number” in 20.6.4.7 NMAC); DWS - domestic water supply; Irr - irrigation; LW - livestock watering; WH - wildlife habitat; HH-OO - human health-organism only; C - cancer-causing; P - persistent.~~

~~**(e)** The criteria are based on analysis of an unfiltered sample unless otherwise indicated. The acute and chronic aquatic life criteria for aluminum are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department.~~

~~**(f)** The criteria listed under human health-organism only (HH-OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms.~~

~~(g) The dioxin criteria apply to the sum of the dioxin toxicity equivalents expressed as 2,3,7,8-TCDD dioxin.~~

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

~~(2)]~~ **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.

Pollutant	**CAS Number**	**DWS**	**Irr/Irr Storage**	**LW**	**WH**	**Aquatic Life**			**Type**
						Acute	Chronic	HH-OO	
Aluminum, dissolved	7429-90-5		5,000						
Aluminum, total recoverable	7429-90-5					a	a		
Antimony, dissolved	7440-36-0	6						640	P
Arsenic, dissolved	7440-38-2	10	100	200		340	150	9.0	C,P
Asbestos	1332-21-4	7,000,000 fibers/L							
Barium, dissolved	7440-39-3	2,000							
Beryllium, dissolved	7440-41-7	4							
Boron, dissolved	7440-42-8		750	5,000					
Cadmium, dissolved	7440-43-9	5	10	50		a	a		
Chlorine residual	7782-50-5				11	19	11		
Chromium III, dissolved	16065-83-1					a	a		
Chromium VI, dissolved	18540-29-9					16	11		
Chromium, dissolved	7440-47-3	100	100	1,000					
Cobalt, dissolved	7440-48-4		50	1,000					
Copper, dissolved	7440-50-8	1300	200	500		a	a		
Cyanide, total recoverable	57-12-5	200			5.2	22.0	5.2	140	
Lead, dissolved	7439-92-1	15	5,000	100		a	a		
Manganese, dissolved	7439-96-5					a	a		
Mercury	7439-97-6	2		10	0.77				
Mercury, dissolved	7439-97-6					1.4	0.77		
Methylmercury	22967-92-6							0.3 mg/kg in fish tissue	P
Molybdenum, dissolved	7439-98-7		1,000						
Molybdenum, total recoverable	7439-98-7					7,920	1,895		
Nickel, dissolved	7440-02-0	700				a	a	4,600	P
Nitrate as N		10 mg/L							
Nitrite + Nitrate				132 mg/L					
Selenium, dissolved	7782-49-2	50	b	50				4,200	P
Selenium, total recoverable	7782-49-2				5.0	20.0	5.0		
Silver, dissolved	7440-22-4					a			
Thallium, dissolved	7440-28-0	2						0.47	P
Uranium, dissolved	7440-61-1	30							
Vanadium, dissolved	7440-62-2		100	100					
Zinc, dissolved	7440-66-6	10,500	2,000	25,000		a	a	26,000	P
Adjusted gross alpha		15 pCi/L		15 pCi/L					

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Radium 226 + Radium 228		5 pCi/L		30.0 pCi/L					
Strontium 90		8 pCi/L							
Tritium		20,000 pCi/L		20,000 pCi/L					
Acenaphthene	83-32-9	2,100						990	
Acrolein	107-02-8	18						9	
Acrylonitrile	107-13-1	0.65						2.5	C
Aldrin	309-00-2	0.021				3.0		0.00050	C,P
Anthracene	120-12-7	10,500						40,000	
Benzene	71-43-2	5						510	C
Benzidine	92-87-5	0.0015						0.0020	C
~~[Benzoaanthracene]~~ Benzo(a)anthracene	56-55-3	0.048						0.18	C
~~[Benzoapyrene]~~ Benzo(a)pyrene	50-32-8	0.2						0.18	C,P
Benzo(b)fluoranthene	205-99-2	0.048						0.18	C
Benzo(k)fluoranthene	207-08-9	0.048						0.18	C
alpha-BHC	319-84-6	0.056						0.049	C
beta-BHC	319-85-7	0.091						0.17	C
Gamma-BHC (Lindane)	58-89-9	0.20				0.95		1.8	
Bis(2-chloroethyl) ether	111-44-4	0.30						5.3	C
Bis(2-chloroisopropyl) ether	108-60-1	1,400						65,000	
Bis(2-ethylhexyl) phthalate	~~[117817]~~ 117-81-7	6						22	C
Bromoform	75-25-2	44						1,400	C
Butylbenzyl phthalate	85-68-7	7,000						1,900	
Carbon tetrachloride	56-23-5	5						16	C
Chlordane	57-74-9	2				2.4	0.0043	0.0081	C,P
Chlorobenzene	108-90-7	100						1,600	
Chlorodibromomethane	124-48-1	4.2						130	C
Chloroform	67-66-3	57						4,700	C
2-Chloronaphthalene	91-58-7	2,800						1,600	
2-Chlorophenol	95-57-8	175						150	
Chrysene	218-01-9	0.048						0.18	C
Diazinon	333-41-5					0.17	0.17		
4,4'-DDT and derivatives		1.0			0.001	1.1	0.001	0.0022	C,P
Dibenzo(a,h)anthracene	53-70-3	0.048						0.18	C
Dibutyl phthalate	84-74-2	3,500						4,500	
1,2-Dichlorobenzene	95-50-1	600						1,300	
1,3-Dichlorobenzene	541-73-1	469						960	
1,4-Dichlorobenzene	106-46-7	75						190	
3,3'-Dichlorobenzidine	91-94-1	0.78						0.28	C
Dichlorobromomethane	75-27-4	5.6						170	C
1,2-Dichloroethane	107-06-2	5						370	C
1,1-Dichloroethylene	75-35-4	7						7,100	C
2,4-Dichlorophenol	120-83-2	105						290	
1,2-Dichloropropane	78-87-5	5.0						150	C
1,3-Dichloropropene	542-75-6	3.5						210	C
Dieldrin	60-57-1	0.022				0.24	0.056	0.00054	C,P

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Diethyl phthalate	84-66-2	28,000						44,000	
Dimethyl phthalate	131-11-3	350,000						1,100,000	
2,4-Dimethylphenol	105-67-9	700						850	
2,4-Dinitrophenol	51-28-5	70						5,300	
2,4-Dinitrotoluene	121-14-2	1.1						34	C
Dioxin		3.0E-05						5.1E-08	C,P
1,2-Diphenylhydrazine	122-66-7	0.44						2.0	C
alpha-Endosulfan	959-98-8	62				0.22	0.056	89	
beta-Endosulfan	33213-65-9	62				0.22	0.056	89	
Endosulfan sulfate	1031-07-8	62						89	
Endrin	72-20-8	2				0.086	0.036	0.060	
Endrin aldehyde	7421-93-4	10.5						0.30	
Ethylbenzene	100-41-4	700						2,100	
Fluoranthene	206-44-0	1,400						140	
Fluorene	86-73-7	1,400						5,300	
Heptachlor	76-44-8	0.40				0.52	0.0038	0.00079	C
Heptachlor epoxide	1024-57-3	0.20				0.52	0.0038	0.00039	C
Hexachlorobenzene	118-74-1	1						0.0029	C,P
Hexachlorobutadiene	87-68-3	4.5						180	C
Hexachlorocyclopen-tadiene	77-47-4	50						1,100	
Hexachloroethane	67-72-1	25						33	C
Ideno(1,2,3-cd)pyrene	193-39-5	0.048						0.18	C
Isophorone	78-59-1	368						9,600	C
Methyl bromide	74-83-9	49						1,500	
2-Methyl-4,6-dinitrophenol	534-52-1	14						280	
Methylene chloride	75-09-2	5						5,900	C
Nitrobenzene	98-95-3	18						690	
N-Nitrosodimethylamine	62-75-9	0.0069						30	C
N-Nitrosodi-n-propylamine	621-64-7	0.050						5.1	C
N-Nitrosodiphenylamine	86-30-6	71						60	C
Nonylphenol	84852-15-3					28	6.6		
Polychlorinated ~~[Byphenyls]~~ Biphenyls (PCBs)	1336-36-3	0.50			0.014	2	0.014	0.00064	C,P
Pentachlorophenol	87-86-5	1.0				19	15	30	C
Phenol	108-95-2	10,500						860,000	
Pyrene	129-00-0	1,050						4,000	
1,1,2,2-Tetrachloroethane	79-34-5	1.8						40	C
Tetrachloroethylene	127-18-4	5						33	C,P
Toluene	108-88-3	1,000						15,000	
Toxaphene	8001-35-2	3				0.73	0.0002	0.0028	C
1,2-Trans-dichloroethylene	156-60-5	100						10,000	
1,2,4-Trichlorobenzene	120-82-1	70						70	
1,1,1-Trichloroethane	71-55-6	200							
1,1,2-Trichloroethane	79-00-5	5						160	C
Trichloroethylene	79-01-6	5						300	C
2,4,6-Trichlorophenol	88-06-2	32						24	C
Vinyl chloride	75-01-4	2						24	C

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

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

(b) Where the letter "b" is indicated in a cell, the criterion can be referenced in Subsection C of 20.6.4.900 NMAC.

(c) Criteria are in µg/L unless otherwise indicated.

(d) Abbreviations are as follows: CAS - chemical abstracts service (see definition for "CAS number" in 20.6.4.7 NMAC); DWS - domestic water supply; Irr/Irr storage- irrigation or irrigation storage; LW - livestock watering; WH - wildlife habitat; HH-OO - human health-organism only; C - cancer-causing; P - persistent.

(e) The criteria are based on analysis of an unfiltered sample unless otherwise indicated. The acute and chronic aquatic life criteria for aluminum are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department.

(f) The criteria listed under human health-organism only (HH-OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms.

(g) The dioxin criteria apply to the sum of the dioxin toxicity equivalents expressed as 2,3,7,8-TCDD dioxin.

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

EPA Discussion:

The order of 20.6.4.900 J. (1) and (2) NMAC have been transposed so the table of numeric criteria precedes the explanatory notes. There are corrections to CAS number and the spelling of some pollutants.

Subparagraph 20.6.4.900 J. (1) NMAC now states that criteria for metals in this table are based on the total sample fraction unless otherwise specified (e.g., dissolved). Although unclear, EPA interprets the term "total sample fraction" to mean an unfiltered water column sample that is the sum of the dissolved fraction and the particulate fraction of the metal in a sample. This is in contrast to the "dissolved" fraction which is defined as that which passes through a 0.45 µm filter (USGS Water Resources Glossaries, Water Resources Data – Definition of Terms at http://water.usgs.gov/glossaries.html).

Consistent with the definitions in 20.6.4.7 I. (5) NMAC, the irrigation/irrigation storage designated use (e.g., Irr/Irr Storage) is added to the table column headings in 20.6.4.900 J. (2) NMAC. Also, a hyphen has been added to the Chemical Abstracts Service registry number (CAS number) for Bis(2-ethylhexyl) phthalate to correct a typographical error in the table as well. These are considered nonsubstantive changes.

Please note that as described in the discussion in the prior section, EPA did not approve the removal of the existing 750 ug/L acute and 87 ug/L chronic aluminum criteria from Subsection 20.6.4.900. J. (2) NMAC in its April 30th or subsequent June 8, 2012 actions.

20.6.4.900 L.

L. Chronic aquatic life criteria for total ammonia are dependent on pH, temperature and whether fish in early life stages are present or absent. The criteria are based on analysis of unfiltered samples and are calculated according to the equations in Paragraphs (1) and (2) of this subsection. For temperatures from below 0 to 14°C, the criteria for [~~0°C~~] 14°C apply; for temperatures above 30°C, the criteria for 30°C apply. For pH values below 6.5, the criteria for 6.5 apply; for pH values above 9.0, the criteria for 9.0 apply.

(1) Chronic aquatic life criteria for total ammonia when fish early life stages are present.

(a) The equation to calculate chronic criteria in mg/L as N is:

$$((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688}))) \times MIN (2.85, 1.45 \times 10^{0.028 \times (25-T)})$$

(b) Selected values of calculated chronic criteria in mg/L as N:

pH	Temperature (°C)										
	[~~0 and below~~]	14 and below	15	16	18	20	22	24	26	28	30 and above
6.5 and below	[~~6.67~~]	6.67	6.46	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	[~~6.57~~]	6.57	6.36	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	[~~6.44~~]	6.44	6.25	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	[~~6.29~~]	6.29	6.10	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	[~~6.12~~]	6.12	5.93	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	[~~5.91~~]	5.91	5.73	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	[~~5.67~~]	5.67	5.49	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	[~~5.39~~]	5.39	5.22	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	[~~5.08~~]	5.08	4.92	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	[~~4.73~~]	4.73	4.59	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	[~~4.36~~]	4.36	4.23	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	[~~3.98~~]	3.98	3.85	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	[~~3.58~~]	3.58	3.47	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	[~~3.18~~]	3.18	3.09	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	[~~2.80~~]	2.80	2.71	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	[~~2.43~~]	2.43	2.36	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	[~~2.10~~]	2.10	2.03	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	[~~1.79~~]	1.79	1.74	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	[~~1.52~~]	1.52	1.48	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	[~~1.29~~]	1.29	1.25	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	[~~1.09~~]	1.09	1.06	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	[~~0.920~~]	0.920	0.892	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	[~~0.778~~]	0.778	0.754	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	[~~0.661~~]	0.661	0.641	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	[~~0.565~~]	0.565	0.548	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0 and above	[~~0.486~~]	0.486	0.471	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

(2) Chronic aquatic life criteria for total ammonia when fish early life stages are absent.

(a) The equation to calculate chronic criteria in mg/L as N is:

$$((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688}))) \times 1.45 \times 10^{0.028 \times (25-MAX(T,7))}$$

(b) Selected values of calculated chronic criteria in mg/L as N:

pH	Temperature (°C)									
	[~~0 and below~~]	7 and below	8	9	10	11	12	13	14	15 and above
6.5 and below	[~~10.8~~]	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46
6.6	[~~10.7~~]	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36
6.7	[~~10.5~~]	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25
6.8	[~~10.2~~]	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10
6.9	[~~9.93~~]	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93
7.0	[~~9.60~~]	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73
7.1	[~~9.20~~]	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49
7.2	[~~8.75~~]	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22
7.3	[~~8.24~~]	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92
7.4	[~~7.69~~]	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59
7.5	[~~7.09~~]	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23
7.6	[~~6.46~~]	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85
7.7	[~~5.81~~]	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47
7.8	[~~5.17~~]	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09
7.9	[~~4.54~~]	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71
8.0	[~~3.95~~]	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36
8.1	[~~3.41~~]	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03
8.2	[~~2.91~~]	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74
8.3	[~~2.47~~]	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48
8.4	[~~2.09~~]	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25
8.5	[~~1.77~~]	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06
8.6	[~~1.49~~]	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892
8.7	[~~1.26~~]	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754
8.8	[~~1.07~~]	1.07	1.01	0.944	0.855	0.829	0.778	0.729	0.684	0.641
8.9	[~~0.917~~]	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548
9.0 and above	[~~0.790~~]	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471
At 15ºC and above, the criterion for fish early life stages absent is the same as the criterion for fish early life stages present (refer to table in Paragraph (1) of this subsection).										

EPA Discussion:

In tables of Subparagraphs 20.6.4.900.L (1) (b) and (2) (b) repeat the same calculated values in the first column. The Commission deleted the unnecessary first column and modified the heading on the adjacent column in each table to include the values resulting from temperature calculations in both columns.

20.6.4.901 Publication References

H. Colorado river basin salinity control forum. [~~2002~~] 2014. *[~~2002~~]2014 Review, water quality standards for salinity, Colorado river system.* Phoenix, Arizona. 99 p.

EPA Discussion:

The Commission has revised the reference in 20.6.4.901 H. NMAC, updating the reference to the 2014 version of the *Review, Water Quality Standards for Salinity, Colorado River System*. Given that the basin report is updated on a triennial basis, the Commission referenced the most recent update available. The Colorado Basin Salinity

Forum initiated its *2017 Review, Water Quality Standards for Salinity, Colorado River System* in June 2016. The final is not expected until its fall 2017 meeting.

III. New or Revised Provisions the EPA is Not Acting On

20.6.4.16 Planned Use of a Piscicide

20.6.4.16 PLANNED USE OF A PISCICIDE: The use of a piscicide registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. Section 136 *et seq*., and under the New Mexico Pesticide Control Act (NMPCA), Section 76-4-1 *et seq*. NMSA 1978 (1973) in a surface water of the state, shall not be a violation of Subsection F of 20.6.4.13 NMAC when such use is covered by a federal national pollutant discharge elimination system (NPDES) permit or has been approved by the commission under procedures provided in this section. The use of a piscicide which is covered by a NPDES permit shall require no further review by the commission and the person whose application is covered by the NPDES permit shall meet the additional notification and monitoring requirements outlined in Subsection G of 20.6.4.16 NMAC. The commission may approve the reasonable use of a piscicide under this section if the proposed use is not covered by a NPDES permit to further a Clean Water Act objective to restore and maintain the physical or biological integrity of surface waters of the state, including restoration of native species.

A. Any person seeking commission approval of the use of a piscicide not covered by a NPDES permit shall file a written petition concurrently with the commission and the surface water bureau of the department. The petition shall contain, at a minimum, the following information:

(1) petitioner's name and address;

(2) identity of the piscicide and the period of time (not to exceed five years) or number of applications for which approval is requested;

(3) documentation of registration under FIFRA and NMPCA and certification that the petitioner intends to use the piscicide according to the label directions, for its intended function;

(4) target and potential non-target species in the treated waters and adjacent riparian area, including threatened or endangered species;

(5) potential environmental consequences to the treated waters and the adjacent riparian area, and protocols for limiting such impacts;

(6) surface water of the state proposed for treatment;

(7) results of pre-treatment survey;

(8) evaluation of available alternatives and justification for selecting piscicide use;

(9) documentation of notice requesting public comment on the proposed use within a 30-day period, including information as described in Paragraphs (1), (2) and (6) of Subsection A of 20.6.4.16 NMAC, provided to:

(a) local political subdivisions;

(b) local water planning entities;

(c) local conservancy and irrigation districts; and

(d) local media outlets, except that the petitioner shall only be required to publish notice in a newspaper of circulation in the locality affected by the proposed use.

(10) copies of public comments received in response to the publication of notice and the petitioner's responses to public comments received;

[~~**(9)**~~] **(11)** post-treatment assessment monitoring protocol; and

[~~**(10)**~~] **(12)** any other information required by the commission.

B. Within [~~thirty~~] 30 days of receipt of the petition, the department shall review the petition and file a recommendation with the commission to grant, grant with conditions or deny the petition. The recommendation shall include reasons, and a copy shall be sent to the petitioner by certified mail.

C. [~~The commission shall review the petition and the department's recommendation and shall within 90 days of receipt of the department's recommendation hold a public hearing in the locality affected by the proposed use in accordance with Adjudicatory Procedures, 20.1.3 NMAC. In addition to~~

~~the public notice requirements in Adjudicatory Procedures, 20.1.3 NMAC, the petitioner shall provide written notice to:~~

~~**(1)** local political subdivisions;~~

~~**(2)** local water planning entities;~~

~~**(3)** local conservancy and irrigation districts; and~~

~~**(4)** local media outlets, except that the petitioner shall only be required to publish notice in a newspaper of circulation in the locality affected by the proposed use.~~] The commission shall review the petition, the public comments received under Paragraphs (9) and (10) of Subsection A of 20.6.4.16 NMAC, the petitioner's responses to public comments and the department's technical recommendations for the petition. A public hearing shall be held if the commission determines there is substantial public interest. The commission shall notify the petitioner and those commenting on the petition of the decision whether to hold a hearing and the reasons therefore in writing.

D. If the commission determines there is substantial public interest a public hearing shall be held within 90 days of receipt of the department's recommendation in the locality affected by the proposed use in accordance with 20.1.3 NMAC, Adjudicatory Procedures - Water Quality Control Commission. Notice of the hearing shall be given in writing by the petitioner to individuals listed under Subsection A of 20.6.4.16 NMAC as well as to individuals who provided public comment under that subsection at least 30 days prior to the hearing.

[~~**D.**~~] **E.** In a hearing provided for in this section or, if no hearing is held, in a commission meeting, the registration of a piscicide under FIFRA and NMPCA shall provide a rebuttable presumption that the determinations of the EPA Administrator in registering the piscicide, as outlined in 7 U.S.C. Section 136a(c)(5), are valid. For purposes of this Section the rebuttable presumptions regarding the piscicide include:

(1) Its composition is such as to warrant the proposed claims for it;

(2) Its labeling and other material submitted for registration comply with the requirements of FIFRA and NMPCA;

(3) It will perform its intended function without unreasonable adverse effects on the environment; and

(4) When used in accordance with all FIFRA label requirements it will not generally cause unreasonable adverse effects on the environment.

(5) "Unreasonable adverse effects on the environment" has the meaning provided in FIFRA, 7 U.S.C. Section 136(bb): "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide."

[~~**E.**~~] **F.** After a public hearing, or commission meeting if no hearing is held, the commission may grant the petition in whole or in part, may grant the petition subject to conditions, or may deny the petition. In granting any petition in whole or part or subject to conditions, the commission shall require the petitioner to implement post-treatment assessment monitoring and provide notice to the public in the immediate and near downstream vicinity of the application prior to and during the application.

G. Any person whose application is covered by a NPDES permit shall provide written notice to local entities as described in Subsection A of 20.6.4.16 NMAC and implement post-treatment assessment monitoring within the application area as described in Subsection F of 20.6.4.16 NMAC.

EPA Discussion:

The Commission initially adopted a provision for piscicide application to address species management and restoration activities primarily being carried out by the New Mexico Department of Game and Fish (NMDGF) in its 2000 triennial revisions, EPA approved that provision in January, 2001.

The provision was revised to streamline processes during New Mexico's 2005 triennial revisions. In its 2006 action, EPA explained that the revised provision was not intended to and did not create a regulatory requirement, but established a voluntary process by which a proposed piscicide applicator may obtain "safe harbor" from direct enforcement of the State's toxics criteria. The application of piscicides in accordance with FIFRA

requirements is not subject to the regulatory requirements of the CWA because properly used piscicides are not "pollutants" as defined at CWA § 502(6). EPA considered the provision to be a "State only" process and not a WQS requiring EPA approval under the CWA § 303(c). Although not obligated to take action on the revised provision, EPA considered the provision to be consistent with the CWA objective of restoring and maintaining the biological integrity of the nation's waters as the state works to remove non-native species that may adversely affect native and threatened and endangered species in the State.

In 2007, EPA received petitions for review of the 2006 Aquatic Pesticides rule from both environmental and industry groups challenging EPA's past operating approach in which pesticides legally registered under The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for application to or near aquatic environments are not subject to NPDES permit requirements. In 2009, the U.S. Sixth Circuit Court of Appeals held in *National Cotton Council, et al, v. EPA*, that the final rule was not a reasonable interpretation of the CWA and vacated the Aquatic Pesticides rule. The court held that CWA permits are required for all biological pesticide applications and chemical pesticide applications. In response to the court's 2009 decision in *National Cotton Council, et al, v. EPA, the Agency* finalized a rule in 2013 removing language from its NPDES regulations that exempted pesticide operators from needing a permit for discharging pesticides to waters of the U.S. In that rule, EPA issued its Pesticide General Permit (PGP) that would provide coverage for pesticide operators.

As a result of EPA's 2013 rule, some applicators like NMGF are required to have a CWA permit and may apply for coverage under EPA's NPDES PGP in addition to requirements that apply under the state's rules. To avoid duplication in meeting federal requirements resulting from the 2013 federal rule and state requirements, the Commission amended the provision to include an exemption for those entities covered under EPA's NPDES permit program. Along those lines, in those instances where an applicator does not have coverage under an EPA NPDES permit, the amendments require compliance with all aspects of the state's provisions.

Although this amended provision has been retained in the state's WQS the provision is not intended to and does not create a regulatory requirement. Consistent with its 2006 action, EPA has determined that the amended provision represents state implementation procedures for the use of a piscicide for restoration efforts, but is not a WQS subject to review under CWA Sec. 303(c).

20.6.4.808 and 809 Closed Basins and Water Effect Ratios (WER)

20.6.4.808 CLOSED BASINS: Perennial and intermittent watercourses within Smelter Tailing Soils Investigation Unit lands at the Chino mines company, excluding those ephemeral waters listed in 20.6.4.809 NMAC and including, but not limited to. the mainstem of Lampbright draw, beginning at the confluence of Lampbright Draw with Rustler canyon, all tributaries that originate west of Lampbright draw to the intersection of Lampbright draw with U.S. 180, and all tributaries of Whitewater creek that originate east of Whitewater creek from the confluence of Whitewater creek with Bayard canyon downstream to the intersection of Whitewater creek with U.S. 180.

A. Designated uses: Warmwater aquatic life, 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: the acute and chronic aquatic life criteria for copper set forth in Subsection I of 20.6.4.900 NMAC shall be determined by multiplying that criteria by the water effect ratio ("WER") adjustment expressed by the following equation:

$$WER = \frac{[10^{0.588+(0.703 \times \log DOC)+(0.395 \times \log Alkalinity)}] \times (\frac{100}{Hardness})^{0.9422}}{19.31}$$

For purposes of this section, dissolved organic carbon (DOC) is expressed in units of milligrams carbon per liter or mg C/L; alkalinity is expressed in units of mg/L as $CaCO_3$, and hardness is expressed in units of mg/L as $CaCO_3$. In waters that contain alkalinity concentrations greater than 250 mg/L, a value of 250 mg/L shall be used in the equation. In waters that contain DOC concentrations greater than 16 mg C/L, a value of 16 mg C/L shall be used in the equation. In waters that contain hardness concentrations greater than 400 mg/L, a value of 400 mg/L shall be used in the equation. The alkalinity, hardness and DOC concentrations used to calculate the WER value are those measured in the subject water sample. [20.6.4.808 NMAC - N, 03-02-2017]

20.6.4. 809 CLOSED BASINS: Ephemeral watercourses within Smelter Tailing Soils Investigation Unit lands at the Chino mines company, limited to Chino mines property subwatershed drainage A and tributaries thereof, Chino mines property subwatershed drainage B and tributaries thereof (excluding the northwest tributary containing Ash spring and the Chiricahua Leopard Frog critical habitat transect); Chino mines property subwatershed drainage C and tributaries thereof (excluding reaches containing Bolton spring, the Chiricahua Leopard Frog critical habitat transect and all reaches in subwatershed C that are upstream of the Chiricahua Leopard Frog critical habitat); subwatershed drainage D and tributaries thereof (drainages D-1, D-2 and D-3, excluding the southeast tributary in drainage D1 that contains Brown spring) and subwatershed drainage E and all tributaries thereof (drainages E-1, E-2 and E-3).

A. Designated uses: Limited 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, except that the following segment-specific criteria apply: the acute aquatic life criteria for copper set forth in Subsection I of 20.6.4.900 NMAC shall be determined by multiplying that criteria by the water effect ratio ("WER") adjustment expressed by the following equation:

$$WER = \frac{[10^{0.588+(0.703 \times \log DOC)+(0.395 \times \log Alkalinity)}] \times (\frac{100}{Hardness})^{0.9422}}{19.31}$$

For purposes of this section, dissolved organic carbon (DOC) is expressed in units of milligrams carbon per liter or mg C/L; alkalinity is expressed in units of mg/L as $CaCO_3$, and hardness is expressed in units of mg/L as $CaCO_3$. In waters that contain alkalinity concentrations greater than 250 mg/L, a value of 250 mg/L shall be used in the equation. In waters that contain DOC concentrations greater than 16 mg C/L, a value of 16 mg C/L shall be used in the equation. In waters that contain hardness concentrations greater than 400 mg/L, a value of 400 mg/L shall be used in the equation. The alkalinity, hardness and DOC concentrations used to calculate the WER value are those measured in the subject water sample.

EPA Discussion:

Review of the initial and revised Chino Reports - Designated Use Modifications:

The amendments described in 20.6.4.808-809 NMAC are based on a 3rd party proposal developed by Freeport-McMoRan/Chino Mines Company ("Chino Mines") supported by

a report entitled "Application of the Hydrology Protocol to Smelter Tailings Soils Investigation Unit (STSIU) Drainages" (Chino report). The SWQB submitted the Chino report to EPA Region 6 for review and technical approval as a UAA pursuant to 20.6.4.15. C. and D. NMAC on June 26, 2013 to support designated use and associated criteria downgrades in five subwatersheds contained in the area that drains the STSIU. The EPA did not technically approve the proposed designated use attainment conclusions contained in the Chino report as detailed in its letter from Russell Nelson to Kristine Pintado dated June 26, 2014.

As discussed in the June 26, 2014 letter, EPA determined the Chino report relied on the procedures outlined in the SWQB's Hydrology Protocol (HP), but did not fully assess the factors necessary to demonstrate that a use is unattainable under 40 CFR 131.10(g) or fully "assess the physical, chemical, biological, economic or other factors affecting the attainment of a use" as required by 20.6.4.15. B. The SWQB's HP explains that it was specifically developed to generate information on the hydrology of a given stream or river to be used to provide technical support for a UAA (20.6.14. C. NMAC); but also states that "it cannot be used in place of the UAA." The limited information provided in the HP-based Chino report was a significant concern given that the Chino Mines waters are spread across five subwatersheds in a large and complex active mine site.

Based on a thorough review of the initial Chino report, EPA determined that the report relied primarily on the SWQB's HP assessment guidance while deviating from specific recommendations in the HP concerning assessment conditions. The limited temporal and spatial focus of the assessments to only the STSIU waters despite potential physical influences from a large and complex active mine site raised significant questions concerning the validity of the Chino report's recommendations. The potential impacts on subsurface and surface waters from past and ongoing mining activities indicate that a comprehensive UAA was needed. The EPA also raised question concerning the prevailing climactic conditions during field assessments and whether those conditions were appropriate to determine whether the STSIU waters are or are not naturally ephemeral.

The Region's decision to not technically approve the Chino report/UAA did not constitute a final action by EPA under § 303(c) of the CWA, but an interim action as described in the state's standards at 20.6.4.15 C. NMAC. That section provides that if a UAA based on the SWQB's HP demonstrates to the SWQB that 101(a)(2) uses are not attainable in an ephemeral water body, the SWQB may proceed by submitting the UAA to EPA for technical approval. If technical approval is granted, the water shall be subject to 20.6.4.97. NMAC.

Based on EPA's concerns as relayed to the SWQB Chino Mines revised the report and the SWQB submitted the revised report to EPA for review in October 2014. The EPA found very little difference between the original and revised reports and determined that the same fundamental questions remained unanswered. Consequently, EPA again determined that it could not technically approve the report. Nevertheless, the SWQB recommended the Commission approve the 2014 revised Chino report/UAA and

proposed amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC. The Commission adopted the proposed amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC and submitted then to EPA for review pursuant to CWA § 303(c) and 40 CFR 131.20.

This action appears to be counter to the requirements of 20.6.4.15 C. NMAC, which provides that EPA technical approval is necessary before the state incorporates waters into 20.6.4.97. NMAC. EPA continues to have questions concerning the Chino Report/UAA submitted as support for the downgraded use designations for the STSIU waters at 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC., As a result, EPA is taking no action on the proposed amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC and 20.6.4.808 and 809 NMAC at this time. To assist the state, EPA provides the following comments and recommendations concerning the information necessary to support these designated use changes:

Hydrologic conditions

The Chino Mines are located at a transition from woodlands to Chihuahuan Desert Grasslands (Level IV Ecoregion). These desert grasslands are a semi-arid region that receives approximately 16 inches of precipitation a year. They are water-limited ecosystems but are defined by highly variable seasonal and interannual precipitation, high rates of potential evapotranspiration, and pulsed precipitation events that drive biotic activity until available water is depleted (Noy - Meir, 1973; Reynolds et al., 2004; Collins et al., 2008). These physical characteristics mean that it is possible for the STSIU waters to be naturally ephemeral. However, one of EPA's primary concerns has been the climactic conditions that existed at the time the STSIU waters were assessed, and whether an accurate hydrologic assessment was made under the prevailing severe to extremely dry conditions.

Both the timing and methods used during field assessments are critical to accurately determining the prevailing climactic conditions that existed. The SWQB's HP itself notes that spatial and temporal variations (temporal and special differences; flow persistence and volume) in stream attributes occur within and among stream systems. These changes can be related to seasonal precipitation and evapotranspiration patterns, as well as influenced by recent weather and interannual climate variability. In discussing drought conditions, the HP strongly recommends that field evaluations be conducted outside of drought conditions whenever possible. However, the field assessments for the Chino report were performed on June 12 - 15, 2011. The National Oceanographic and Atmospheric Administration (NOAA) National Climatic Data Center through the U.S. Drought Monitor (NDMC 2011) reported that the first five months of 2011 had been the driest start to any year on record for New Mexico and that the area was under exceptional drought conditions, the most severe on its scale.

The HP recommendations are limited to the use of the Standardized Precipitation Index (SPI) to assess drought conditions. The SPI is a 12-month precipitation probability index that can be tied to groundwater and reservoir storage. However, limitations of precipitation data, including the accuracy of measurements and number of gauging

stations can affect the SPI's accuracy. Only a single USGS gauging station north of the mine is identified in the Report. The SPI lacks the ability to identify regions with a greater tendency for droughts because it does not consider temperature and evapotranspiration, both important characteristics of the grasslands Chino Mines lies in.

Given the concerns with the SPI, EPA looked at data from the Standardized Precipitation Evapotranspiration Index (SPEI), which is more sensitive to conditions in semi-arid to arid landscapes. The SPEI is an extension of the SPI and is designed to take into account both precipitation and evapotranspiration in determining drought. Unlike the SPI, the SPEI captures the impact of increased temperatures on water demand. Like the SPI, the SPEI can be calculated on a range of timescales from 1-48 months (NCAR 2015). The HP defines drought conditions as any time the SPI is less than -1.5, indicating severely to extremely dry conditions (NDMC 1995). If the 12-month SPI is -1.5 or less, indicating severe to extremely dry conditions, the HP strongly recommends that field evaluations be conducted at another time. Although the Chino report noted the 12-month SPI for the Chino Mines Site was -1.1, which indicates moderate drought, the 12-month SPEI, using the Global Drought Monitor database, indicates that during field sampling, the area around Chino Mines was at -1.68, in extreme drought conditions. This raises questions as to whether the Chino Mines field evaluations should have been carried out at an alternate time, or at least should have been supplemented with additional (non-drought) field evaluations.

The EPA also looked at the Palmer Drought Severity Index (PDSI) and Palmer Z Index Short-Term Drought Conditions index (Palmer 1965). The PDSI uses readily available temperature and precipitation data to estimate relative dryness. It is a standardized index that spans -10 (dry) to +10 (wet). It uses temperature data and a physical water balance model, which allows it to capture the basic effect of drought through changes in potential evapotranspiration. It has been reasonably successful at quantifying long-term drought. The Palmer Z Index responds to short-term conditions and is typically calculated for much shorter timescales, enabling it to identify rapidly developing drought conditions. It is useful for comparing current periods to other known drought periods. It can also be used to determine the end of a drought period, where it can be used to determine how much moisture is needed to reach the near normal category, as defined by Palmer.

Although there are temporal differences, the PDSI and Palmer Z are water balance indices based on moisture demand (evapotranspiration driven by temperature) and precipitation, which are especially relevant in semi-arid and drought-prone regions like that surrounding the Chino Mines. The PDSI indicated that the area was in extreme drought (-4.00 and below) for the time period May 2010 – 2011, encompassing the mid-June 2011 sampling period. In addition, the Palmer Z Index indicated that the area around Chino Mines was either in severe (-2.0 to -2.74) or possibly extreme drought (-2.75 and below) during the June 2011 sampling (NOAA 2011). As of mid-June 2011, 45 percent of New Mexico was in exceptional drought, the worst drought category possible. Exceptional drought is essentially a 25 to 50-year recurrence event as shown in **Figure 1** (NMDC 2011).

EPA is not bound by state guidance like the HP and its reliance on the SPI in its review of any UAA submitted in support of a designated use modification. Rather, EPA must ensure that state or tribal water quality standards are scientifically defensible and meet the requirements of federal regulations and the CWA. Although EPA has approved previous use downgrades based on the HP, those have been of relatively unimpacted waters where the assessment was carried out under typical climatic conditions. Given that other scientifically supportable indices indicate drought conditions during the sampling period, and the limitations of the SPI, EPA needs further information to confirm the representativeness of the conditions and therefore the data collected and reported in the Chino report.

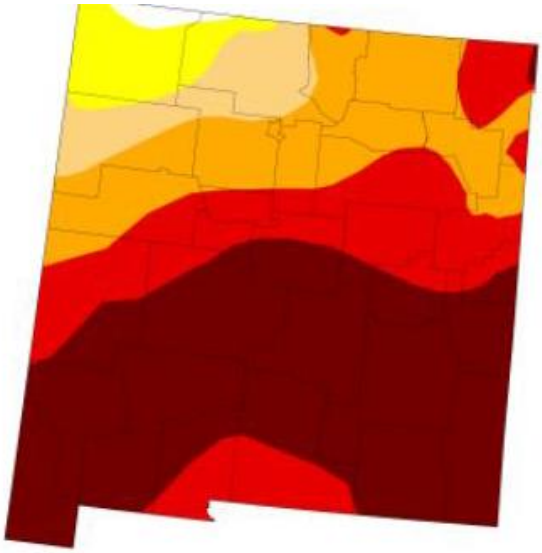
Figure 1

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.75	99.25	93.98	87.35	67.86	44.90
Last Week (06/07/2011 map)	0.75	99.25	93.98	87.35	67.91	44.53
3 Months Ago (03/15/2011 map)	7.79	92.21	84.02	33.82	9.25	0.00
Start of Calendar Year (12/28/2010 map)	6.16	93.84	40.40	0.00	0.00	0.00
Start of Water Year (09/28/2010 map)	76.66	23.34	0.00	0.00	0.00	0.00
One Year Ago (06/08/2010 map)	81.91	18.09	0.02	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional



Determining if waters are naturally ephemeral is difficult under normal circumstances. Under severe to extreme drought conditions, intermittent and perennial streams can appear ephemeral, making an accurate use determination difficult to impossible. The lack of water in a watercourse under severe to extreme drought conditions does not mean that the conditions described in 40 CFR 131.10(g)(2) exist.

Subsurface Flow

In its review of both the initial and revised Chino reports, EPA found that the Chino Mine and STSIU waters represent a complex site where the assessment included 24 sampling sites spread across five separate subwatersheds. The Chino report acknowledged that the STSIU waters are in an active mine site where impacts from historical releases during mining operations (tailings and air emissions) are being addressed under an Administrative Order on Consent (AOC) and in some areas, through reclamation. Under the AOC, pre-Feasibility Study (FS) Remedial Action Criteria (RAC) for surface waters are being applied in the STSIU. However, the Chino report did not provide any

information on the effect mining activities or other anthropogenic impacts may have on the hydrology of these waters. The Region considers supporting maps, a technical discussion on groundwater flow or lack thereof beneath the mine's outfalls and the STSIU subwatersheds, and a discussion of the potential and actual impact mining activities may have on these waters, all relevant in determining if these waters are naturally ephemeral or not. The original Chino report provided no groundwater information and the revised report only provided groundwater information around the Santa Rita pits and nothing on the STSIU subwatersheds. Without this critical information, it is difficult to determine what aquatic life use is or is not attainable consistent with 40 CFR 131.10(g)(2).

Acidic, metal-laden soils can impact the flora and fauna within these areas, and potentially affect the qualitative biological assessment that Chino Mines performed during field work. Given that the HP relies on observations of flora and fauna in addition to geomorphic and hydrological indicators to form the basis of an ephemeral classification, discussion on how mining may have affected the physical structure as it relates to surface and groundwater flow and the biotic community of these watercourses is necessary to fully assess the highest attainable use in these waters as required by 40 CFR 131.10(g).

The EPA found multiple reports that confirm the extent of the historic mining-related contamination adjacent to and in the STSIU subwatersheds. In the U.S. Fish and Wildlife Service Pre-Assessment Screen for the Chino Mine Site (USFWS 2003), the Service described the sources and time periods of hazardous substance releases at the site. There are several tailings impoundments adjacent to Whitewater Creek, a stream that is within the STSIU and adjacent to the subwatersheds being assessed (including 6 of the 12 field sampling locations). There have been several releases/overflows from these impoundments through the years, the largest event occurring in 1999 which resulted in 3.25 million gallons of tailings spilling into Whitewater Creek. Additionally, windblown tailings have been a source of contamination in the study area. Inactive and uncapped tailings impoundments serve as ongoing sources of hazardous substance releases through the formation of acidic, metal-laden ponds on the surfaces of impoundments and windblown emissions (USFWS 2003). Evidence of wind-blown emissions comes from surface soil samples collected downwind of the tailing ponds which had elevated copper concentrations (USFWS 2003).

The Chino report appears to be something of a 'snapshot' of instantaneous conditions focused solely on hydrology as it relates to the conditions described in 40 CFR 131.10(g)(2) rather than a comprehensive analysis of these waters. Basing a use determination on data derived primarily from the utilization of the SWQB's HP, rather than a comprehensive UAA at such a complex site, appears inconsistent with 20.6.4.15 B. NMAC, which states that "a UAA shall assess the physical, chemical, biological, economic or other factors affecting the attainment of the use," citing EPA guidance (USEPA 1983) and the HP. The HP specifically provides that information obtained using the methods described in the HP "can then be used to provide technical support for a Use Attainability Analysis (UAA)…however, it cannot be used in place of the UAA."

Although the SWQB's HP has been used to support other use attainment determinations, those assessments were typically individual streams or stream segments, some with minimal anthropogenic influence, or with only a single facility with infrequent or no discharge – in effect simple, uncomplicated sites that are not comparable to the Chino Mines site in terms of scale and complexity.

Highest Attainable Use

The federal regulation at 40 CFR 131.10(g) specifically requires that where a state adopts a new or revised water quality standard based on a required UAA, that the state adopt the highest attainable use, as defined in 40 CFR 131.3(m). The highest attainable use is defined as "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 CFR 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability. Given this requirement, an assessment of all relevant factors that relate to the STSIU's hydrologic classification is necessary in order to determine the highest attainable use for these waters. Further discussion specifically on the impacts of historical mining and other anthropogenic activities, as they relate to the ephemeral condition of STSIU waters and why 40 CFR 131.10(g)(2) precludes attainment of the use, is necessary to discern what aquatic life use constitute the highest attainable use for these waters.

In summary, EPA is taking no action on the downgraded designated uses for the Chino STSUI waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv) NMAC. The decision to take no action at this time does not mean the use determinations for the Chino STSUI waters cannot be supported, but that additional information is needed to supplement the Chino report's conclusions that marginal warmwater aquatic life use cannot be attained and that the limited aquatic use is the highest attainable use for these waters consistent with federal regulations at 40 CFR 131.10(g). The recommended information needed is as follows.

Information concerning drought conditions:

- Please provide data obtained during acceptable conditions or conduct a more thorough assessment of climactic conditions that existed during the original sampling period in the area and including the Chino STSIU waters using drought indices such as the SPEI and PDSI to determine if the sampling was carried out under appropriate conditions.
- Please provide information to clearly show that the STSIU waters were not under severe to exceptional drought conditions during sampling and that these waters are naturally ephemeral. As discussed above, severe drought conditions during field assessments can cause intermittent and perennial waters to appear ephemeral.

Information related to subsurface flow:

- The USFWS Pre-Assessment Screen spoke to the percentage of groundwater wells where analytes were detected in exceedance of the New Mexico's standards. The Chino report only provided groundwater flow contours and vectors in the area under and surrounding the Santa Rita Mine Pit, but not for the STSIU study area and subwatersheds. During the November 23, 2016 conference call, NMED said there is no groundwater flow beneath the STSIU subwatersheds. Please provide supporting information and analysis supporting a lack of subsurface flow in the area of the STSIU waters.
- Please provide a discussion of the impacts of past or current mining activities on subsurface flow if present and how these activities affect the determination of which waters are naturally ephemeral and preclude attainment of the use consistent with 40 CFR 131.10(g)(2).

Information related to the highest attainable use:

- Please provide an assessment of how the surface or subsurface hydrology in and around the STSIU waters have or have not been altered by mining and other anthropogenic activities and how this may have potentially impacted the highest attainable use for these waters.

Under the CWA, revisions to state WQS are not effective for CWA purposes until approved by EPA. Because EPA is taking no action on the designated uses for the STSIU waters currently identified in 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC, the amended designated uses are not effective for CWA purposes. The previously applicable CWA § 101(a)(2) uses continue to apply to Chino STSIU waters for all CWA programs.

Water Effects Ratios (WER):

As discussed above, EPA has not technically approved the Chino report/UAA and is taking no action on the downgraded designated uses for the Chino STSUI waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv). Because the CWA tasks EPA with reviewing a state's water quality criteria based on whether the criteria are sufficient to protect the applicable designated uses, it is difficult for EPA to make a determination regarding appropriate criteria without knowing which uses apply. Because EPA is taking no action on the amended designated uses for the Chino STSUI waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv), it is premature for EPA to determine whether the submitted criteria protect the designated uses for those waters. If amended designated uses are approved for the STSIU waters, EPA will be able to evaluate the state's water quality criteria to support those uses, including the site-specific aquatic life criteria for copper and the WERs used to determine those criteria. However, as part of its determination of whether state-adopted criteria protect the designated use, EPA must evaluate whether the criteria were derived using a sound scientific rationale. The copper Biotic Ligand Model (BLM) has been the EPA's national recommended freshwater aquatic life criteria for copper since 2007. The copper BLM currently reflects the best available science on copper bioavailability and toxicity for use in developing protective copper criteria.

Although EPA recommends the copper BLM as the best available science for developing copper criteria, states have significant flexibility in developing and adopting criteria to reflect site-specific conditions as described in 40 CFR 131.11(b)(1) and EPA's Water Quality Standards Handbook. That flexibility is also reflected in 20.6.4.10. D(4) NMAC, which identifies EPA-issued guidance for site-specific criteria development methodologies, including the streamlined water-effect ratio (WER) procedure for discharges of copper and the BLM model for copper.

The WER equations New Mexico has adopted applicable to waters within the Chino STSIU were not derived according to EPA's WER guidance. Although they are multipliers to the otherwise-applicable criteria like other WERs, these criteria were derived using a completely novel method not related to EPA's WER procedure. Being novel, these equations are more complex to evaluate for scientific defensibility and protectiveness.

Although EPA guidance recommends that states considering the development of site-specific criteria involve EPA at the start of the project, the SWQB did not engage EPA in the development of the site-specific criteria for the Chino STSIU waters adopted by the Commission and included in new regulatory segments 20.6.4.808 and 809 NMAC.

Because the approach for deriving these site-specific criteria is novel and EPA was not involved in their development, the state may expect EPA will need additional time to closely scrutinize the results before taking action on the standards. The EPA's current policy is that WERS submitted by states for development of site-specific criteria should be compared with the BLM to ensure protectiveness using the recommended criteria guidance. The EPA recommends that states provide a comparison between the WER and BLM. Such a comparison may involve the collection of new data, although this depends on the dataset collected and whether data for BLM relevant parameters were collected.

Conclusion

The EPA has determined it does not have adequate information to fully assess the downgraded use designations for the Chino STSIU waters at 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC. It is thus premature for EPA to evaluate the criteria to support those uses adopted by the Commission and included in new regulatory segments 20.6.4.808 and 809 NMAC. Consequently, EPA is taking no action at this time on the amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC or 20.6.4.808 and 809 NMAC– Closed Basins and Water Effects Ratios (WER). EPA's decision to take no action on these amendments does not mean the use determinations for the Chino STSIU waters cannot be supported or that the criteria adopted to support those uses, if approved, would not be appropriate. Instead, EPA has determined that additional information is needed to supplement the Chino report's conclusions. In addition, EPA recommends the state provide a comparison between the WER and the BLM to facilitate EPA's review of the site-specific aquatic life criteria for copper.

As noted above, under the CWA, revisions to state WQS are not effective for CWA purposes until approved by EPA. Because EPA is taking no action on the amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC or 20.6.4.808 and 809 NMAC– Closed Basins and Water Effects Ratios (WER), the amended designated uses and associated criteria for the Chino STSIU waters are not effective for CWA purposes. The previously applicable CWA § 101(a)(2) uses and associated criteria continue to apply to Chino STSIU waters for all CWA programs.

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Exhibit 28

NMED proposes to weaken public hearing requirements for piscicide applications where NPDES permits are not obtained by rending public hearings optional. Amigos Bravos opposes this change and encourages the WQCC to retain the language in the current standards. The following proposed changes to NMED's proposal would do just that and reflect, word-for-word, the language in the current standards:

> C. The commission shall review the petition and the department's recommendation and **shall** within 90 days of receipt of the department's recommendation ~~may~~ hold a public hearing in the locality affected by the proposed use in accordance with Adjudicatory Procedures. …
>
> …
>
> E. After a public hearing ~~or commission meeting, if no hearing is held~~, the commission may grant the petition…

Basis for Change to NMED's Proposal:

NMED proposes in 20.6.4.16 NMAC to not require WQCC review of piscicide applications that obtain a NPDES permit. NMED further proposes to eliminate mandatory public hearings for those situations where piscicide applications do not need a NPDES permit and therefore are not subject to the public participation processes under the NPDES permitting process. While Amigos Bravos does not oppose NMED's proposal to provide for WQCC review where piscicide applications obtain an NPDES permit, Amigos Bravos opposes eliminating the mandatory public hearing requirement where piscicide application do not need an NPDES permit.

Piscicide applications are very controversial in many parts of the state. A full public process is necessary to make sure that people from the locality where the piscicide application is being proposed have the chance to participate in the application process and have their voices heard before the Commission through a public hearing. Notably, assuming that the Commission adopts NMED's proposal to eliminate a commission process for piscicide applications that obtain a NPDES permit, the administrative burden on the Commission will be reduced from the current situation. In sum, the WQCC should retain the public hearing requirement for piscicide applications that do require an NPDES permit.

III. 20.6.4.128 – AMIGOS BRAVOS' PROPOSAL REGARDING LOS ALAMOS INTERMITTENT AND EPHEMERAL WATERS

Amigos Bravos proposes the following changes to 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~~ **marginal warmwater** aquatic life and secondary contact.

Basis for change:

Intermittent waters on Los Alamos National Laboratory's ("LANL's") property are given weaker protections (those associated with the limited aquatic life use) than all other intermittent waters in New Mexico (which receive the marginal warmwater aquatic life use). Amigos Bravos opposes such unfair and preferential treatment and therefore proposes to ensure consistent application of water quality standards by including the "marginal warmwater aquatic life" use in 20.6.4.128 NMAC. This inclusion ensures that all waters covered by 20.6.4.128 NMAC are given "fishable/swimmable" protections (EPA does not the consider 20.6.4.128 NMAC's current "limited aquatic life" use a fishable/swimmable protection).

In the event that LANL believes that the marginal warmwater aquatic life use is not attainable in some ephemeral waters under this segment, LANL should complete an adequate, properly timed UAA analysis to demonstrate that contention and a separate segment should be created for those waters. While LANL did prepare a UAA, the UAA is fatally flawed because, *inter alia*, it was drafted *after* 20.6.4.128 NMAC was changed during the 2004 triennial review. Put differently, the UAA was drafted to justify a decision that had already been made, not to ensure a reasoned and informed decision. Condoning such predetermined action constitutes a textbook example of arbitrary and capricious action. See, e.g., *Davis v. Mineta*, 302 F.3d 1104, 1112-14 (10th Cir. 2002) (forbidding predetermined decisions).

Moreover, the CWA mandates that all states—including New Mexico—review water-bodies that are not meeting the fishable/swimmable goals ("101(a)(2) uses"). CWA regulations provide that even if a water-body segment is, on the basis of a UAA, downgraded such that the protections afforded to that water body segment are less protective than those specified in section 101(a)(2) of the CWA, that water-body segment must be reexamined every three years to determine if any changes have occurred in the water body or new information has become available that would create conditions where 101(a)(2) uses are attainable. 40 C.F.R. § 131.20(a). Here, it has been more than 10 years since the waters subject to 20.6.4.128 NMAC have met fishable/swimmable uses and, therefore, CWA regulations mandate that it is past time to reassess the segment. Moreover, since the 2004 standard was adopted, New Mexico has adopted a hydrology protocol that provides clearer guidance on how to complete UAAs in ephemeral and intermittent streams. Amigos Bravos contends that, if this new protocol was used, the waters in these segments would clearly merit the protections of a marginal warmwater aquatic life use designation rather than a limited aquatic life use designation, in particular given distinctions in how the hydrology protocol, consistent with 128.6.4.98 NMAC, treats intermittent and ephemeral waters differently.

Exhibit 29

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

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.

By: _____

Erik Schlenker-Goodrich
eriksg@westernlaw.org

Western Environmental Law Center
208 Paseo del Pueblo Sur, #602
Taos, NM 87571
575.613.4197 (p)
575.751.1775 (f)

Counsel for Amigos Bravos

By: /s/John Verheul

John Verheul
Kathryn S. Becker
New Mexico Environment Department
P.O. Box 5469
Santa Fe, New Mexico 87502
john.verheul@state.nm.us
kathryn.becker@state.nm.us

Counsel for New Mexico Environment Department

By: /s/Lara Katz

Lara Katz
Louis W. Rose
MONTGOMERY & ANDREWS, P.A.

Post Office Box 2307
Santa Fe, New Mexico 87504-2307
(505) 982-3873

Timothy A. Dolan
Office of Laboratory Counsel
Los Alamos National Laboratory
P.O. Box 1663, MS A187
Los Alamos, NM 87545
(505) 667-7512

Counsel for Los Alamos National Security LLC

By: /s/ Lisa Cummings
Lisa Cummings
Staff Attorney
Office of Counsel
Los Alamos Field Office
U. S. Department of Energy
3747 West Jemez Road
Los Alamos, NM 87544-2201
(505) 665-9172

Counsel for U.S. Department of Energy

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:

Pam Castaneda, Boards & Commissions Administrator
New Mexico Environment Department
1190 S. St. Francis Drive, S2102
P.O. Box 5469
Santa Fe, New Mexico USA 87502
E-mail: Pam.Castaneda@state.nm.us

Kathryn S. Becker, Esq.
John Verheul
Assistant General Counsel
Office of General Counsel
New Mexico Environment Department
P.O. Box 5469
Santa Fe, New Mexico 87502
kathryn.becker@state.nm.us
john.verheul@state.nm.us

Dalva L Moellenberg, Esq.
Germaine R. Chappelle, Esq.
1239 Paseo de Peralta
Santa Fe, NM 87501
dlm@gknet.com
germaine.chappelle@gknet.com

Stuart R. Butzier, Esq.
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
P.O. Box 9318
Santa Fe, New Mexico 87504-9318
sbutzier@modrall.com

Louis W. Rose
Montgomery & Andrews, P.A.
P.O. Box 2307
Santa Fe, NM 87504-2307
lrose@montand.com

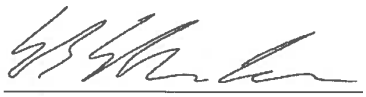
Lara Katz
Montgomery & Andres, P.A.
P.O. Box 2307

Santa Fe, NM 87504-2307
lkatz@montand.com

Jolene L. McCaleb
Taylor & McCaleb, P.A.
P.O. Box 2540
Corrales, NM 87048-2540
jmccaleb@taylormccaleb.com

Timothy A. Dolan
Office of Laboratory Counsel
Los Alamos National Laboratory
P.O. Box 1663, MS A187
Los Alamos, NM 87545
tdolan@lanl.gov

Lisa Cummings
Staff Attorney
Office of Counsel
Los Alamos Site Office
U.S. Department of Energy
528 35th Street
Los Alamos, NM 87544-2201
lisa.cummings@nnsa.doe.gov



Erik Schlenker-Goodrich
Western Environmental Law Center

Exhibit 30

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF:

THE PETITION TO AMEND
STANDARDS FOR INTERSTATE AND
INTRASTATE SURFACE WATERS
20.6.4 NMAC **WQCC No. 20-51(R)**

AFFIDAVIT OF MICHAEL T. SALADEN

I, Michael T. Saladen, being first duly sworn, depose and state:

1. I am over the age of 18 and I am competent to make the statements contained herein which are based on my experience, knowledge, and information.

2. I am an employee of Triad National Security, LLC ("Triad") at the Los Alamos National Laboratory ("LANL"). I have been employed at LANL since April 1, 1991. My current position is Environmental Manager 3 (Deputy Group Leader).

3. I have been the Deputy Group Leader for LANL's Environmental Compliance Programs Group (EPC-CP) for several years beginning in April 2016. Prior to that, I was the Team Leader for the Water Quality Compliance Programs Team within EPC-CP for approximately 20 years. Among other duties, I am responsible for compliance and monitoring oversight of Clean Water Act programs (*i.e.*, NPDES Outfalls, SPCC Plans, Dredge and Fill, WQCC regulations, Storm Water Permits, *etc.*), including surface water quality issues, at LANL. Altogether, I have served in these roles for approximately twenty-five years.

4. I was initially hired at LANL in April 1991 and served as a Technical Staff Member for LANL's Water Quality and Hydrology Group for 5 years. Prior to that time, I served for over 4 years as an Environmental Scientist in the New Mexico Environment Department's ("NMED")

Surface Water Quality Bureau ("SWQB"). During my employment at NMED, I was responsible for reviewing and certifying draft NPDES permits for compliance with state water quality standards and I worked on other surface water quality issues. Thus, I have approximately thirty-five years of experience in the field of water quality compliance and regulations. I have a Bachelor of Science degree in Environmental Science and a Master of Science degree in Biology from the New Mexico Highlands University. A copy of my resume is attached as **Attachment A** to this affidavit.

5. In this affidavit, I summarize the historic context for the classification of waters within LANL, specifically current sections 20.6.4.126 NMAC ("Section 126") and 20.6.4.128 NMAC ("Section 128"), as well as my personal involvement in this rule making process. I then describe the October 9, 2015 "Joint Stipulation Regarding Proposed Changes to 20.6.4.128 NMAC" entered into between LANL, the U.S. Department of Energy ("DOE"), Amigos Bravos, and NMED during the 2013 Triennial Review (WQCC 14-05(R)) (the "2015 Joint Stipulation"), and summarize the data collection and stream segment assessment efforts undertaken for waters within LANL pursuant to the 2015 Joint Stipulation. Finally, I urge the Water Quality Control Commission ("WQCC") to adopt a transparent, data-driven process for determining whether any waters currently classified under Section 126 or Section 128 should be reclassified, including a process for determining whether waters currently classified under Section 128 should be moved to the proposed new section 20.6.4.140 NMAC ("Section 140").

I. History of the Classification of Waters Within the Los Alamos National Laboratory.

6. In September of 1992, NMED issued a conditional certification of a draft NPDES Permit for the Laboratory, which was then published by the U.S. Environmental Protection Agency ("EPA"). NMED's conditional certification set forth effluent limits based on designated uses of

Rio Grande Stream Sections 2-111 and 2-118 (*i.e.*, including, but not limited to, marginal coldwater fishery and warmwater fishery). The University of California and the Department of Energy ("UC/DOE") filed a petition for review of NMED's conditional certification with the WQCC. The petition challenged NMED's identification of Rio Grande Stream Sections 2-111 and 2-118 (currently section 20.6.4.114 NMAC) as receiving waters, and challenged the application of Rio Grande fishery-related designated uses to LANL discharges. I was the Technical Staff Member at LANL at the time the draft permit was issued by EPA for public review and comment, and when the permit was certified by NMED. I was the subject matter expert assigned to review the draft permit. I developed and coordinated comments for UC and DOE, and provided these comments to EPA and NMED regarding the draft permit and state certification under Section 401 of the CWA; coordinated permit development with NMED, EPA, and UC/DOE; participated in drafting the petition challenging the classification of LANL waters; supported expert witnesses in the preparation and development of filed testimony during the 2003 Triennial Review, and specifically worked with Dr. Richard Meyerhoff. I was ultimately responsible for implementation of the new permit requirements at LANL when the permit was issued by EPA.

7. On April 20, 1993, NMED and UC/DOE entered into a settlement agreement on the UC/DOE petition, which directed that "a study shall be conducted for the purpose of identifying the stream uses associated with the watercourses in the canyons into which the petitioners discharge waters subject to NPDES regulations." *See* Settlement Agreement entered April 20, 1993 ("Settlement Agreement"), attached to LANL's Notice of Intent to Present Technical Testimony as **LANL Exhibit 45**. The Settlement Agreement established a four-member committee including NMED, UC and DOE representatives to oversee the study. This committee was responsible for selecting the unbiased third party to conduct the study; helped develop and

approve the scope of work for the study; and provided support for collection and review of data and other information to be used in the study. NMED chaired the committee and was responsible for settling any issues or concerns between affected parties, and NMED had final approval of "representative data and other scientific information" to be used in the study. During this time, I directly supported the UC representative selected for this committee.

8. In January 1996, the Settlement Agreement was amended to clarify that an unbiased third party, the U.S. Fish and Wildlife Service ("FWS"), would conduct the study. *See* **LANL Exhibit 46**, Amendment to Settlement Agreement, at 2 (Jan. 22, 1996). The study, entitled *A Water Quality Assessment of Four Intermittent Streams in Los Alamos County, New Mexico*, prepared by the FWS on behalf of the DOE, NMED, and LANL ("FWS Report"), initiated the process of identifying the proper stream uses for all waters within LANL, and eventually provided support for the establishment of sections 20.6.4.126 NMAC, 20.6.4.127 NMAC, and 20.6.4.128 NMAC. LANL's Water Quality Compliance Team, including myself, supported assessment study activities conducted by FWS. These activities included escorting FWS representatives on LANL property; conducting site assessments of LANL canyons and watersheds; collecting surface and groundwater samples; taking photographs of site conditions; collecting data and other relevant scientific information; providing security review of all documents and photos; and, submitting the information to the selection committee for review and approval. Although onsite assessments were completed by the FWS in 1997, NMED, UC/DOE, and FWS representatives continued to gather and review data and other relevant scientific information for support in the development of appropriate protective uses for LANL waters through 2002. FWS completed the FWS Report in 2002.

9. During the 2003 Triennial Review, NMED proposed the classification of three new stream segments in the LANL area. On May 13, 2005, the WQCC adopted sections 20.6.4.126 NMAC (perennial portions of streams in and close to LANL), 20.6.4.127 NMAC (perennial portions of Upper Los Alamos Canyon), and 20.6.4.128 NMAC (ephemeral and intermittent portions of watercourses within lands managed by the DOE and LANL) as part of the amendments to the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC. For Section 128, the aquatic life use was designated as "limited aquatic life." *See* **LANL Exhibit 16**, Statement of Reasons for Amendment of Standards, WQCC 03-05(R), at 58-71 (May 13, 2005). And, for all waters within LANL property boundaries, the designated recreational use was established as secondary contact.

10. The revised water quality standards were submitted to EPA for review and approval as required under federal regulations at 40 CFR 131.20(c). EPA responded that it strongly supported the concept used by NMED in developing standards for ephemeral, intermitted, and perennial surface waters within LANL, but EPA took no action on the adoption of Sections 126 and 128 due to a lack of information regarding the basis for use designations. *See* **LANL Exhibit 24**, Approval Letter and Record of Decision for EPA Review of 20.6.4 NMAC, at 2 (Dec. 29, 2006) (stating that "adequate supporting documents (such as a use attainability analysis) was not available").

11. Accordingly, with technical assistance provided by EPA, NMED prepared the 2007 Use Attainability Analysis ("UAA") to support the use designations for Sections 126 and 128 and satisfy EPA's concerns. *See* **LANL Exhibit 18**. The UAA, published in August 2007, evaluated all waters within LANL and addressed the applicability of a secondary contact use in Sections 126 and 128 and a limited aquatic life use in Sections 128. The 2007 UAA concluded that "a limited

aquatic life use is attainable in Sections 128," and "[n]atural conditions of low flow and water level, factors identified in 40 CFR 131.10(g)(2), prevent the attainment . . . of a Section 101(a)(2) aquatic life use in Segment 128." The 2007 UAA referenced data from the FWS Report to conclude that there is no source population of fish for the segment, and, furthermore, intermittent and ephemeral streams do not have the habitat requirements to support a fishable use. *See* **LANL Exhibit 18** at 4-5. The 2007 UAA also supported a secondary contact designated use for all LANL waters.

12. Based on the UAA findings, EPA approved the classified waters and designated uses for Sections 126 and 128. *See* **LANL Exhibit 19**, EPA Approval of Revisions to New Mexico's Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC (August 31, 2007). EPA's approval of Sections 126 and 128 resulted in the classification of all waters within LANL.

13. Since EPA's approval of Section 128, LANL has regularly evaluated the appropriateness of the secondary contact and limited aquatic life uses assigned to Section 128. In fact, all stream segments at LANL are assessed on an essentially continuous basis through daily monitoring of an extensive gage network, and field teams that routinely walk canyons and observe stream conditions. Section 128 and its designated uses have been addressed in every Triennial since that segment was adopted. In addition, each assessment unit within Section 128 is addressed every two years in NMED's CWA Section 303(d)/305(b) Integrated Report. Section 128 has been evaluated in line with, and indeed beyond, the requirements of 40 CFR 131.20(a). All LANL monitoring information, Triennial documents, and reports are publicly available. None of this information reveals any significant changes or concerns warranting a different designated aquatic life use for Section 128.

14. During the 2009 Triennial Review, Amigos Bravos proposed that the designated use for Section 128 be changed from "limited aquatic life" to "aquatic life." LANL and NMED presented rebuttal testimony in opposition to Amigos Bravos' proposal. The WQCC agreed with LANL and did not adopt the Amigos Bravos proposal. In its October 2010 Order and Statement of Basis for Amendment of Standards, the WQCC gave the following reasons for not adopting Amigos Bravos' proposed change to the standard: (1) The section was created and uses assigned during the last triennial; (2) Amigos Bravos presented no new evidence regarding current water quality conditions to support changing the standard, (3) the UAA for this section was completed and approved by the US EPA; (4) the 2002 FWS Report relied on by Amigos Bravos, had already been considered in assigning the 'limited aquatic life" use by the WQCC; (5) EPA had approved the provision based on the hearing record and the UAA, and did not indicate any problem with the decision; and (6) the UAA for Section 128 does acknowledge the presence of aquatic invertebrates and amphibians, but not fish, concluding that the waters cannot attain the CWA section 10l(a)(2) goal of water providing for the "protection and propagation of fish, shellfish and wildlife." *See* **LANL Exhibit 47**, Order and Statement of Reasons for Amendment of Standards, WQCC 08-13, at 81-82. EPA reviewed and approved the WQCC's 2010 amendments to the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC, including Section 128. EPA did not indicate that it had any concerns with Segment 128 and its designated uses.

II. The Joint Stipulation Agreement Regarding Section 128 Waters

15. In the 2013 Triennial Review (WQCC 14-05(R)), Amigos Bravos proposed that the designated use for Section 128 be changed from "limited aquatic life" to "marginal warmwater aquatic life." *See* **LANL Exhibit 28**. Both LANL and NMED presented rebuttal testimony in opposition to Amigos Bravos' proposal. *See* **LANL Exhibit 25**, Michael Saladen Rebuttal

Technical Testimony, 2013 Triennial Review, February 13, 2015; **LANL Exhibit 48**, NMED Rebuttal Testimony, 2013 Triennial Review, February 13, 2015.

16. On October 9, 2015, Amigos Bravos, DOE, LANL, and NMED entered into the 2015 Joint Stipulation. *See* **LANL Exhibit 29**. I was personally involved in the negotiation process with LANL's Office of Legal Counsel, DOE, NMED, and Amigos Bravos in the development of the terms and conditions of the 2015 Joint Stipulation. Pursuant to the 2015 Joint Stipulation, Amigos Bravos agreed to withdraw its proposed changes to Section 128 waters and, in exchange, LANL agreed to share "new information, maps, or data obtained or developed" since the 2007 UAA that would assist in the identification of: (a) which Section 128 waters are ephemeral and which are intermittent; (b) the existing uses of the Section 128 waters; (c) the presence of macroinvertebrates or shellfish in the Section 128 waters; and (d) any significant change to the chemical, physical, or biological integrity of the Section 128 waters. In addition per the agreement: (1) NMED agreed it would share any new information that it had developed; (2) all parties agreed they would meet and confer regarding the appropriate level of water quality protections afforded to Section 128 waters through a series of meetings to take place between January and July of 2016, and recognized that additional data collection and analysis may be helpful or necessary; and (3) the parties "endeavor[ed] to reach agreement regarding the appropriate level of water quality protections" Section 128 by September 2016. Finally, the parties agreed to work towards reaching consensus on decisions regarding appropriate protections.

17. The 2015 Joint Stipulation does not and was never intended to override prior WQCC and EPA decisions for Section 128 waters by defaulting these waters to certain categories. Rather, the parties entered into the 2015 Joint Stipulation in an effort to reach consensus on the highest appropriate attainable uses for waters currently classified under section 20.6.4.128 NMAC.

The 2015 Joint Stipulation was developed to specifically identify "changes" that have occurred since Sections 126 and 128 were classified.

18. In 2015 and 2016, in accordance with the terms of the 2015 Joint Stipulation, LANL provided NMED and Amigos Bravos with: (i) A map of the Pajarito Plateau depicting stream segments, gages and designated uses; (ii) Gage flow data; (ii) Precipitation data; (iv) Hydrology protocol information and photos of key canyon locations; (iv) Riparian inventory results spanning over several years; (v) Surface Water Data for water years 2010-2013; and (vi) Stream Assessment Documents for Section 128 waters at LANL, including Water Quality Management Plan and Continuing Planning Process (WQMP/CPP) Appendix C – Hydrology Protocol ("HP") Level 1 Field Sheets. LANL has also conducted site tours for Amigos Bravos and NMED, including on February 17, 2016 (Amigos Bravos) and July 7, 2016 (Amigos Bravos and NMED). *See* **LANL Exhibit 36**.

19. From 2016 through 2020, LANL worked closely with NMED to conduct HP Level 1 and Level 2 assessments for waters within LANL, including Level 1 assessments for all Section 128 waters. These HP assessments were all conducted in accordance with the procedures established in NMED's Hydrology Protocol. HP assessments were conducted jointly with NMED and in a few instances with NMED and Amigos Bravos. NMED was invited to participate in all HP assessments conducted at LANL, but in some cases, NMED did not have staff availability to participate in joint sampling efforts. All HP assessments were conducted following the same approved procedures. All HP assessment data have been provided to NMED and Amigos Bravos. From 2019-2021 LANL representatives, including myself and DOE, conducted monthly meetings with NMED staff to review the status of assessments, review data and other relevant information, and continued to schedule additional site visits and HP surveys. *See* **LANL Exhibit 36**.

20. As discussed above, the 2007 UAA established the existing designated uses of limited aquatic life and secondary contact for all Section 128 waters. There is no new data suggesting that the secondary contact recreational use should change. Some new data collected pursuant to the 2015 Joint Stipulation suggests that the current aquatic life use designation of limited aquatic life may no longer be appropriate in some stream segments. Specifically, technical data supports that the marginal warmwater aquatic life use is more appropriate for these certain segments than the limited aquatic life use provided under Section 128. However, to date, LANL, Amigos Bravos, and NMED have not reached agreement regarding the appropriate level of water quality protections for Section 128 waters.

III. The Commission Must Establish a Data-Driven Process for the Re-classification of LANL Waters

21. In this 2020 Triennial Review, NMED initially proposed reclassifying certain stream segments from Section 128 (ephemeral and intermittent) to Section 126 (perennial) and to the proposed new Section 140 (intermittent). As discussed above, the evaluation of all Section 128 waters is subject to the 2015 Joint Stipulation, 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.

22. Through the evaluation of Section 128 waters conducted pursuant to the 2015 Joint Stipulation, NMED, and Amigos Bravos have identified a few potential changes that may be needed in some of the Section 128 reaches. NMED should not ignore the high quality data and scientific information, collected under NMED's WQCC-approved protocols, which have been provided over the last 5 years under the 2015 Joint Stipulation. Additionally, there is an inherent need to develop a consistent and transparent process to ensure appropriate protections are applied

to protect waters at LANL and all classified waters around the state. Departmental constraints on evaluating and fully considering the vast field of recent, high quality data available from LANL for the Pajarito Plateau watersheds is not a reasonable justification to disregard data and it creates the appearance that NMED is selectively using data for its use to support already reached conclusions. Furthermore, as NMED accepts other third-party data including, mining industry HP work, a decision to exclude LANL data from NMED consideration is unequal treatment of LANL.

23. NMED must establish and the WQCC approve a clear process for the reclassification of LANL waters. 20.6.4 NMAC identifies the procedures to conduct a UAA and remove a designated use that is not an existing use, *e.g.*, 20.6.4.15 NMAC. In contrast, NMED's process and evidentiary requirements to reclassify a water to assign a more protective designated use is unclear. Decisions to reclassify a waterbody should be based on the best available data and science that is made available to the public through an open, transparent process.

24. LANL specifically recommends that NMED develop, and the WQCC adopt, a five-step process for the reclassification of waters, to be incorporated into the state Water Quality Management Plan ("WQMP"). Although such a process should apply for any waters of the state that are being reclassified, as applied to LANL's Section 128 waters the process would involve the following steps. Step 1 of that process would be to finalize, after stakeholder input, the draft "Existing Use Analysis Work Plan for Classified Waters Within Los Alamos National Laboratory Identified Under 20.6.4.128 NMAC" ("Draft EUA Work Plan") that NMED issued in October 2020. The Draft EUA Work Plan describes how to conduct an investigation into whether there is sufficient information to initiate an analysis of attainable aquatic life use for waters classified under section 20.6.4.128 NMAC. Step 2 would be to implement the investigation by compiling existing data, as required by the Work Plan, and collecting additional data, where necessary, to fill critical

data gaps. Step 3 would be to conduct the analysis proscribed by the EUA to determine if a higher attainable use is applicable to the waterbody (e.g., marginal warmwater aquatic life instead of limited aquatic life). Step 4 would be to prepare and submit a petition to the WQCC to modify the designated aquatic life use for waters classified under 20.6.4.128 NMAC, if warranted by the analysis of new information. If approved by the WQCC, Step 5 would be to submit the results of the review, any supporting analysis, the methodologies used, any general policies applicable to water quality standards, and the WQCC approved standards revisions 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. *See* 40 CFR 131.20(c).

25. LANL is willing to assist NMED to develop this process. LANL supports the reclassification of a waterbody where appropriate to provide the highest attainable level of protection. However, decisions to reclassify a waterbody should be based on the best available data and science, and must be conducted through a rigorous, data-driven, and publicly transparent process.

FURTHER AFFIANT SAYETH NAUGHT

Michael T. Saladen
Michael T. Saladen

STATE OF NEW MEXICO)
) ss.
COUNTY OF LOS ALAMOS)

SIGNED AND SWORN TO before me on this 30 day of April 2021, by

Michael T. Saladen.

Official Seal
MEREDITH FULLMAN
Notary Public
State of New Mexico
My Commission Expires 10/2/21

Meredith Fullman
Notary Public

My Commission Expires: 10/2/2021

ATTACHMENT A

Affidavit of Michael T. Saladen
Case No. WQCC 20-51(R)

MICHAEL T. SALADEN

HIGHLIGHTS OF QUALIFICATIONS

- Accomplished manager and effective communicator with approximately 35 years of experience developing and implementing water quality and environmental compliance programs and projects.
- Technical expertise in interpreting, evaluating, and applying environmental regulations; building and directing diverse teams; managing human resources; planning strategically; implementing quality management; and, applying business administration principles.
- Strong background and experience in environmental management and compliance. Thorough knowledge and experience with federal and state environmental regulations, policies and procedures for surface water and groundwater regulations, including the federal Clean Water Act, New Mexico Water Quality Act, Safe Drinking Water Act, New Mexico Liquid Waste Regulations, and New Mexico Water Quality Control Commission Regulations.

EDUCATION

- M.S. Biology, New Mexico Highlands University, 1989
- B.S. Environmental Science, New Mexico Highlands University, 1984

PROFESSIONAL CERTIFICATIONS

- Region 6 NPDES Inspector's Workshop, U.S. Environmental Protection Agency, 2005
- McCoy RCRA Hazardous Waste Regulations, 2002
- NPDES Permit Writers' Training Program, U.S. Environmental Protection Agency, 1997
- CDC Epidemiology Certificate, 1983

PROFESSIONAL EXPERIENCE

Manager 3, EPC-CP, *Los Alamos National Laboratory (LANL)*, 2016- Present

- Deputy Group Leader for the Laboratory's Environmental Compliance Programs Group (EPC-CP). Provide technical leadership for multiple Laboratory environmental compliance programs to ensure the protection of surface water, ground water and air quality. Programs include, but not limited to: NPDES Outfall Permit Program, Storm Water Programs (IP, MSGP, and CGP), NMED Consent Order, Groundwater Discharge Plans, Dredge and Fill Permit Program, Spill Response Program, FIFRA, NESHAPS, Title V & VI Air Permits, SPCC/AST Programs, and other related surface water, groundwater and air quality compliance programs. Oversee permit development and maintenance, and assist LANL customers, facility operators and DOE with program implementation to meet environmental compliance requirements.

- Report directly to the ECP-CP Group Leader as part of the management team to assist in the planning and direction of work and personnel for environmental protection, compliance and surveillance functions.
- Provide technical and administrative leadership for meeting programmatic, operational, and administrative objectives. Provide strategic planning and continuous improvement of work products and services to internal and external customers.
- Manage resources (human, facility, property, budget/finance, and information.
- Developed and implemented institutional water quality and air quality compliance programs, projects, policies, and work activities in compliance with regulatory requirements, DOE directives, Laboratory policies, and procedures.
- Developed and presented expert testimony during New Mexico Water Quality Control Commission Public Hearings, and Triennial Reviews regarding the development of state water quality standards.

Environmental Manager 2, *ENV-CP, LANL*, 2016- Present

- Served as the Environmental Compliance Programs Group (ENV-CP), Water Quality Permitting and Compliance Team Leader. Provide technical leadership for multiple Laboratory environmental compliance programs to ensure the protection of surface water and groundwater. Programs include: NPDES Outfall Permit Program, NMED Consent Order, Groundwater Discharge Plans, Dredge and Fill Permit Program, Spill Response Program, FIFRA and SPCC/AST Programs, and other related surface water and groundwater compliance programs and projects. Oversee permit development and maintenance, and assist LANL customers, facility operators and DOE with program implementation to meet environmental compliance requirements.
- Collaborate with Laboratory organizations, facilities, management, groups and organizations to determine, monitor and report performance metrics for the environment for multiple water quality programs. Responsible for communicating environmental compliance status to all levels of Laboratory management, DOE and other stakeholders.
- Responsible for the implementing Laboratory goals and policies regarding ISM, ISSM, EMS, quality and workforce diversity.
- Manage resources (human, facility, property, budget/finance, and information).
- Developed and implemented institutional water quality compliance programs, projects, policies, and work activities in compliance with regulatory requirements, DOE directives, Laboratory policies, and procedures. Provided training, interpretation and guidance to customers and stakeholders concerning LANL policies, program objectives and environmental requirements.
- Developed and presented expert testimony during New Mexico Water Quality Control Commission Public Hearings, and Triennial Reviews regarding the development of state water quality standards.
- Served as ENV-DO On-Call representative for after-hours environmental release assessment and external agency notification for the Laboratory. Provided regulatory support to the Laboratory's Emergency Management Office and Incident Commander. Responsible for assessment of release(s) and determine if the incident required immediate notification to external agencies in accordance with state and federal regulatory requirements. Coordinated

with other On-Call subject matter experts (RCRA, NPDES, Air, NEPA, etc.) in accordance with ENV-DO policies.

Acting Environmental Manager 4, *ENV-CP, LANL*, October 2012 – December 2012

- Served as the Acting Group Leader for the Environmental Compliance Programs Group (ENV-CP). Provided leadership for Laboratory programs that assure compliance with the Resource Conservation and Recovery Act, Hazardous and Solid Waste Amendments, Clean Air Act and Clean Water Act.
- Assisted in the implementation of ENV-CP's institutional environmental compliance programs, projects, policies, and work activities in compliance with regulatory requirements, DOE directives, Laboratory policies, and procedures.
- Provided technical and administrative leadership for meeting programmatic, operational, and administrative objectives. Provided strategic planning and continuous improvement of work products and services to internal and external customers.
- Assisted in the planning and direction of work and personnel for environmental protection, compliance and surveillance functions. Managed resources (human, facility, property, budget/finance, and information).

Technical Staff Member (TSM), *ESH-18, LANL*, 1991 – 1995

- Responsible Program Lead for the Laboratory's NPDES Outfall Permit Program and New Mexico Water Quality Control Commission Programs (Spills, NOIs, GWDPs, WQSs). Provided technical and regulatory support to NPDES outfall owners to implement new NPDES Permit effluent requirements as required under the Clean Water Act and New Mexico Water Quality Act. Managed the NPDES Outfall Self-Monitoring Program, including sampling of outfalls, data management and evaluation, QA/QC, and reporting responsibilities
- Executed activities associated with the NPDES Permit Re-Application Projects, NPDES Self-Monitoring Program, Waste Stream Characterization Project, Outfall Reduction Program, DOE Tiger Team Assessment, Site-Wide Environmental Impact Statement development, including ES&H, technical acceptability, scheduling, cost and document control, supervision of staff, and providing status reports to management, Facility Managers, operating groups, DOE, and contractors.
- Planned, implemented, and completed activities to eliminate more than 100 wastewater discharge outfalls from the Laboratory's NPDES Outfall Permit. Assisted facility personnel with critical regulatory and technical information to determine current and future operational needs and waste water treatment options. Accomplished significant water conservation, decreased potential for contaminants entering into the environment, and reduced the Laboratory's liability for potential fines and penalties for permit violations and environmental non-compliance.
- Managed LANL corrective actions taken to meet EPA Administrative Order and Federal Facilities Compliance deadlines for the Waste Stream Characterization Program and Corrections Project, NPDES Outfall Permit Compliance Program, and Storm Water Program for Discharges at SWMUs and AOCs.

- Served as an active team member of the Laboratory's Emergency Response Team, investigating wastewater and water releases, chemical spills, and uncontrolled discharges.
- Interacted and communicated with regulators, line organizations, DOE, and the public on water quality issues. Participated as a counterpart in DOE Environmental Tiger Team Audits, EPA Multi-Media Inspections, NPDES Outfall Inspection, AST and SPCC Program Inspections, and other formal on-site visits.
- Served as Subject Matter Expert (SME) reviewer for the Laboratory's PRID Projects and Excavation Permits for surface water and groundwater requirements.

Environmental Scientist, *New Mexico Environment Department, Surface Water Quality Bureau*, 1986 – 1991

- Conducted compliance inspections at industrial and municipal wastewater treatment facilities regulated under the NPDES Permit Program.
- Participated in the development of New Mexico water quality standards, and environmental regulation rulemaking processes.
- Supported the development and implementation of guidelines and policies with water quality related permits and water quality programs.
- Expertise in evaluating water and wastewater treatment technologies.
- Reviewed and approved individual Notices of Intent (NOI) to Discharge and unplanned release notifications pursuant to New Mexico Water Control Commission Regulations.
- Participated in natural and cultural resource management planning, including wetlands construction, environmental assessments, and environmental impact studies.

Laboratory Technician, *Controls for Environmental Pollution, Inc.*, 1986

- Performed radiological analyses on soil, water, vegetation and air filters.
- Operated, maintained, and calibrated instrumentation for monitoring and measuring concentration of chemicals.
- Participated in laboratory audits, EPA and NMED Inspections, and other formal on-site visits.
- Provided training and supervision of new employees in biological and biochemical techniques for the radiation counting department.

PUBLICATIONS

Buckley, Kevin J., Lisa J. Henne, Mike T. Saladen, Marc Bailey, and Richard Meyerhoff, *Evaluation of Macroinvertabrate Communities and Habitat for Selected Stream Reaches at Los Alamos National Laboratory* (LA-UR-03-8336)

Moss, David, Mike Saladen, et. al, *Elimination of Liquid Discharge to the Environment from the TA-50 Radioactive Liquid Waste Treatment Facility* (LA-13452-MS)

Veenis, Steven J., and Michael T. Saladen, *Implementation of the Los Alamos National Laboratory's Multi-Sector General Permit for Storm Water Discharges* (LA-UR 03-1893)

Reynolds, Robin P., Michael T. Saladen, et al. *Los Alamos National Laboratory Comprehensive Tank Survey* (LA-UR-03-4943)

Gonzales, G. J., M. T. Saladen, and T. E. Hakonson, *Effects of Pocket Gopher Burrowing on Cesium-133 Distribution on Engineered Test Plots*, *J. Environ. Qual.* (26)(6:1056-1062), November-December 1995

Contributing author to SWEIS Yearbook and Environmental Surveillance Report (1991-2005)