No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

_____♦_____

STATE OF TEXAS,

Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,

Defendants.

_____♦_____

OFFICE OF THE SPECIAL MASTER

_____♦_____

STATE OF NEW MEXICO'S CONSOLIDATED STATEMENT OF MATERIAL FACTS

_____♦_____

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INTRODUCTION

Pursuant to Federal Rule of Civil Procedure 56, New Mexico provides this consolidated statement of material facts, in connection with its responses to Texas's and the United States' motions for partial summary judgment. This consolidated set includes all of the Undisputed Material Facts ("UMF") from the (i) State of New Mexico's Motion for Partial Summary Judgment to Exclude Claims for Damages in Years that Texas Failed to Provide Notice to New Mexico of its Alleged Shortages (Nov. 5, 2020) ("Notice Brief"), (ii) State of New Mexico's Motion for Partial Summary Judgment to Exclude Texas's Claim for Damages in Certain Years and Brief in Support (Nov. 5, 2020) ("Full Supply Brief"), and (iii) State of New Mexico's Motion for Partial Summary Judgment on Compact Apportionment and Brief in Support (Nov. 5, 2020) ("Apportionment Brief"), in addition to any additional material facts that New Mexico alleges for the purposes of its response to the Texas and United States motions for partial summary judgment. In its response briefs, New Mexico refers to the enumerated statements of fact herein using the following citation format: NM-CSMF ¶ __. Thus, a citation to "NM-CSMF ¶ 14" refers to the statement of fact in the fourteenth numbered paragraph of this document.

Please note that the references to exhibits in this set of Consolidated Statement of Material Facts use the following designations:

Designation	Reference
NM-EX	This designation refers to a numbered New Mexico Exhibit as identified in the Supplemental New Mexico Exhibit Compendium: Index, filed contemporaneously, and as those exhibits are identified in the briefing and declarations filed by New Mexico.
TX_MSJ	This designation refers to a Bates stamped page or page range that Texas produced in connection with its Appendix of Evidence in Support of State of Texas's Notice of Motion and Motion for Partial Summary Judgment; Memorandum of Points and Authorities in Support Thereof, Federal Rule of Civil Procedure 56 (Nov. 5, 2020), as those exhibits are identified in the briefing and declarations filed by New Mexico.

Note further that this document does not contain any references to the Appendix to the United States of America's Memorandum in Support of Motion for Partial Summary Judgment (Nov. 5). Where New Mexico refers to any documents contained with the United States' Appendix, New Mexico will refer to a version of the documents that is reproduced as a New Mexico Exhibit. This is because the United States did not provide any exhibit numbers.

To the extent possible, New Mexico organized these allegations of fact in a categorical manner that groups facts bearing on similar topics together. For the convenience of the Court, New Mexico indicates whether any statement of fact previously appeared as an UMF in the Notice Brief, Full Supply Brief, or Apportionment Brief by its UMF number using brackets following the statement of fact: e.g., [Apportionment UMF No. 1]. These previously designated UMFs are identical to New Mexico's prior allegations with the potential exception of minor, conformity-minded formatting changes.

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CONSOLIDATED STATEMENT OF MATERIAL FACTS

I. DEVELOPMENT OF THE RIO GRANDE PROJECT

1. Following an investigation, the Reclamation Service (precursor to the Bureau of Reclamation) (both the Reclamation Service and Bureau of Reclamation are referred to herein as "Reclamation") recommended that Congress authorize a storage reservoir near Elephant Butte, New Mexico, rather than an alternative site at El Paso, Texas, to capture, store, and regulate torrential and storm water flows in the Upper Rio Grande. *See* NM-EX 300, F.H. Newell, *Second Annual Report of the Reclamation Service*, H.R. Doc. No. 58-44, at 375-80 (1904); NM-EX 301, B.M. Hall, *A Discussion of the Past and Present Plans for Irrigation of the Rio Grande Valley*, 52 (Nov. 1904); NM-EX 106, Kryloff Rep. at 6; *see also Texas v. New Mexico*, 138 S. Ct. 954, 957(2018) ("The federal government responded by proposing, among other things, to build a reservoir and guarantee Mexico a regular and regulated release of water. Eventually, the government identified a potential dam site near Elephant Butte, New Mexico, about 105 miles north of the Texas state line."). [Apportionment UMF No. 1].

2. At the Twelfth National Irrigation Congress in 1904, Reclamation engineer Benjamin Hall reported that the proposed reservoir at Elephant Butte was preferable to the project proposed near El Paso because it would have a greater storage capacity, would minimize flooding that would render unusable irrigable land in New Mexico, and would impound sufficient water to irrigate 110,000 acres in New Mexico in addition to making deliveries to Mexico and irrigable land in Texas. NM-EX 303, Guy Elliott Mitchell, *The Official Proceedings of the Twelfth National Irrigation Congress Held at El Paso, Texas, Nov. 15-16-17-18, 1904*, 213-15 (1905); *see also* NM-EX 111, Miltenberger Rep. at 8; NM-EX 112, Stevens Rep. at 17. [Apportionment UMF No. 2].

3. The Reclamation proposal recommended delivery of water as between the lands in southern New Mexico and Texas based on the ratio of project lands within each state. NM-EX 220, Miltenberger Dep. (June 8, 2020) at 39:7-20. [Apportionment UMF No. 3].

4. Delegates from Mexico, New Mexico, and Texas at the Irrigation Congress each approved the Reclamation proposal and unanimously passed a resolution declaring that the proposed project would affect "an equitable distribution of the waters of the Rio Grande with due regard to the rights of New Mexico, Texas and Mexico." NM-EX 303, Guy Elliott Mitchell, *The Official Proceedings of the Twelfth National Irrigation Congress Held at El Paso, Texas, Nov. 15-16-17-18, 1904*, 107 (1905); NM-EX 111, Miltenberger Rep. at 9; NM-EX 106, Kryloff Rep. at 6. [Apportionment UMF No. 4].

5. In support of Congressional authorization to begin work on the reservoir, the Reclamation Service Director testified to Congress that the project would be engineered to supply enough water to irrigate 20,000-25,000 acres in Mexico, 110,000 in New Mexico, with the "balance" to Texas. Mr. Newell further testified that "New Mexico, Texas, and old Mexico will divide the water in about the proportion stated." *See* NM-EX 305, The Reclamation Work of the Government Under the National Irrigation Act: Hearing Before the H. Comm. on Irrigation of Arid Lands, 59 Cong. 222 (1906) (statement of Frederick Newell, Reclamation Service Director); NM-EX 112, Stevens Rep. at 18. [Apportionment UMF No. 5].

6. In 1906, the United States entered into a treaty with the Republic of Mexico for annual delivery of 60,000 acre-feet of water to the Acequia Madre, above Juarez, in years of full supply, with proportionate reductions in times of shortage. NM-EX 307, Distribution of the Waters of the Rio Grande, Mex.-U.S., May 21, 1906, 34 Stat. 2953; NM-EX 111, Miltenberger Rep. at 9; *see also Texas v. New Mexico*, 138 S. Ct. 954, 957 (2018) ("in 1906, the United States agreed by treaty to deliver 60,000 acre-feet of water annually to Mexico upon completion of the new reservoir.") [Apportionment UMF No. 6].

7. In 1907, Congress authorized construction to begin on the Elephant Butte Reservoir. An Act Making Appropriations for Sundry Civil Expenses of the Government for the Fiscal Year Ending June Thirtieth, Nineteen Hundred and Eight, and for Other Purposes, Pub. Law No. 59-253, 34 Stat. 1295 (1907); NM-EX 112, Stevens Rep. at 19. [Apportionment UMF No. 7].

8. In its initial conception, Reclamation engineered the Project to deliver an annual release between 750,000 acre-feet and 800,000 acre-feet, enough to provide 60,000 acre-feet of water to Mexico and to irrigate 155,000 acres in the United States (assuming delivery of three acre-feet per acre, plus twenty percent loss in the distribution system), of which 110,000 acres would be situated in New Mexico and 45,000 in Texas. *See* NM-EX 310, Fund for Reclamation of Arid Lands, H.R. Doc. 61-1262, at 106 (1911); NM-EX 112, Stevens Rep. at 21. [Apportionment UMF No. 8].

9. Reclamation appropriated water for the Project under New Mexico territorial law, consistent with Section 8 of the Reclamation Act. Specifically, Reclamation provided notice to the Territorial Engineer for the Territory of New Mexico to appropriate and store 730,000 acre-feet per year at Elephant Butte Reservoir in 1906 and to appropriate all "unappropriated waters of the Rio Grande" at Elephant Butte in 1908. *See* NM-EX 306, Letter from B.M. Hall, Supervising Engineer, United States Reclamation Service, to David L. White, Territorial Irrigation Engineer, Territory of New Mexico (Jan. 23, 1906); NM-EX 309, Letter from Louis C. Hill, Supervising Engineer, United States Reclamation Service, to Vernon L. Sullivan, Territorial Engineer, Territory of New Mexico (Apr. 1908); NM-EX 111, Miltenberger Rep. at 9-10; *see also Texas v. New Mexico*, 138 S. Ct. 954, 957 (2018) ("After obtaining the necessary water rights, the United States began construction of the dam in 1910 and completed it in 1916 as part of a broader infrastructure development known as the Rio Grande Project."). Ultimately, the Rio Grande water appropriated by the United States was limited by the size of the Project. [Apportionment UMF No. 9; similar language in Notice UMF No. 8].

10. From that point forward, the New Mexico State Engineer considered the surface waters of the Rio Grande below Elephant Butte Reservoir to be fully appropriated. *See* NM-EX 002, D'Antonio Decl. at ¶ 9; NM-EX 200, Barroll Dep. (Aug. 10, 2020) at 424:15-425:4, 426:13-18; NM-EX 106, Kryloff Rep. at 26-27; NM-EX 205, D'Antonio Dep. (June 26, 2020) at 274:1-5. [Notice UMF No. 8].

11. Notably, the water that Reclamation appropriated in its 1906 and 1908 filings with the New Mexico Territorial Engineer did not include groundwater. NM-EX 112, Stevens Rep. at 11; *see also* NM-EX 113, Stevens Reb. Rep. at 8. *Cf.* NM-EX 310, Fund for Reclamation of Arid Lands, H.R. Doc. No. 61-1262, at 106-07 (1911) (discussing return seepage as a source of project supply without mention of groundwater resources).

12. In 1915, while Project construction was ongoing, Reclamation began water deliveries through the Project. *See* NM-EX 404, Robert Autobee, United States Bureau of Reclamation, *Rio Grande Project*, at 12 (1994); NM-EX 311, United States Reclamation Service, *Project History Rio Grande Project Year 1915*, at 137-141 (1915). [Apportionment UMF No. 10; similar language in Notice UMF No. 11].

13. By 1919, construction of the Elephant Butte Dam and the major diversion works of the Project was complete. NM-EX 312, United States Reclamation Service, *Project History Rio Grande Project Year 1919*, at 4-5 (1919) (reporting "practical completion of the main canal system, including diversion dams, for the lands of the New Mexico and El Paso County Irrigation Districts"); *see also* NM-EX 111, Miltenberger Rep. at 10. [Apportionment UMF No. 11].

14. By 1921, Reclamation reported that the final "determined irrigable area of the project" in the United States was 155,000 acres. *See* NM-EX 313, United States Reclamation Service, *Project History Rio Grande Project Year 1921*, at 6-7 (1921); NM-EX 106, Kryloff Rep. at 23. [Apportionment UMF No. 12].

II. NEGOTIATION OF THE RIO GRANDE COMPACT

15. Upon completion of the major storage and diversion works for the Project, Colorado proposed to New Mexico legislation authorizing a joint commission between the two states, and New Mexico and Colorado each appointed commissioners in 1923 to negotiate an interstate compact regarding development upstream of Elephant Butte Reservoir. *See* NM-EX 111, Miltenberger Rep. at 11; NM-EX 112, Stevens Rep. at 29. [Apportionment UMF No. 13].

16. After the first meeting of the Colorado and New Mexico commissioners in 1924, Texas petitioned the Secretary of Commerce, who served as the federal representative, to "accord[] [to the Texas] the same representation upon that Commission which is accorded to the States of New Mexico and Colorado." *See* NM-EX 314, Letter from Pat M. Neff, Governor, State of Texas, to Herbert Hoover, Secretary of Commerce (Sept. 20, 1924); NM-EX 111, Miltenberger Rep. at 12. [Apportionment UMF No. 14].

17. The New Mexico Compact Commissioner supported the inclusion of Texas in further compact negotiations. He wrote the New Mexico Governor that the exclusion Texas "assumed" that Reclamation would "protect[]" the rights of the Project in negotiations, but this assumption proved false because "the Reclamation Service apparently decided to take no action whatever looking to the presentation of the rights of the Rio Grande Project either as to lands in New Mexico or Texas, although it was expected that this would be done." *See* NM-EX 315, Letter from J.O. Seth, Commissioner, State of New Mexico, to A.T. Hannett, Governor, State of New Mexico, at 3 (Feb. 20, 1925). [Apportionment UMF No. 15].

18. Compact negotiations resumed in 1928 following the appointment of a Texas commissioner. Those initial negotiations resulted in a temporary compact in February 1929. *See* NM-EX 111, Miltenberger Rep. at 13; NM-EX 112, Stevens Rep. at 29, 35, 40; NM-EX 316, Rio Grande Compact Commission, *First Annual Report of the Rio Grande Compact Commission*, 1-10 (1931). [Apportionment UMF No. 16].

19. During the negotiations leading to the 1929 temporary compact, New Mexico represented the potentially opposing interests of water users in the State below Elephant Butte Reservoir and those of upstream users in the Middle Rio Grande Conservancy District ("MRGCD"). New Mexico took the position that fostering development in the MRGCD helped both sets of users, since it permitted development of acreage in the Middle Valley through the drainage of lands; downstream water users in both New Mexico and Texas accepted and agreed with engineering studies showing that MRGCD development would better regulate flows into the Elephant Butte Reservoir as well as augment volumes. *See* NM-EX 011, Stevens 2d Decl. at ¶¶ 6-8; NM-EX 112, Stevens Rep. at 34-35; *see also, e.g.*, NM-EX 340, E.P. Osgood, *Report on Water Supply Irrigation and Drainage in the San Luis Basin of the Rio Grande*, Appx. D at ¶ 1 (1928).

20. During these negotiations in the 1920s, Texas' apparent goal was to permit future additional developments throughout the basin. *See* NM-EX 011, Stevens 2d Decl. at ¶ 12; NM-EX 340, E.P. Osgood, *Report on Water Supply Irrigation and Drainage in the San Luis Basin of the Rio Grande*, Appx. D at ¶ 12 (1928).

21. The 1929 temporary compact contained explicit language to freeze depletions by preventing any development that would "impair" flows. NM-EX 316, Rio Grande Compact Commission, *First Annual Report of the Rio Grande Compact Commission*, 1-10 (1931) (containing the temporary compact); NM-EX 011, Stevens 2d Decl. at ¶ 22.

22. In December 1935, the Rio Grande Compact Committee met to continue negotiations. At that meeting, officials from the National Resources Committee presented a proposal for a comprehensive study of the Rio Grande in order to facilitate an agreement. *See* NM-EX 317, Proceedings of the Rio Grande Compact Commission held in Santa Fe, New Mexico December 2-3, 1935, at 5-7 (1935); NM-EX 112, Stevens Rep. at 55. [Apportionment UMF No. 17].

23. This proposed comprehensive study became the Rio Grande Joint Investigation [("RGJI")]. According to the authors, the "prime purpose" of the investigation was "to determine the basic facts needed in arriving at an accord" among the states "on an allocation and use of Rio Grande waters in the future development of the upper basin." NM-EX 318, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, 10-11 (1937); NM-EX 112, Stevens Rep. at 62. [Apportionment UMF No. 18].

24. One category of required information was accurate data concerning existing diversions, including those of the Project. The Joint Investigation Report collected available data to prepare and present a comprehensive analysis of actual diversions, including diversions between Elephant Butte Reservoir and Fort Quitman, Texas, for the period 1930-36. The Joint Investigation Report also catalogued Project Acreage, including lands for "Cities, Towns, and Villages." *See* NM-EX 318, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, 11, at 14-16 (1937); NM-EX 112, Stevens Rep. at 64. [Apportionment UMF No. 19].

25. Texas objected to any rigorous groundwater investigation below Elephant Butte Reservoir as part of the RGJI. *See* NM-EX 011, Stevens 2d Decl. at ¶ 31; NM-EX 113, Stevens Reb. Rep. at 6-7. Texas took the position that significant groundwater investigation was unnecessary because "groundwater supplies along the Rio Grande are of little importance in relation to the total supply."

NM-EX 345, Letter from Raymond A. Hill, Engineer Advisor, State of Texas, to Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas (Jan. 27, 1936); *see also* NM-EX 346, Letter from Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas, to National Resources Committee (Feb. 1, 1936). As such, the Rio Grande Joint Investigation involved little study of groundwater resources below Elephant Butte Reservoir and drew no conclusions regarding groundwater below Elephant Butte. NM-EX 112, Stevens Rep. at 56-57; NM-EX 318, Stevens Reb. Rep. at 12-13; NM-EX 011, Stevens 2d Decl. at ¶ 31; NM-EX, 318, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, at 62 (1937). What little treatment the RGJI report does devote to groundwater below Elephant Butte is concerned with whether the drains were sufficient to lower the water table and prevent seeped lands. NM-EX 112, Stevens Rep. 64; *e.g., See* NM-EX 318, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, at 62 (1937).

26. The RGJI found that return flows were an important part of Project Supply. The report states that total measured return flows was 50 percent of the average of total net diversions in the same period." NM-EX 38, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, at 13 (1937). This means that the amount of total annual drain flow, throughout the Project and throughout the calendar year, is equal to approximately 50% of the amount of water diverted at Project headings. NM-EX 100, Barroll Rep. at 14-15, Appx. C, C-4-8; *see also* NM-EX 006, Barroll 2d Decl. at ¶ 48.

27. In entering negotiations, New Mexico stressed that for it to agree, the final compact needed to provide that "[a]ll existing rights to the use of water in the Rio Grande Basin in New Mexico shall be recognized as having the right to an adequate supply of water from said river system." This position was important to New Mexico, in part, because the surface water in the Lower Rio Grande in New Mexico was fully appropriated and New Mexico expected the final compact to protect those existing rights. *See* NM-EX 319, Rio Grande Compact Commission, *Proceedings of the Meeting of the Rio Grande Compact Commission Held in Santa Fe, New Mexico, September 27, to October 1, 1937*, at 12-13 (1937); NM-EX 111, Miltenberger Rep. at 25; NM-EX 112, Stevens Rep. at 65; NM-EX 005, Stevens Decl. at ¶ 8; NM-EX 002, D'Antonio Decl. at ¶ 9. [Apportionment UMF No. 20].

28. With regard to water use below Elephant Butte, New Mexico's negotiation position sought to protect the Project as a unit, ensuring that it received a stable supply necessary to water all of the lands within the New Mexico portion of the Project, while simultaneously ensuring that the reservoir's agreed-upon "normal release" figure was not higher than was fair for the State's upstream users. *See* NM-EX 011, Stevens 2d Decl. at ¶¶ 9-10, 15-20, 26-28; NM-EX 112, Stevens Rep. at 34-35, 66-69; *see, e.g.*, Letter from Thomas M. McClure, State Engineer, State of New Mexico, to S.O. Harper, Chairman, Rio Grande Compact Commission (Jan 25, 1938) (produced at TX_MSJ_005303); E.B. Debler et al., Committee of Engineering Advisers, Rio Grande Compact Commission, *Report to the Rio Grande Compact Commission by the Engineer Advisers on New Mexico Objections to Their Report of Dec. 27, 1937* (Mar. 4, 1938 (produced at TX_MSJ_005311).

29. The Engineer Advisors for the three states used the [RGJI] to prepare a Report of Committee of Engineers to the Rio Grande Compact Commissions, dated December 27, 1937.The

express "general purpose" of this report was to recommend apportionment among three divisions of the Rio Grande—the San Luis Valley, the "Middle Rio Grande from Lobatos to Elephant Butte Reservoir," and the Project from Elephant Butte Reservoir to Fort Quitman, Texas—according to a "general policy" that "present uses of water in each of the three States must be protected in formulation of the Compact." *See* NM-EX 322, Letter from E.B. Debler, et al., Committee of Engineer Advisors, Rio Grande Compact Commission, to Rio Grande Compact Commission (Dec. 27, 1937); NM-EX 111, Miltenberger Rep. at 29; NM-EX 112, Stevens Rep. at 67-68. [Apportionment UMF No. 21].

30. The Committee of Engineers initially recommended a "normal release" from Elephant Butte Reservoir of 800,000 acre-feet per annum. *See* NM-EX 322, Letter from E.B. Debler, et al., Committee of Engineer Advisors, Rio Grande Compact Commission, to Rio Grande Compact Commission (Dec. 27, 1937); NM-EX 112, Stevens. Rep. at 67-68. [Apportionment UMF No. 22].

31. Following negotiations, the Committee of Engineers revised its recommendation to provide for a normal release from the Reservoir of 790,000 acre-feet per year to meet the irrigation demands of Project lands in New Mexico and Texas and to make the 1906 treaty delivery to Mexico. *See* NM-EX 325, Letter from Thomas M. McClure, State Engineer, State of New Mexico, to S.O. Harper, Chairman, Rio Grande Compact Commission (Jan. 25, 1938), *in* Rio Grande Compact Commission, *Proceedings of the Meeting of the Rio Grande Compact Commission Held at Santa Fe, New Mexico, March 3rd to March 18th, inc.* 1938, at CO-006216 (1938); NM-EX 325, Letter from E.B. Debler, et al., Committee of Engineer Advisors, Rio Grande Compact Commission, to Rio Grande Compact Commission (Mar. 9, 1938), *in* Rio Grande Compact Commission, *Proceedings of the Meeting of the Rio Grande Compact Commission Held at Santa Fe, New Mexico, March 3rd to March 18th, inc.* 1938, at CO-006226-33 (1938); NM-EX 112, Stevens Rep. at 68-70; NM-EX 111, Miltenberger Rep. at 33, 37-39. [Apportionment UMF No. 23].

32. On March 18, 1938, the members of the Rio Grande Compact Commission ("RGCC") each executed the final Rio Grande Compact. Congress gave its approval to the Rio Grande Compact on May 31, 1939. *See* NM-EX 325, Rio Grande Compact Commission, *Proceedings of the Meeting of the Rio Grande Compact Commission Held at Santa Fe, New Mexico, March 3rd to March 18th, inc. 1938*, 34-35 (1938); An Act Giving Consent and Approval of Congress to the Rio Grande Compact Signed at Santa Fe, New Mexico, on March 18, 1938, Pub. Law No. 76-95, 53 Stat. 785 (1939). [Apportionment UMF No. 24].

33. The historical record contains no evidence that the negotiators expressly addressed groundwater development. *See* NM-EX 112, Stevens Rep. 11-12, ¶ 6; NM-EX 240, Kryloff Dep. (Aug. 6, 2020) 57:1-10, 118:10-119:13; NM-EX 241, Miltenberger Dep. (June 8, 2020) 99:8-101:22, 103:13-24, 105:9-106:23.

III. TERMS OF THE RIO GRANDE COMPACT

34. The preamble of the Rio Grande Compact of 1983 [("Rio Grande Compact" or "Compact")] states: "The State of Colorado, the State of New Mexico, and the State of Texas, desiring to remove all causes of present and future controversy among these States and between

citizens of one of these States and citizens of another State with respect to the use of the waters of the Rio Grande above Fort Quitman, Texas, and being moved by considerations of interstate comity, and for the purpose of effecting an equitable apportionment of such waters, have resolved to conclude a Compact for the attainment of these purposes . . . ." NM-EX 330, Compact. [Apportionment UMF No. 25].

35. Article I(c) of the Compact defines the term "Rio Grande Basin" to mean "all of the territory drained by the Rio Grande and its tributaries in Colorado, in New Mexico, and in Texas above Fort Quitman, including the Closed Basin in Colorado." NM-EX 330, Compact at Art. I(c). *See* NM-EX 008, Lopez 2d Decl. at ¶ 5.

36. Article I, Paragraph (k) of the Compact defines "Project Storage" as "the combined capacity of Elephant Butte Reservoir and all other reservoirs actually available for the storage of usable water below Elephant Butte and above the first diversion to lands of the Rio Grande project, but not more than a total of 2,638,860 acre-feet." NM-EX 330, Compact at Art. I(k). [Apportionment UMF No. 26; similar language in Full Supply UMF No. 6].

37. The limit on Project Storage within the Compact accords with what was considered the maximum capacity of Elephant Butte Reservoir. *See* NM-EX 107, Lopez Rep. at 15. [Apportionment UMF No. 27].

38. The Compact contemplates that usable water will be released from storage to meet irrigation demands. Article I, Paragraph (*l*) of the Compact defines "Usable Water" as "all water, exclusive of credit water, which is in project storage and which is available for release in accordance with irrigation demands, including deliveries to Mexico." NM-EX 330, Compact at Art. I(*l*); NM-EX 107, Lopez Rep. at 16. [Apportionment UMF No. 28; similar language in Full Supply UMF No. 6].

39. Article I, Paragraph (o) of the Compact defines "Actual Release" as "the amount of usable water released in any calendar year from the lowest reservoir comprising project storage." NM-EX 330, Compact at Art. I(o). [Apportionment UMF No. 29].

40. Article I, Paragraph (p) of the Compact defines "Actual Spill" as "all water which is actually spilled from Elephant Butte Reservoir, or is released therefrom for flood control, in excess of the current demand on project storage and which does not become usable water by storage in another reservoir; provided, that actual spill of usable water cannot occur until all credit water shall have been spilled." NM-EX 330, Compact at Art. I(p). [Apportionment UMF No. 30].

41. Article I, Paragraph (q) of the Compact defines "Hypothetical Spill" as "the time in any year at which usable water would have spilled from project storage if 790,000 acre-feet has been released therefrom at rates proportion to the actual release in every year from the starting date to the end of the year in which hypothetical spill occurs." NM-EX 330, Compact at Art. I(q). [Apportionment UMF No. 31].

42. Article II of the Compact specifies that stream gaging stations be established at specific locations in the Rio Grande Basin for the purposes of Compact accounting. The lowest required stream gage under Article II is just below Caballo Reservoir. *See* NM-EX 330, Compact at Art.

II; NM-EX 107, Lopez Rep. at 18. [Apportionment UMF No. 32]. See also NM-EX 008, Lopez 2d Decl. at ¶ 6.

43. Article III of the Compact specifies two delivery schedules for Colorado: one for the Conejos River and one for the Rio Grande exclusive of the Conejos River. NM-EX 330, Compact at Art. III; *see also* NM-EX 008, Lopez 2d Decl. at ¶ 7.

44. Article IV of the Compact defines New Mexico's obligation to deliver water from the Rio Grande to San Marcial based upon nine (9) non-summer months of river flows. The delivery obligation at San Marcial is defined by a mathematical relationship corresponding to recorded flow at the Otowi gage during those months. The Otowi gage [is] located in New Mexico about 100 miles south of the Colorado border. The San Marcial gage was located just upstream of Elephant Butte Reservoir. *See* NM-EX 330, Compact at Art. IV; NM-EX 107, Lopez Rep. at 20. [Apportionment UMF No. 33].

45. In 1948, the RGCC changed New Mexico's delivery schedule under Article IV of the Compact to require deliveries at Elephant Butte Reservoir, rather than San Marcial, and removed the Article II gaging stations at San Marcial and San Acacia. *See* NM-EX 331, Rio Grande Compact Commission, *Tenth Annual Report of the Rio Grande Compact Commission*, at 17-18 (1948); NM-EX 107, Lopez Rep. at 18-22. [Apportionment UMF No. 34].

46. The 1948 amendment also removed a requirement from Article IV to adjust the scheduled delivery amounts based on depletion of tributary runoff between Otowi Bridge and San Marcial during July, August, and September by works constructed after 1937. *See* NM-EX 008, Lopez 2d Decl. at ¶ 34; *see also See* NM-EX 331, Rio Grande Compact Commission, *Tenth Annual Report of the Rio Grande Compact Commission*, at 17-18 (1948); NM-EX 107, Lopez Rep. at 17-18.

47. Article VI of the Compact defines procedures to determine the annual credits and debits for Colorado and New Mexico. Of note, Article VI permits Colorado and New Mexico to authorize releases of Credit Water to avoid spill in excess of downstream demand and permits such releases to be included in the accounting of an Actual Spill. *See* NM-EX 330, Compact at Art. VI; NM-EX 107, Lopez Rep. at 22-23. [Apportionment UMF No. 35].

48. The Compact separately defines "Annual Debits," "Annual Credits," "Accrued Debits," and "Accrued Credits." These distinctions indicate that each state's credit or debit balance is subject to annual accounting. *See* NM-EX 330, Compact at Art. I(g)-(j), VI; NM-EX 008, Lopez 2d Decl. at ¶ 12; NM-EX 107, Lopez Rep. at 16-17.

49. Article VII of the Compact prohibits any increase in storage by either New Mexico or Colorado in reservoirs constructed after 1929 if the volume of Usable Water in Project Storage is less than 400,000 acre-feet. This threshold value decreases if the aggregate releases from Project [S]torage have averaged more than 790,000 acre-feet from the beginning of the calendar year following the effective date of the Compact, or from the beginning of the calendar year following an Actual Spill, before the storage limitation takes effect. Further, the article permits that either Colorado or New Mexico may offer to relinquish accrued Credit Water to Texas, and Texas may accept such an offer at its discretion. If New Mexico and Texas agree on a relinquishment, the relinquished Credit Water becomes Usable Water and is available for use on lands in both New

Mexico and Texas. *See* NM-EX 330, Compact at Art. VII; NM-EX 107, Lopez Rep. at 23. [Apportionment UMF No. 36].

50. If Texas agrees to New Mexico's or Colorado's offer to relinquish Credit Water, the state that has so relinquished has a right to store a like amount of water in the upstream post-1929 reservoirs. Texas has sole authority to accept relinquishment of Accrued Credits. However, neither Colorado nor New Mexico is obligated to offer such relinquishment. In other words, Texas cannot compel such relinquishment. *See* NM-EX 330, Compact at Art. VII; NM-EX 008, Lopez 2d Decl. at ¶¶ 14, 15; NM-EX 107, Lopez Rep. at 23.

51. The Compact provides that "a normal release … from Project Storage" is 790,000 acre-feet. NM-EX 001, Barroll Decl. at ¶ 16; NM-EX 330, Compact at Art. VIII; *see also* NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 17 (Sept. 30, 2016) (describing a full allocation release to be 790,000 acre-feet per year as provided in the Compact). [Full Supply UMF No. 6].

52. Article VIII of the Compact permits New Mexico to demand of Colorado, and Texas to demand that Colorado and New Mexico, in January, release of water then held in storage from post-1929 reservoirs upstream of Elephant Butte to the amount of any accrued debits of Colorado and New Mexico, respectively, as necessary to help bring the amount of water in Project Storage up to 600,000 acre feet by March first. The purpose of this provision is to bring the quantity of Usable Water in Project Storage to 600,000 acre-feet by March first and to maintain this quantity until April thirtieth to allow for a normal release of 790,000 acre feet in that year. *See* NM-EX 330, Compact at Art. VIII. [Apportionment UMF No. 37].

IV. THE STATES' UNDERSTANDING OF THE COMPACT

A. Indications of Intent in the Structure of the Compact

53. The text and structure of the Compact indicate that the Project, Compact, and Downstream Contracts are inextricably intertwined. The Compact incorporates the definition of Project Storage into a number of provisions. See NM-EX 330, Compact, Articles I(*l*)-(q), VI, VII, and VIII; NM-EX 008, Lopez 2d Decl. at ¶ 4; NM-EX 107, Lopez Rep. at 15-25.

54. An intent to protect the Project is evident in the delivery obligations in Articles III and IV. These constraints primarily benefit the Project. The schedules in Articles III and IV of the Compact were derived from streamflow data that was available in 1938. This assured that existing uses as of 1938 in Colorado, in New Mexico above Elephant Butte Reservoir and in the Rio Grande Project area below Elephant Butte were all protected while allowing Compact operation in variable hydrology. Further, both Colorado and New Mexico were allowed to develop additional water resources after 1938 subject to certain constraints that are specified in Articles VI, VII and VIII. Notably, those constraints do not preclude additional depletions but do constrain operations of post-1929 upstream reservoirs depending on the conditions at Elephant Butte Reservoir. To the extent that those Articles protect Project Supply during relatively dry periods, those protections benefit New Mexico below Elephant Butte, Texas, and Mexico. *See* NM-EX 008, Lopez 2d Decl. at ¶¶ 8, 11, 18; *see also* NM-EX 330, Compact, at Arts. III-IV; NM-EX 107, Lopez Rep. at 22-26.

55. In its protection of preexisting uses as of 1938, the Compact protects certain pre-Compact rights in New Mexico that are not part of the Project. *See* NM-EX 008, Lopez 2d Decl. at ¶ 30; NM-EX 237, Rule 30(b)(6) Dep. of the State of New Mexico by and through Lopez (Sept. 18, 2020) at 83:3-85:16.

56. There is not any indication in the Compact that the states intended to adopt a 1938 Condition. First, the plain text of the Compact does not refer to any 1938 Condition, in contrast to other interstate water compacts of the era, such as the Pecos River Compact, NMSA 1978 § 72-15-19 (1947). Second, the Downstream Contracts similarly do not refer to any 1938 condition. Third, the Downstream Contracts do not define a total volume of water to which the Districts are entitled. *See* NM-EX 008, Lopez 2d Decl. at ¶¶ 24-25; *see also* NM-EX 330, Compact; NM-EX 107, Lopez Rep. at 8, 26-27, 41-43; NM-EX 108, Lopez Reb. Rep. at 6-9.

57. In effect, Article IV deliveries are deliveries into the Project as a whole and benefit New Mexico, Texas, and Mexico. Nothing in Article IV indicates that the Compact vests in Texas control, dominion, or ownership in the water delivered to Elephant Butte Reservoir. Rather, the Compact provides that New Mexico and Texas may each share in releases of "Usable Water," after satisfying the delivery to Mexico pursuant to the 1906 Treaty, to meet irrigation demands in accord with the ordinary operation of the Project and the Downstream Contracts. *See* NM-EX 008, Lopez 2d Decl. at ¶¶ 12, 17, 40; NM-EX 107, Lopez Rep. at 8, 20-22, 26-27; *see also* NM-EX 012, Sullivan Decl. at ¶ 23 (describing a number of reasons why portions of the water delivered into Elephant Butte Reservoir cannot be delivered to Texas).

58. Although the drafters certainly could have done so, the Compact does not define a specific delivery to the New Mexico-Texas state line. Rather, deliveries to Texas and its apportionment are effectuated through the operation of the Rio Grande Project as a single unit that makes Project Supply available equally (i.e., on an acre-foot per annum/acre basis) to all authorized Project lands, whether in New Mexico or in Texas. *See* NM-EX 008, Lopez 2d Decl. at ¶¶ 7, 24; *see also* NM-EX 330, Compact; NM-EX 107, Lopez Rep. at 19-22, 26-27; NM-EX 108, Lopez Reb. Rep. at 6-9, Appx. 1.

59. The absence of gages downstream of the Caballo Reservoir gage in Article II of the Compact also indicates that the compacting States had no intention to guarantee a specific state-line delivery to Texas. Texas has not requested any gages "necessary . . . for the carrying out of the [C]ompact" near the state line. *See* NM-EX 008, Lopez 2d Decl. at ¶ 36.

60. The division of rights under Article VII of the Compact, whereby only New Mexico and Colorado may offer relinquishment of credit water and only Texas may accept, reflects three practical concerns: (1) Texas's sole apportionment under the Compact is entirely below Elephant Butte; (2) Texas is the only Compact party that cannot accrue Credits under the Compact that it could relinquish; and (3) Texas has no post-1929 reservoirs upstream of Elephant Butte within which it could store water. *See* NM-EX 008, Lopez 2d Decl. at ¶ 15; NM-EX 107, Lopez Rep. at 23.

61. Article VIII of the Compact reflects New Mexico's apportionment interest below Elephant Butte Reservoir because it permits New Mexico, independent of Texas, to demand of Colorado a

release of water intended to increase Usable Water in Project Storage. *See* NM-EX 008, Lopez Decl. at ¶ 16; *see also* NM-EX 330, Compact at Art. VIII; NM-EX 107, Lopez Rep. at 24-27.

62. The definition of "normal release" in Article VIII was a negotiated amount reflecting the amount of water thought to be needed for Project irrigation purposes in a given year, including deliveries to Mexico under the 1906 Treaty and an unspecified allowance for flushing salts. There is no indication, in the structure of the Compact, that the normal release assumes any specific amount of return flow. Project return flows occur entirely below the Rio Grande below the Caballo Reservoir gage where releases from Project Storage are measured. Moreover, the Compact does not require the Actual Release in a given year to be 790,000 acre-feet/year, permitting variability to address annual changes in conditions. *See* NM-EX 008, Lopez 2d Decl. at ¶¶ 19-20; NM-EX 107, Lopez Rep. at 8, 17-18, 26-27. The provisions of Articles VII and VIII do not guarantee that 790,000 acre-feet of Usable Water will be available for a normal release in any given year. *See* NM-EX 008, Lopez 2d Decl. at ¶ 21; NM-EX 107, Lopez Rep. at 22-25.

63. To the extent that the Compact negotiators had a nascent understanding of the interactions between groundwater extraction and surface flow, there is no indication in the text that they intended to apportion groundwater below Elephant Butte Reservoir. Initially, the Compact does not make any mention of groundwater. Next, the Compact defines two inflow-outflow schedules above Elephant Butte (Articles III and IV) that effectively require the administration of groundwater use in order to meet delivery obligations at the Colorado state line (Article III) and into Elephant Butte Reservoir (Article IV), but there is no similar mechanism in effect below Elephant Butte Reservoir. *See* NM-EX 008, Lopez 2d Decl. at ¶¶ 22-23, 41.

64. The Compact indicates that New Mexico's apportionment comprises two parts:

a. Colorado's required deliveries under Compact Article III plus inflows between the Colorado-New Mexico state line and Elephant Butte Reservoir *less* New Mexico's delivery obligation to Elephant Butte under Article IV based on the flow at Otowi gage; and

b. 57% of the Project Supply that remains after first having provided for Mexico's allocation under the 1906 Treaty.

NM-EX 008, Lopez 2d Decl. at ¶ 26; *see also* NM-EX 330, Compact; NM-EX 107, Lopez Rep. at 8, 19-22 and 26-27.

65. The Compact indicates that the apportionment to lands in New Mexico below Elephant Butte is to New Mexico. New Mexico would continue to be entitled to its apportionment below Elephant Butte regardless of whether EBID ceased to exist. *See* NM-EX 008, Lopez 2d Decl. at ¶ 30; NM-EX 237, Rule 30(b)(6) Dep. of the State of New Mexico by and through Lopez (Sept. 18, 2020) at 83:3-85:16.

B. Indications of Intent in Extrinsic Evidence

66. The historical record indicates that one purpose of the Compact was to protect the operation of the Project. NM-EX 111, Miltenberger Dep. (June 8, 2020) at 38:8-17, 137:9-138:21; NM-EX 112, Stevens Rep. at 72; NM-EX 005, Stevens Decl. at ¶ 10. *See, e.g.*, NM-EX 319, Rio Grande

Compact Commission, *Proceedings of the Meeting of the Rio Grande Compact Commission Held in Santa Fe, New Mexico, September 27, to October 1, 1937*, at 12-13 (1937). [Apportionment UMF No. 38; similar language in Notice UMF No. 1].

67. The historical record indicates that another purpose of the Compact was to protect existing rights. NM-EX 106, Kryloff Dep. (Aug. 6, 2020) at 108:9-109:18; NM-EX 005, Stevens Decl. at ¶ 11. *See, e.g.*, NM-EX 319, Rio Grande Compact Commission, *Proceedings of the Meeting of the Rio Grande Compact Commission Held in Santa Fe, New Mexico, September 27, to October 1, 1937*, 1at 2-13 (1937); NM-EX 322, Letter from E.B. Debler, et al., Committee of Engineer Advisors, Rio Grande Compact Commission, to Rio Grande Compact Commission (Dec. 27, 1937). [Apportionment UMF No. 39].

68. However, there is no historical evidence indicating that the compacting States intended to freeze conditions in the Rio Grande Basin, as they did in the 1929 temporary compact. Rather, the available historical evidence indicates that each state intended to continue developing their supplies within the limits imposed by the protection of existing uses under the Compact. NM-EX 011, Stevens 2d Decl. at ¶¶ 21, 23-25; NM-EX 008, Lopez 2d Decl. at ¶ 6; NM-EX 112, Stevens Rep. at 56, 68, 81; *see, e.g.*, Letter from S.O. Harper, Chairman, Rio Grande Compact Commission, to Secretary of the Interior (Mar. 26, 1938) (describing the RGJI as a study of all "past, present, *and prospective* uses of water" in the basin) (produced as TX_MSJ_005338-40); NM-EX 352, Rio Grande Compact Commission, *First and Second Annual Reports of the Rio Grande Compact Commission 1939 and 1940*, at 15-19 (Feb. 25, 1941) (adopting rules that "permit[] each State to *develop its water resources at will, subject only to its obligations* to deliver water in accordance with the schedules set forth"); *see also, e.g.*, NM-EX 112, Stevens Rep. at 81 (quoting Letter from Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas, to E.H. Thornton, Jr. (Mar. 23, 1939)).

69. Prior to negotiation of the Compact, Reclamation administered the Project as a single unit. NM-EX 111, Miltenberger Dep. (June 8, 2020) at 41:22-42:12; NM-EX 202, Cortez Dep. (July 30, 2020) at 58:6-18; NM-EX 107, Lopez Rep. at 25. [Apportionment UMF No. 40].

70. In negotiating the Compact, the States understood that all lands within the Project had equal rights to water. NM-EX 111, Miltenberger Dep. (June 8, 2020) at 44:4-23; NM-EX 328, Letter from Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas, to Sawnie B. Smith (Oct. 4, 1938); NM-EX 107, Lopez Rep. at 26-27, 35, 67-68; NM-EX 005, Stevens Decl. at ¶ 11. [Apportionment UMF No. 42].

71. The historical record reflects that the States agreed on 790,000 acre-feet per year as a normal release in the Compact because it was sufficient to satisfy irrigation demands in both New Mexico and Texas, as well as address water quality concerns. NM-EX 220, Miltenberger Dep. (June 8, 2020) at 146:21-148:1; NM-EX 215, Kryloff Dep. (Aug. 6, 2020) at 55:17-56:25, 89:20-90:1; NM-EX 106, Kryloff Rep. at 25-26. [Apportionment UMF No. 43].

72. The historical record indicates that the Compact relied upon the Project and its allocation and delivery of water in relation to the proportion of Project irrigable lands to provide the basis for the apportionment of Rio Grande waters to users in New Mexico and Texas. NM-EX 220,

Miltenberger Dep. (June 8, 2020) at 40:7-22; NM-EX 107, Lopez Rep. at 67-68. [Apportionment UMF No. 44].

73. There is no evidence in the historical record that Texas believed it controlled all of the water being delivered into Elephant Butte; instead, Texas relied on Reclamation to administer the Project Supply, including return flows, according to the Downstream Contracts. NM-EX 011, Stevens 2d Decl. at ¶ 28; NM-EX 112, Stevens Rep. at 74-77.

74. The historical record confirms that historically Project deliveries were made based upon the ratio between Project acreage in New Mexico and Project acreage in Texas. In other words, under the Compact, the delivery of water through the Project was based on the irrigable acres in each state. Historically that ratio is 57% to New Mexico and 43% to Texas. NM-EX 220, Miltenberger Dep. (June 8, 2020) at 39:2-40:6, 47:17-48:18. [Apportionment UMF No. 45].

75. The understanding of the compacting States was that Reclamation would continue to operate the Project [as a unit]. NM-EX 328, Letter from Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas, to Sawnie B. Smith (Oct. 4, 1938) ("Obviously, neither Colorado nor New Mexico could be expected to guarantee any fixed deliveries at the Texas line when the operation of the dam is not within their control but is in the control of an independent agency."); NM-EX 327, J.H. Bliss, *Provisions of the Rio Grande Compact*, 1 (Apr. 2, 1938) ("The measurement of the water at San Marcial rather than the New Mexico-Texas line is necessary because the Elephant Butte Project must be operated at as a unit."); NM-EX 112, Stevens Rep.at 72. [Notice UMF No. 13].

76. Shortly after the Compact was finalized, Texas Commissioner Frank Clayton explained the way that the Compact divided water below Elephant Butte:

> [T]he question of the division of the water released from Elephant Butte reservoir is taken care of by contracts between the districts under the Rio Grande Project and the Bureau of Reclamation. These contracts provide that the lands within the Project have equal water rights, and the water is allocated according the areas involved in the two States. By virtue of the contract recently executed, the total areas is 'frozen' at the figure representing the acreage now actually in cultivation: approximately 88,000 acres for Elephant Butte Irrigation District, and 67,000 for the El Paso County Water Improvement District No. 1, with a 'cushion' of three per cent for each figure. [Apportionment UMF No. 46]

NM-EX 328, Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas, to Sawnie B. Smith (Oct. 4, 1938). The expert historian for the United States agreed that this letter was "an important document" for understanding the way that the Compact divides the water below Elephant Butte. *See* Ex 215, Kryloff Dep. (Aug. 6, 2020) at 41:15-20, 41:21-42:9; NM-EX 106, Kryloff Rep. 12; *see also* NM-EX 220, Miltenberger Dep. (June 8, 2020) at 43:17-44:23. [Apportionment UMF 46].

77. Similarly, shortly after the Compact was finalized, Texas Commissioner Frank Clayton described the operation of the Compact to the Chairman of the Texas Board of Water Engineers. Commissioner Clayton explained:

> Moreover, since the source of supply for all lands above Fort Quitman and below Elephant Butte reservoir, whether in Texas or New Mexico, is the reservoir itself, it could hardly be expected of Colorado and New Mexico that they should guarantee a certain amount of water to pass the Texas state line, since this amount is wholly dependent upon the releases from the reservoir and the reservoir is under the control of an entirely independent agency – the Bureau of Reclamation.
>
> Also, by contract between the New Mexico interests and the Texas interests in the Rio Grande Project, all the lands in the Project have equal water rights, and the acreage to be irrigated is practically "frozen" at its present figures, with a three per cent "cushion."
>
> It is therefore not necessary, even if it were practicable, to make any definite provision in the Compact for the amount of water to pass the Texas-New Mexico state line.

NM-EX 329, Letter from Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas to C.S. Clark, Chairman, Board of Water Engineers, State of Texas (October 16, 1938). [Apportionment UMF No. 47].

78. In 1968, Raymond Hill, the Engineer Advisor for the State of Texas during Compact negotiations, explained "that the Rio Grande Compact Commissioners, at the time of executing the Rio Grande Compact of 1938, anticipated that compliance" with Articles III and IV "would result in enough water entering Elephant Butte Reservoir to sustain an average normal release of 790,000 AF per year from Project storage *for use on lands in New Mexico downstream of Elephant Butte Reservoir* and on lands in Texas and also to comply with the obligations of the Treaty of 1906 for deliveries of water to Mexico." NM-EX 401, Raymond A. Hill, *Development of the Rio Grande Compact of 1938*, at 38 (Oct. 8, 1968) (emphasis added). [Apportionment UMF No. 48].

V. POSITIONS OF THE PARTIES ON THE COMPACT APPORTIONMENT BELOW ELEPHANT BUTTE

A. Position of Texas on the Compact Apportionment Below Elephant Butte

79. Consistent with the Reclamation Act, Texas adjudicated the Project Right in Texas. Specifically, it determined that EPCWID had the right to divert up to 376,000 from the Rio Grande. NM-EX 505, Texas Comm'n on Env't Quality, Certificate of Adjudication No. 23-5940, ¶ 1.b. (Mar. 7, 2007); s*ee also* Final Judgment and Decree, *In re: The Adjudication of Water Rights in the Upper Rio Grande Segment of Rio Grande Basin*, No. 2006-3219 (El Paso Cty. Dist. Ct., Oct. 30, 2006). Using the D1/D2 method, 376,000 AF represents approximately 43% of Project water when there is a full supply. NM-EX 001, Barroll Decl. at ¶ 23. 376,000 AF also represents approximately 43% of Project supply under a normal release of 790,000 AF, once return flows are taken into account. *See, e.g.*, NM-EX 212, Gordon Dep. (July 15, 2020) at 20:11-21:11. [Apportionment UMF No. 83].

80. The Texas Compact Commissioner recognizes that a full supply release from the Project is 790,000 AF, and that Texas water users are entitled to 43% of Project supply and New Mexico

water users are entitled to 57% of Project supply. NM-EX 211, Gordon Dep (July 14, 2020) at 71:18-73:13; NM-EX 212, Gordon Dep. (July 15, 2020) at 11:20-13:21, 20:11-21:11, 121:9-11. [Apportionment UMF No. 84].

81. The Texas Compact Commissioner concedes that Rio Grande water is divided below Elephant Butte by the Downstream Contracts and that the Downstream Contracts "are incorporated into the Compact." NM-EX 212, Gordon Dep (July 15, 2020) at 10:25-12:19, 15:6-16:18. [Apportionment UMF No. 85].

82. The Texas Compact Commissioner concedes that the Project acts as the mechanism by which water users in New Mexico receive 57% of Project supply and water users in Texas are allocated 43% of Project supply. He further concedes that the mechanism for delivering Project water was incorporated into the Compact. NM-EX 212, Gordon Dep. (July 15, 2020) at 10:25-16:24. [Apportionment UMF No. 86]

83. In official remarks at the 2011 RGCC meeting, Texas Compact Commissioner Gordon acknowledged that the Compact apportioned water between New Mexico and Texas based on the 57%-43% split. Specifically, Commissioner Gordon responded to comments of the New Mexico Commissioner by stating "I agree that the purpose of the Compact was to allocate the water between the Districts and the 53[-]47 [sic] as provided in the Compact. I do agree with that." NM-EX 518, Rio Grande Compact Commission, Transcript of the 72nd Annual Meeting (94th Meeting), 59:2-4 (Mar. 30, 2011). [Apportionment UMF No. 87].

84. In 2004, the Texas Compact Engineer Advisor from 1987 to 2015 wrote that "[t]he Compact specifies a normal release of 790,000 acre–feet annually from Project Storage for use in Texas and New Mexico and for delivery of water to Mexico." NM-EX 412, Herman R. Settemeyer, "Rio Grande Project/Rio Grande Compact Operation," in CLE International, *Rio Grande Superconference* G-1, G-2 (2004). [Apportionment UMF No. 88].

85. The Texas Compact Engineer Advisor from 1987 to 2015 testified that "the Rio Grande Compact incorporated the Rio Grande Project." NM-EX 225, Settemeyer Dep. (July 30, 2020) at 41:24-42:10. [Apportionment UMF No. 89].

86. The Texas Compact Engineer Advisor from 1987 to 2015 further testified that "the Rio Grande Project [water] is apportioned 57 – 57 percent to New Mexico and 43 percent to Texas." NM-EX 225, Settemeyer Dep. (July 30, 2020) at 41:24-42:10. [Apportionment UMF No. 90].

87. In May of 2011, Texas and New Mexico met to discuss the implications of the 2008 Operating Agreement on the Compact. Prior to the meeting, Texas had developed a set of talking points that represented Texas's positions on the Rio Grande Compact. A photograph of those talking points is NM-EX 519 (Schmidt-Petersen, Photographs of Handwritten Notes on Easel). NM-EX 003, Lopez Decl. at ¶ 18; NM-EX 004, Schmidt-Petersen Decl. at ¶ 11. Using those talking points, Texas expressed its position that the Compact apportions the water below Elephant Butte between New Mexico and Texas "based on acreage" existing in each State. Texas further explained its position that under the Compact, the State of Texas is entitled to 43% of Project supply and the State of New Mexico is entitled to 57% of Project supply. NM-EX 519, Schmidt-

Petersen, Photographs of Handwritten Notes on Easel; NM-EX 003, Lopez Decl. at ¶ 18; NM-EX 004, Schmidt-Petersen Decl. at ¶ 11. [Apportionment UMF No. 91].

88. Even in this litigation, Texas has admitted on numerous occasions that New Mexico has a Compact apportionment below Elephant Butte Reservoir.

a. In its Complaint in this case, Texas made the following relevant factual allegations:

   i. "[T]he Rio Grande Compact, among other purposes, was entered into to protect the operation of the Rio Grande Reclamation Project." Compl. ¶ 4 (Jan. 8, 2013).

   ii. "Project water deliveries are made based upon the ratio between the irrigable acreage of the Rio Grande Project situated in New Mexico, and the irrigable acreage of the Rio Grande Project situated in Texas. Historically, this ratio has been 57% in New Mexico and 43% in Texas." *Id.* at ¶ 8.

   iii. The Compact "relied upon the Rio Grande Project and its allocation and delivery of water in relation to the proportion of Rio Grande Project irrigable lands in southern New Mexico and in Texas, to provide the basis of the allocation of Rio Grande waters between Rio Grande Project beneficiaries in southern New Mexico and the State of Texas." *Id.* at ¶ 10.

b. Texas's brief in support of its motion to file its complaint referred to Elephant Butte Irrigation District as the entity formed within New Mexico to contract with the United States "for the water allocated *and apportioned* for use within New Mexico." Texas's Brief in Support of Motion to File Complaint 7 (Jan. 2013) (emphasis added).

c. In the course of its briefing on New Mexico's Motion to Dismiss, Texas defined its apportionment as "the water New Mexico delivers to Elephant Butte, less the water provided to Rio Grande Project lands in New Mexico by the Rio Grande Project." Texas' Brief in Response to New Mexico's Motion to Dismiss Texas' complaint and the United States' Complaint in Intervention, 11 (June 16, 2014).

d. Further, in briefing on exceptions to the First Interim Report of the Special Master, Texas averred: "[T]he compact utilizes the Rio Grande Project, operated by the United States, as the single vehicle by which to apportion Rio Grande water to Texas and New Mexico." *See* Texas's Reply to Exceptions to First Interim Report of Special Master, 40 (July 28, 2017) (quotation marks omitted). [Apportionment UMF No. 92]

89. In connection with filing the Complaint in this case, Texas issued a News Release. In that News Release, Texas admitted "[h]istorically, *water apportioned under the Rio Grande Compact* has resulted in approximately 57 percent of the water supply below the Elephant Butte Reservoir being delivered to New Mexico, and 43 percent being delivered across the New Mexico-Texas

state line for Texas." NM-EX 524, Tex. Comm'n on Env't Quality, *News Release*, 2 (Jan. 8, 2013) (emphasis added). [Apportionment UMF No. 93].

90. Every alternate year the Texas Commission on Environmental Quality ("TCEQ") reports to the Texas Legislature about environmental issues, including interstate river compacts. In describing the Rio Grande Compact in 2014, the TCEQ explained "[t]he compact did not contain specific wording regarding the apportionment of water in and below Elephant Butte Reservoir. However, the compact was drafted and signed against the backdrop of the 1915 Rio Grande Project and a 1938 U.S. Bureau of Reclamation contract that referred to a division of *57 percent to New Mexico and 43 percent to Texas*." NM-EX 526, Texas Comm'n on Env't. Quality, *Biennial Report to the 84th Legislature* (2014) (emphasis added). [Apportionment UMF No. 94].

B. Position of the United States on the Compact Apportionment Below Elephant Butte

91. In New Mexico's adjudication of Lower Rio Grande water rights, the United States requested that the New Mexico Adjudication Court "recognize an amount of up to 376,000 acre-feet per year for delivery to Texas." *See* NM-EX 527, Order (1) Granting Summary Judgment Regarding the Amounts of Water; (2) Denying Summary Judgment Regarding Priority Date; (3) Denying Summary Judgment to the Pre-1906 Claimants; and (4) Setting a Scheduling Conference, *New Mexico ex rel. Office of the State Engineer v. Elephant Butte Irr. Dist.*, no. CV-96-888, ¶ 4 (N.M. 3d Judicial Dist., Feb. 17, 2014).[1] As discussed, under the D1/D2 method, 376,000 acre-feet was a full supply for EPCWID, and represents approximately 43% of Project water when there is a full supply. [Apportionment UMF No. 95].

92. Reclamation has recognized that "[b]ecause one district is located in New Mexico (EBID) and the other is located in Texas (EP#1), the operation of the Rio Grande Project has a bearing on each state's claim to the waters of the Rio Grande." NM-EX 503, Briefing Paper by Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation, to Robert W. Johnson, Commissioner, Bureau of Reclamation (Nov. 2, 2006). [Apportionment UMF No. 96].

93. Reclamation has acknowledged the intent of the Compact "to recognize a yearly average of 790,000 AF release from Project storage to satisfy water users" in both States and Mexico. NM-EX 411, Letter from Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation, to William A. Paddock, 2 (Sept. 11, 2002). [Apportionment UMF No. 97].

94. Reclamation has recognized that "[t]he 1938 Rio Grande Compact intended to use the Reclamation Rio Grande Project as the vehicle to guarantee delivery of Texas's, *New Mexico's* and Mexico's equitable apportionment of the Rio Grande waters below Elephant Butte Dam." NM-EX 530, Filiberto Cortez, Bureau of Reclamation, *EBID Depletion Reduction and Offset Program WaterSMART Grant Proposal*, at 1 (emphasis added). [Apportionment UMF No. 98].

[1] In response to the United States request that New Mexico recognize 376,000 AFA for delivery to Texas, the New Mexico Adjudication Court explained that the United States' request was beyond the jurisdiction of the court, but that the "State of New Mexico's offer of judgment appropriately recognizes Project deliveries to Texas as an essential element of the Project." *Id*.

95. At the hearing on New Mexico's Motion to Dismiss in this proceeding, counsel for the United States conceded that the "[P]roject is central to the [C]ompact," that "New Mexico would also, by the same token, have an apportionment" delivered through the Project, and that the Downstream contracts "effectuate the intended apportionment that is made in the [C]ompact." Hrg. Tr. 88:17, 91:6-14, 100:7-18 (Aug. 19, 2015). [Apportionment UMF No. 99].

96. The United States has taken the following relevant positions in this case:

a. "New Mexico receives an additional apportionment of water under the Compact below Elephant Butte Reservoir, and Texas receives its entire equitable apportionment of water, through the Project, in the form of water released by the Project 'in accordance with irrigation demands.' Those deliveries are divided according to the 57% to 43% split reflecting the historical proportion of irrigation acreage in EBID and EPCWID, respectively." Brief for the United States in Opposition to New Mexico's Motion to Dismiss Texas's Complaint and the United States' Complaint in Intervention, 28 (June 2014) (quoting NM-EX 330, Compact at Art. I(l)).

b. "Usable Water" is "available for release in accordance with irrigation demands in lower New Mexico, in Texas, and in Mexico." Reply Brief for the United States on Exceptions by the States of New Mexico and Colorado to the First Interim Report of the Special Master, 6 (July 2017).

c. "To effectuate an equitable apportionment of the waters of the Rio Grande, the compacting States incorporated and relied upon an existing reclamation project 'as the vehicle to guarantee delivery of Texas's *and part of New Mexico's equitable apportionment of the stream*.' The United States agreed to that arrangement through congressional approval of the Compact." *Id.* at 18 (emphasis added) (quoting First Interim Report of the Special Master, 204 (Feb. 9, 2017)).

d. "In the Compact, the States (i) incorporated and relied upon an existing Reclamation project to deliver Texas's and part of New Mexico's equitable apportionment." Sur-Reply Brief for the United States on Exceptions by the States of New Mexico and Colorado to the First Interim Report of the Special Master, 12-13 (September 2017).

e. "[T]he Compact identifies what is to be done with water that is delivered by New Mexico to Elephant Butte Reservoir, and the Compact 'protects the water that is released from Elephant Butte in order for it to reach its intended destination." *Id.* at 13 (quoting First Interim Report of the Special Master, 200 (Feb. 9, 2017)). [Apportionment UMF No. 100].

97. In response to a Request for Admission, the United States admitted for all purposes in this case that "under the Compact, the states relied upon an existing Reclamation project to deliver Texas's and part of New Mexico's equitable apportionment." NM-EX 602, United States of America's Responses to New Mexico's First Set of Requests for Admission, 13 (November 4, 2019) (response to Request for Admission 30). [Apportionment UMF No. 101].

98. The expert historian sponsored by the United States in this case has opined that that the States intended for the Compact to apportion surface water below Elephant Butte Reservoir to New Mexico for the lands in New Mexico under the Rio Grande Project. NM-EX 215, Kryloff Dep. (Aug. 6, 2020) at 52:23-53:8, 73:23-74:9. [Apportionment UMF No. 102.]

C. Position of New Mexico on the Compact Apportionment Below Elephant Butte

99. Consistent with the Reclamation Act (and the adjudication in Texas), New Mexico adjudicated the Project Right in New Mexico. In accordance with the Compact, the New Mexico Adjudication Court established that the Project is entitled to an annual release of up to 790,000 acre-feet. *See* NM-EX 527, Order (1) Granting Summary Judgment Regarding the Amounts of Water; (2) Denying Summary Judgment Regarding Priority Date; (3) Denying Summary Judgment to the Pre-1906 Claimants; and (4) Setting a Scheduling Conference, *New Mexico ex rel. Office of the State Engineer v. Elephant Butte Irr. Dist.*, no. CV-96-888 (N.M. 3d Judicial Dist., Feb. 17, 2014). [Apportionment UMF No. 103].

100. Unlike Texas, the New Mexico Adjudication Court set limits on the amount of surface water and groundwater that could be diverted or consumed on an acre of Project land in New Mexico. *See* NM-EX 527, Final Judgment, *New Mexico ex rel. Office of the State Engineer v. Elephant Butte Irr. Dist.*, no. CV-96-888 (N.M. 3d Judicial Dist., Aug. 22, 2011). Consistent with Reclamation operations and analysis, New Mexico recognized the right for each Project acre to receive 3.024 acre-feet per annum of surface water. *Id*. at ¶ I.A. [Apportionment UMF No. 104].

101. Prior to this litigation, New Mexico has consistently taken the position that the Compact divides the waters below Elephant Butte according to the acreage in each State so that New Mexico is entitled to 57% and Texas is entitled to 43% of Project supply. For example, in negotiations that occurred during the 1990s and 2000s, New Mexico was steadfast in its position that a potential operating agreement for the Project could not alter the 57-43 division of water below Elephant Butte that was required by the Compact. NM-EX 004, Schmidt-Petersen Decl. at ¶ 12; NM-EX 003, Lopez Decl. at ¶ 17; NM-EX 002, D'Antonio Decl. at ¶ 13. [Apportionment UMF No. 105].

VI. POSITION OF THE RIO GRANDE COMPACT COMMISSION ON THE COMPACT APPORTIONMENT

102. The RGCC and its Engineer Advisers regularly request information and receive briefings from Reclamation on Project operations, including operations below Elephant Butte. NM-EX 202, Cortez Dep. (July 30, 2020) at 45:9-46:12; NM-EX 004, Schmidt-Petersen Decl. at ¶ 13; NM-EX 003, Lopez Decl. at ¶ 13; NM-EX 525, Email from Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation, to Kenneth Rice, Bureau of Reclamation (May 2, 2013); NM-EX 405, Facsimile from David Allen, El Paso Field Office, Bureau of Reclamation, to Darren Powell, Herman Settemeyer, et al. (June 25, 1996). [Apportionment UMF No. 106].

103. Reclamation reports to the RGCC every year about operations that are relevant to the Compact. As part of that report, Reclamation provides information about the operations of the Rio Grande Project. *See, e.g.*, NM-EX 512, Bureau of Reclamation, *Calendar Year 2009 Report to the Rio Grande Compact Commission*, at 59-67 (Mar. 2010); NM-EX 003, Lopez Decl. at ¶ 13;

NM-EX 004, Schmidt-Petersen Decl. at ¶ 13; NM-EX 405, Facsimile from David Allen, El Paso Field Office, Bureau of Reclamation, to Darren Powell, Herman Settemeyer, et al. (June 25, 1996); NM-EX 410, Fascimile from Steve Vandiver, Engineer Adviser, State of Colorado, to Ken Maxey, Albuquerque Area Manager, Bureau of Reclamation, and Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation (Aug. 2, 2002). [Apportionment UMF No. 107].

104. The RGCC conducts Compact accounting on an annual basis. Part of the Compact accounting includes a report on the Project Storage and Releases. That accounting tracks both the releases of Usable Water to water users in both States to satisfy irrigation demands, and the accrued departure of the releases from the Compact's normal release of 790,000 acre-feet per year. *See, e.g.*, NM-EX 501, Rio Grande Compact Commission, *Report of the Rio Grande Compact Commission 2005*, at 20 (Mar. 23, 2006). *See also* NM-EX 004, Schmidt-Petersen Decl. at ¶ 14; NM-EX 003, Lopez Decl. at ¶ 14. [Apportionment UMF No. 108].

105. "Reclamation interprets this accrued departure from normal release [Compact accounting provision] as a measure of how the Rio Grande Project is complying with its obligation to meet yearly demand from the water users of the Rio Grande Project and at the same time comply with the Rio Grande Compact intent to recognize a yearly average of 790,000 AF release from project storage to satisfy water users" below Elephant Butte. NM-EX 411, Letter from Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation, to William A. Paddock, 2 (Sept. 11, 2002). [Apportionment UMF No. 109].

106. The releases from Project Storage are tracked so that the Compact Commissioner from each respective State is able to understand the amount of Project water that users in his or her State are entitled to. NM-EX 004, Schmidt-Petersen Decl. at ¶ 14; NM-EX 003, Lopez Decl. at ¶ 13. [Apportionment UMF No. 110]

107. The RGCC acts or speaks in a number of forms, including through resolutions, all of which must have unanimous agreement. NM-EX 002, D'Antonio Decl. at ¶ 14, NM-EX 003, Lopez Decl. at ¶ 15. Through unanimous resolutions, the RGCC has taken the following relevant positions:

a. The State of New Mexico has a Compact apportionment in southern New Mexico below Elephant Butte, as recognized in the citations below:

i. "[O]ver half of New Mexico's population is located within the Rio Grande basin and depends on New Mexico's allocation of Rio Grande water under the Rio Grande compact." NM-EX 406, Rio Grande Compact Commission, Resolution of the Rio Grande Compact Commission Regarding the Need for Careful Evaluation of the Water Supply and Socioeconomic Impacts of Any Designation of Critical Habitat for the Rio Grande Silvery Minnow (Mar. 25, 1999).

ii. "[A]ll Rio Grande water allocated to New Mexico both upstream *and downstream from Elephant Butte Reservoir* is fully appropriated under New Mexico state law." *Id*. (emphasis added).

iii. "[T]he waters of the Rio Grande Project are used to . . . provide a water supply *for Southern New Mexico* and Texas downstream of Elephant Butte Reservoir." NM-EX 408, Rio Grande Compact Commission, Resolution of the Rio Grande Compact Commission Regarding the Development of an Appropriate Methodology for Determining the Annual Allocation of Usable Water in Rio Grande Project Storage (Mar. 21, 2002) (emphasis added).

b. The operations and accounting of the Project have the potential to impact New Mexico's Compact apportionment. *Id*. ("[T]he dissemination of inaccurate allotments [by Reclamation] causes unnecessary hardship to the water users *of Southern New Mexico* and Texas along the Rio Grande downstream of Elephant Butte Reservoir") (emphasis added); NM-EX 002, D'Antonio Decl. at ¶ 14; NM-EX 003, Lopez Decl. at ¶ 15

c. The Project is "required to be operated in compliance with the Rio Grande Compact." NM-EX 528, Rio Grande Compact Commission, Resolution of the Rio Grande Compact Commission Regarding Temporary Modification of Operations at El Vado Reservoir in New Mexico during April, May, and June 2015 (Mar. 24, 2015); *see also* NM-EX 002, D'Antonio Decl. at ¶ 14; NM-EX 003, Lopez Decl. at ¶ 15. [Apportionment UMF No. 111].

108. To address the potential for Project operations to impact New Mexico's (and Texas's) Compact apportionment, the RGCC has taken at least these three actions by resolution:

a. First, the RGCC unanimously "request[ed] that the Bureau of Reclamation work cooperatively with the Engineer Advisers to develop procedures for determining the annual allotments of water supply in accordance with the Rio Grande Compact." NM-EX 408, Rio Grande Compact Commission, Resolution of the Rio Grande Compact Commission Regarding the Development of an Appropriate Methodology for Determining the annual Allocation of Usable Water in Rio Grande Project Storage (Mar. 21, 2002); *see also* NM-EX 002, D'Antonio Decl. at ¶ 15, NM-EX 003, Lopez Decl. at ¶ 16.

b. Second, the RGCC entered into a memorandum of understanding ("MOU") with Reclamation to "conduct a Compact water accounting documentation project." The purpose of the MOU was "to clarify and formally articulate the details of the duties, roles and responsibilities of each party for the water accounting, reporting, and documentation of the waters of the Rio Grande Basin above Fort Quitman, Texas, in accordance with the Compact." NM-EX 407, Memorandum of Understanding between the Rio Grande Compact Commission and the United States Bureau of Reclamation, 2 (Mar. 21, 2002); *see also* NM-EX 002, D'Antonio Decl. at ¶ 15, NM-EX 003, Lopez Decl. at ¶ 16.

c. Third, the RGCC unanimously "request[ed] those federal agencies that operate water-related facilities within the Rio Grande basin to advise the Rio Grande Compact Commission prior to changing the operation of any of those facilities and when deemed necessary by the Rio Grande Compact Commission, seek its

unanimous consent for changes prior to implementation." NM-EX 413, Rio Grande Compact Commission, Resolution of the Rio Grande Compact Commission Concerning Federal Agency Operations of Their Water-Related Facilities on the Rio Grande Compact Accounting (Mar. 25, 2004); NM-EX 002, D'Antonio Decl. at ¶ 15, NM-EX 003, Lopez Decl. at ¶ 16. [Apportionment UMF No. 112].

VII. DECISION OF THE SUPREME COURT ON THE COMPACT APPORTIONMENT

109. The Court held in this case that "the Compact . . . implicitly . . . incorporates the Downstream Contracts by reference." *Texas v. New Mexico*, 138 S. Ct. at 959. It noted that the "Compact is inextricably intertwined with the Rio Grande Project and the Downstream Contracts." *Texas v. New Mexico*, 138 S. Ct. at 959. [Apportionment UMF No. 113; similar language in Full Supply UMF No. 1].

110. The Court further held that "the United States might be said to serve, through the Downstream Contracts as a sort of agent of the Compact, charged with assuring that the Compact's equitable apportionment to Texas *and part of New Mexico* is, in fact, made." *Texas v. New Mexico*, 138 S. Ct. at 959 (emphasis added; internal quotation marks omitted). [Apportionment UMF No. 114; similar language in Full Supply UMF No. 1].

111. In the Downstream Contracts, and in particular in the 1938 Downstream Contract, "the federal government promised to supply" Project water to the New Mexico water district Elephant Butte Irrigation District ("EBID") and to the Texas water district EPCWID (collectively, the "Districts") in accordance with their irrigable acres within the Project—"roughly 57% for New Mexico and 43% for Texas." *Texas v. New Mexico*, 138 S. Ct. at 957. [Full Supply No. UMF 2].

VIII. OPERATION OF THE RIO GRANDE PROJECT

A. General Features of the Rio Grande Project

112. Water rights associated with the Project comprise the largest surface water rights in the Lower Rio Grande ("LRG"). In addition to Project water rights, there are a few pre-Project surface water rights in the New Mexico part of the LRG. New Mexico water laws and regulation protect the senior water rights of the Rio Grande Project. *See* NM-EX 006, Barroll 2d Decl. at ¶ 76; *see also* NM-EX 007, D'Antonio 2d Decl. at ¶ 37.

113. The actual irrigated acreage within the Project in 1938 was approximately 140,000 acres, about 20,000 acres less than the full irrigated acreage authorized in the 1938 Downstream Contract. The irrigated area within the Project increased gradually through the 1940s, reaching its maximum extent of about 160,000 acres in the early 1950s. It has gradually declined in both New Mexico and Texas ever since. However, the actual irrigated acreage within the Project fluctuates from year to year based on a number of factors, including water supply, planting and fallowing decisions by individual farmers, and urbanization. *See* NM-EX 012, Sullivan Decl. at ¶ 44; *see also* NM-EX 112, Spronk Rep. at 43 & Fig. 5-4.

114. The total amount of irrigated acreage in New Mexico today is approximately 75,000 acres. Taking this change into account, the total volume of irrigation water applied in the New Mexico

portion of the Project is consistent with the irrigation demand in New Mexico during the 1940s and 1950s. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 24-25; *cf.* NM-EX 432, Narenda N. Gunaji, Engineering Experiment Station, New Mexico State University, *Groundwater Conditions in the Elephant Butte Irrigation District*, at 3, 19 (1961) (reporting per-acre demand figures during the 1950s); NM-EX 343, C.S. Conover, *Preliminary Memorandum on Groundwater Supplies for Elephant Butte Irrigation District, New Mexico*, at 6 (Sept. 1947) (reporting demand figures for the 1940s).

115. The Project is operated by the [Reclamation]. The operations of the Project include the allocation and delivery of Project water stored in Elephant Butte and Caballo reservoirs to the Districts and to Mexico. NM-EX 001, Barroll Decl. at ¶ 14; NM-EX 003, Lopez Decl. at ¶ 19; *see also e.g.*, NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 3–4 (Sep. 30, 2016). [Full Supply UMF No. 3].

116. The Rio Grande Project is a federal Reclamation Project, therefore neither Texas nor New Mexico have a direct role in the operation of the Project. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 63:18-69:2; NM-EX 211, Gordon Dep. (July 14, 2020) at 89:4-11, 172:13-22. [Notice UMF No. 9].

117. Specifically, although New Mexico retains administrative jurisdiction over the surface water of the Rio Grande Project, the New Mexico State Engineer has no involvement in day-to-day Project operations, including orders and deliveries. NM-EX 206, D'Antonio Dep. (Aug. 14, 2020) at 93:12-96:7. [Notice UMF No. 10].

118. Reclamation operates Elephant Butte Reservoir as part of the principal storage infrastructure for the Rio Grande Project. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 56:20-58:3. [Notice UMF No. 2].

119. At the time the Compact was executed, 88,000 authorized Project acres were situated within EBID in New Mexico, and 67,000 authorized Project acres were situated in EPCWID in Texas. NM-EX 328, Frank B. Clayton, Rio Grande Compact Commissioner, State of Texas, to Sawnie B. Smith (Oct. 4, 1938). Thus, approximately 57% of Project acreage was located in New Mexico, and 43% of Project acreage was located in Texas. NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, Final Environmental Impact Statement*, at 4 (Sept. 30, 2016). [Apportionment UMF No. 53].

120. In operation of the Rio Grande Project, Reclamation is responsible to control releases of Project supply from Elephant Butte and Caballo reservoirs to assure delivery of all ordered water to the canal diversions. This function includes monitoring the river to determine gains and losses throughout the river reaches between stream gages. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 34:12-35:5. [Notice UMF No. 21].

121. The Project beneficiary in New Mexico is [EBID]. EBID is a New Mexico entity created by New Mexico statute and subject to New Mexico law. *See* Motion of Elephant Butte Irrigation District for Leave to Intervene, and Memorandum and Points of Authority, 2 (Dec. 3, 2014); *see also* NM-EX 302, Elephant Butte Water Users Association, Articles of Incorporation (Dec. 22,

1904); NM-EX 112, Stevens Rep. at 18; NM-EX 111, Miltenberger Rep. at 9. [Apportionment UMF No. 50].

122. The Project beneficiary in Texas is [EPCWID]. EPCWID is a Texas entity created by Texas statute and subject to Texas law. *See* Motion of El Paso County Water Improvement District No. 1 for Leave to Intervene as Plaintiff, Complaint in Intervention, and Memorandum in Support of Motion to Intervene as Plaintiff, 1-3 (Apr. 22, 2015); *see also* NM-EX 304, El Paso Valley Water Users' Association, Articles of Incorporation (Mar. 31, 1905); NM-EX 112, Stevens Rep. at 18; NM-EX 111, Miltenberger Rep. at 9. [Apportionment UMF No. 51].

123. Once delivered to the Elephant Butte Reservoir, Project water is allocated to the Rio Grande Project beneficiaries in southern New Mexico and in Texas. *See* NM-EX 220, Miltenberger Dep. (June 8, 2020) at 38:22-39:6. The Project water users are located in [EBID] and [EPCWID] (referred to jointly as "Districts"). *See* Motion of Elephant Butte Irrigation District for Leave to Intervene, and Memorandum and Points of Authority, 2 (Dec. 3, 2014); Motion of El Paso County Water Improvement District No. 1 for Leave to Intervene as Plaintiff, Complaint in Intervention, and Memorandum in Support of Motion to Intervene as Plaintiff, 1-3 (Apr. 22, 2015); NM-EX 112, Stevens Rep. at 18; NM-EX 111, Miltenberger Rep. at 9. [Notice UMF No. 3].

124. Although the Compact defines a "normal release" from Project Storage of 790,000 acre-feet, the release has been less than 790,000 acre-feet/year in all but 13 years since 1938. Further, many of those years in which the release exceeded 790,000 acre-feet/year were years in which a spill occurred. *See* NM-EX 008, Lopez 2d Decl. at ¶ 19; *see also* NM-EX 122, Sullivan & Welsh 2d Rep. ("Spronk Rep.") at 41, 180.

125. The term "Project Supply" means the Usable Water released from Caballo Dam, plus Project return flows and inflows occurring below Caballo Dam, that can be allocated and delivered to the beneficiaries of the Project—namely EBID and EPCWID—and to Mexico. Not all water delivered into Elephant Butte Reservoir constitutes "Project Supply" because some water evaporates in storage, constitutes water in storage other than Useable Water (e.g., Credit Water), or may be used to satisfy pre-Compact water rights. *See* NM-EX 006, Barroll 2d Decl. at ¶ 10; *see also* NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 3–5 (Sept. 30, 2016). [Similar language in Full Supply UMF no. 4].

126. Project return flows form part of Project Supply. Project return flows available for use within the Project were historically generated within the Rincon Valley in New Mexico, the Mesilla Valley in New Mexico and Texas, and the El Paso Valley above the Tornillo heading in Texas. Project return flows that are associated with irrigation, by and large, return through Project drains and wasteways. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 46-47, 49; *see also* NM-EX 100, Barroll Rep. at 26-30; Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation* 100 (1937) (produced at TX_MSJ_000132); NM-EX 122, Spronk Rep. at 24-32; NM-EX 424, C.S. Conover, *Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico*, at 45-50 (1954).

127. Return flows vary spatially and temporally depending on many factors, including hydrologic conditions and Project operations. *See* NM-EX 012, Sullivan Decl. at ¶¶ 26, 35.

128. The flow in Project drains is a component of total Project return flows. Drain flows comprise a number of sources of water, including groundwater seepage, wastewater, tailwater, and on-farm runoff. Drain flows vary throughout the year depending on many factors, including the timing and volume of surface water deliveries and irrigation applications, weather conditions, and other factors. *See* NM-EX 012, Sullivan Decl. at ¶¶ 30, 31, 34; *see also* NM-EX 122, Spronk Rep. at 225; NM-EX 123, Spronk Reb. Rep. at 170-71.

129. Project Allocations are the amounts of Project Supply that each District is entitled to order each year from Project supply and the amount Mexico is entitled to receive by treaty. NM-EX 001, Barroll Decl. at ¶ 18; NM-EX 307, Distribution of the Waters of the Rio Grande, Mex.-U.S., May 21, 1906, 34 Stat. 2953; NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, Final Environmental Impact Statement*, 4 (Sept. 30, 2016). [Notice UMF No. 4].

130. Reclamation determines Project Allocations before the beginning of the irrigation season and updates the Project Allocations as necessary throughout the season. *See* NM-EX 006, Barroll 2d Decl. at ¶ 11.

131. Historically, Reclamation calculated and declared the allocation of Project supply available to lands in New Mexico, lands in Texas, and Mexico on the basis of water in storage available for release and on historical return flows to the Rio Grande. NM-EX 506, Cortez Aff. at ¶ 7 (Apr. 20, 2007); NM-EX 200, Barroll Dep. (Aug. 10, 2020) at 393:3-5; NM-EX 219, Lopez Dep. (Aug. 21, 2020) at 40:13-20; NM-EX 107, Lopez Rep. at 5-6. [Apportionment UMF No. 67].

132. The allocation of Project supply available for lands in the two States was historically equally divided to all Project lands on an acre foot per acre basis. NM-EX 506, Cortez Aff. at ¶ 8 (Apr. 20, 2007); NM-EX 108, Lopez Reb. Rep. at 7-9; NM-EX 210, Ferguson Dep. (Feb. 20, 2020) at 240:25-241:5; NM-EX 214, King Dep. (May 18, 2020) at 115:13-25. [Apportionment UMF No. 60].

133. Reclamation releases Usable Water from Project Storage for delivery to Project beneficiaries and to Mexico as part of the operations of the Rio Grande Project. Releases are made in response to orders by the Districts, and in accordance with each year's schedule of deliveries to Mexico. *See* NM-EX 006, Barroll 2d Decl. at ¶ 9; *see also* NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 3-5 (Sept. 30, 2016).

134. The Rio Grande Compact incorporates the Rio Grande Project as the mechanism by which water users in Texas (EPCWID) receive the State's equitable apportionment of the waters of the Rio Grande. *See* NM-EX 212, Gordon Dep. (July 15, 2020) at 14:22-16:10; Texas's Reply to Exceptions to First Interim Report of Special Master, 40 (July 28, 2017); *see also* First Interim Report of the Special Master, 194-95 (Feb. 9, 2017); Texas's Reply to Exceptions to First Interim Report of Special Master, 40 (July 28, 2017); Reply Brief for the United States on Exceptions by the States of New Mexico and Colorado to the First Interim Report of the Special Master, 18 (July 2017). [Notice UMF No. 6].

135. [Duplicate (please refer to NM-CSMF ¶ 125)].

136. Project Allocations are the amount of Project supply each District (EBID and EPCWID) is entitled to order (take) from the Project, each year, and the amount Mexico is entitled to receive by Treaty. NM-EX 001, Barroll Decl., ¶ 18; NM-EX 003, Lopez Decl., ¶ 23; NM-EX 307, Convention between the United States and Mexico: Equitable Distribution of the Waters of the Rio Grande (May 21, 1906); NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 4 (Sep. 30, 2016). [Full Supply UMF No. 7].

137. The Project has changed significantly since 1938. Major changes to the Project include but are not limited to: completion of the Rectification and Canalization projects, proliferation of groundwater wells in both states and in Mexico, Project acreage buildout then reduction in irrigated acreage, changes in on-farm irrigation efficiencies, changes in crop mix, urbanization of Project area, growth of municipal water demands with significant amounts of that demand being supplied by the Project, significant Project accounting changes, infrastructure changes (e.g., construction of the American Canal and its Extension), designation of wastewater treatment plant treated effluent as non-Project water, transfer of ownership and operation of Project infrastructure from Reclamation to the Districts, and significantly modified Project operations under the 2008 Operating Agreement. NM-EX 008, Lopez 2d Decl. at ¶ 33; *see also* NM-EX 107, Lopez Rep. at 12-13, 33, 35, 43-48, 62-65; NM-EX 100, Barroll Rep. at 53-60, Appx. C.

138. The cropping pattern in the Project has changed throughout the history of the Project. NM-EX 006, Barroll 2d Decl. at ¶ 23; *see also* NM-EX 101, Barroll Reb. Rep. at 5.

B. Operation of the Rio Grande Project Prior to the Compact

139. Under the Reclamation Act, Congress intended that water projects would be self-supporting, and each would generate sufficient revenue to cover the approximate costs of construction and operation and maintenance. Thus, Reclamation intended for the total estimated costs of the Rio Grande Project to be equitably borne by its beneficiaries. NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, Final Environmental Impact Statement*, at 3 (Sept. 30, 2016); NM-EX 005, Stevens Decl. at ¶ 13. [Apportionment UMF No. 49].

140. To comply with the principle that the beneficiaries equitably bear the costs of the Project, Reclamation entered into contracts with EBID and EPCWID to establish the repayment obligations between the two districts based on the irrigable acreage within each district. NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, Final Environmental Impact Statement*, at 4 (Sept. 30, 2016); *e.g.*, NM-EX 308, Articles of Agreement between the United States of America, Elephant Butte Water Users Association, and El Paso Valley Water Users' Association (June 27, 1906) ("1906 Contract"); NM-EX 321, Contract between the United States and the El Paso County Water Improvement District No. 1 adjusting construction charges and for other purposes (Nov. 10, 1937) (reciting amendments to 1906 Contact); NM-EX 320, Contract between the United States and the Elephant Butte Irrigation District adjusting construction charges and for other purposes (Nov. 9, 1937) (same); NM-EX 326, Contract Between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938) ("1938 Downstream Contract"). [Apportionment UMF No. 52].

141. In 1937 and 1938, Congress authorized the execution of amended repayment contracts with EBID and EPCWID. These contracts addressed the repayment obligations of the Districts and established a corresponding right of use to a proportion of the annual Project water supply during times of shortage based on an established irrigation acreage in each District: 57% to EBID in New Mexico, and 43% to EPCWID in Texas. NM-EX 107, Lopez Rep. at 26-27; NM-EX 109, Lopez Suppl. Reb. Rep. at 6-7; *see, e.g.*, NM-EX 308, Articles of Agreement between the United States of America, Elephant Butte Water Users Association, and El Paso Valley Water Users' Association (June 27, 1906); NM-EX 321, Contract between the United States and the El Paso County Water Improvement District No. 1 adjusting construction charges and for other purposes (Nov. 10, 1937); NM-EX 320, Contract between the United States and the Elephant Butte Irrigation District adjusting construction charges and for other purposes (Nov. 9, 1937); NM-EX 324, Contract Between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938) ("1938 Downstream Contract"). Collectively, these contracts are known as the "Downstream Contracts." [Apportionment UMF No. 57].

142. For example, the 1938 Downstream Contract quantified the authorized irrigable acreage within each district as 88,000 acres in EBID, and 67,000 acres in EPCWID (for a total of 155,000 Project acres). It goes on to state that in the event of a shortage of water, "the distribution of the available supply in such a year, shall so far as practicable, be made in the proportion of 67/155 [43%] thereof to the lands within [EPCWID], and 88/155 [57%] to the lands within [EBID]." NM-EX 324, Contract Between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938); NM-EX 107, Lopez Rep. at 26-27; NM-EX 001, Barroll Decl. at ¶19. [Apportionment UMF No. 58; similar language in Notice UMF No. 5; Full Supply UMF No. 8].

143. The 1938 Downstream Contract is not itself a repayment contract between a district and Reclamation. Rather, it is a contract between the Districts and approved by Reclamation that reflects the Districts' agreement concerning the revised 1937 repayment contracts. *See* NM-EX 008, Lopez 2d Decl. at ¶ 29; *see also* NM-EX 321, Contract between the United States and the El Paso County Water Improvement District No. 1 adjusting construction charges and for other purposes (Nov. 10, 1937); NM-EX 320, Contract between the United States and the Elephant Butte Irrigation District adjusting construction charges and for other purposes (Nov. 9, 1937); NM-EX 324, Contract Between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938).

144. The Downstream Contracts generally restrict use of available Project Supply to irrigation purposes on authorized Project lands. However, both the purpose of use and the place of use are subject to modification through execution of Miscellaneous Purposes contracts under the Sale of Water for Miscellaneous Purposes Act of 1920. *See* NM-EX 008, Lopez 2d Decl. at ¶ 27; *see also* NM-EX 308, Articles of Agreement between the United States of America, Elephant Butte Water Users Association, and El Paso Valley Water Users' Association (June 27, 1906); NM-EX 321, Contract between the United States and the El Paso County Water Improvement District No. 1 adjusting construction charges and for other purposes (Nov. 10, 1937); NM-EX 320, Contract between the United States and the Elephant Butte Irrigation District adjusting construction charges and for other purposes (Nov. 9, 1937); NM-EX 324, Contract Between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938).

145. The Downstream Contracts do not address depletions, whether in New Mexico, Texas, or Mexico, that may affect available Project Supply. *See* NM-EX 008, Lopez 2d Decl. at ¶ 28; *see also* NM-EX 308, Articles of Agreement between the United States of America, Elephant Butte Water Users Association, and El Paso Valley Water Users' Association (June 27, 1906); NM-EX 321, Contract between the United States and the El Paso County Water Improvement District No. 1 adjusting construction charges and for other purposes (Nov. 10, 1937); NM-EX 320, Contract between the United States and the Elephant Butte Irrigation District adjusting construction charges and for other purposes (Nov. 9, 1937); NM-EX 324, Contract Between Elephant Butte Irrigation District and El Paso County Water Improvement District No. 1 (Feb. 16, 1938).

146. At the time the Compact was signed, Reclamation had been operating the Project, in its entirety, as a single unit for over twenty years. During that time, the Project operated under Reclamation law. *See, e.g.*, NM-EX 318, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, 8 (1937); NM-EX 005, Stevens Decl. at ¶ 9. [Apportionment UMF No. 54].

147. In the years prior to the Compact being signed (1928-37), the average release from the Project was 780,640 acre-feet to satisfy irrigation demands on Project lands in both New Mexico and Texas. NM-EX 323, United States Reclamation Service, *Project History Rio Grande Project Year 1937*, (1938). [Apportionment UMF No. 55].

148. In the years prior to the Compact being signed, the Project would set an equal allotment for each Project acre to satisfy irrigation demands. NM-EX 323, United States Reclamation Service, *Project History Rio Grande Project Year 1937* (1938). The amount of water that was actually used on each acre depended on the amount called for by the individual farmers. *See* NM-EX 202, Cortez Dep. (Vol. I) (July 30, 2020), 18:10-22; NM-EX 100, Barroll Rep. at 32. [Apportionment UMF No. 56].

149. Prior to the Compact, return flow, generated both in New Mexico and Texas, was a substantial part of Project deliveries to EPCWID. EPCWID headings diverted return flows generated in the upper part of the El Paso Valley as well as municipal effluent generated by the City of El Paso. *See* NM-EX 006, Barroll 2d Decl. at ¶ 50; *see also* NM-EX-100, Barroll Rep. at 14, Appx. C, C8; NM-EX-101, Barroll Reb. Rep. at 25. The data in Table 90 of the RGJI reflects the diversion of return flows arising in the El Paso Valley. *See Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, at 13 (1937) (produced at TX_MSJ_000132); *see also* Figure 6, Texas's Motion for Partial Summary Judgment; Memorandum of Points and Authorities in Support Thereof (produced at TX_MSJ_000131 and 1579). The percentages of return flows shown throughout Table 90 of the RGJI reflect the return flows occurring during the 1930-1936 period. At the time of the negotiation of the Compact, the return flows generated within the El Paso Valley were an integral part of Project Supply. See *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, at 100 (1937) (produced at TX_MSJ_000132); NM-EX 100, Barroll Rep. at Appx. C.; NM-EX 101, Barroll Reb. Rep. at 24-36; NM-EX 103 Barroll 2d Suppl. Reb. Rep. at 21-30.

C. Operation of the Rio Grande Project from 1938 Until 1979

150. The rectification of the Rio Grande in the El Paso Valley in 1938 separated the Rio Grande from the Tornillo, Hanson, and Guadalupe canal headings. From 1938-1980, water was diverted from EPCWID drains in the El Paso Valley into the Tornillo canal for use by EPCWID farmers. *See* NM-EX 006, Baroll 2d Decl. at ¶ 51; *see also* NM-EX 100, Barroll Rep. Appx. C, C-21-28.

151. Until about 1979, Reclamation operated the entire Project, including delivering Project water to individual New Mexico and Texas farm headgates in response to farm orders, and Project farmers ordered water directly from Reclamation. Reclamation then determined what releases and diversions were needed to fulfill those orders, released water from Caballo reservoir, and diverted water at appropriate canal headings. Reclamation ditch riders then delivered the ordered water to individual farms. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 20:1-15, 58:6-59:11; NM-EX 001, Barroll Decl. at ¶ 20; NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, Final Environmental Impact Statement*, at 5 (Sept. 30, 2016). [Apportionment UMF No. 59; Full Supply UMF Nos. 9; similar language in Notice UMF Nos. 12 (period from inception to 1951) and 15 (period from 1951 to 1979)].

152. Prior to 1951, the Project enjoyed plentiful water supplies, and Reclamation allowed Project farmers to order water as they needed to irrigate their crops. NM-EX 202, Cortez Dep. (July 30, 2020) at 18:16-19:15, 58:6-18. [Apportionment UMF No. 61].

153. In 1951, drought forced Reclamation to limit per-acre allocations to Project lands, which it did by evaluating deliveries to lands from 1946 through 1950. NM-EX 202, Cortez Dep. (July 30, 2020) at 19:1-20:4, 58:19-59:7; NM-EX 100, Barroll Rep. at 32. Reclamation in 1951 determined that 3.0241 acre-feet per acre constituted a full allocation to Project lands. NM-EX 202, Cortez Dep. (July 30, 2020) at 19:8-20:4. [Apportionment UMF No. 62].

154. From 1951 through 1979, Reclamation allocated Project deliveries on an equal basis to all Project lands and delivered allocated water directly to Project lands. NM-EX 202, Cortez Dep. (July 30, 2020) 58:19-59:7; NM-EX 511, Filiberto Cortez, *Lower Rio Grande Project Operating Agreement: Settlement of Litigation*, at 4 (Oct. 2008); NM-EX 100, Barroll Rep. at 31-32. [Apportionment UMF No. 63; similar language in Notice UMF No. 14].

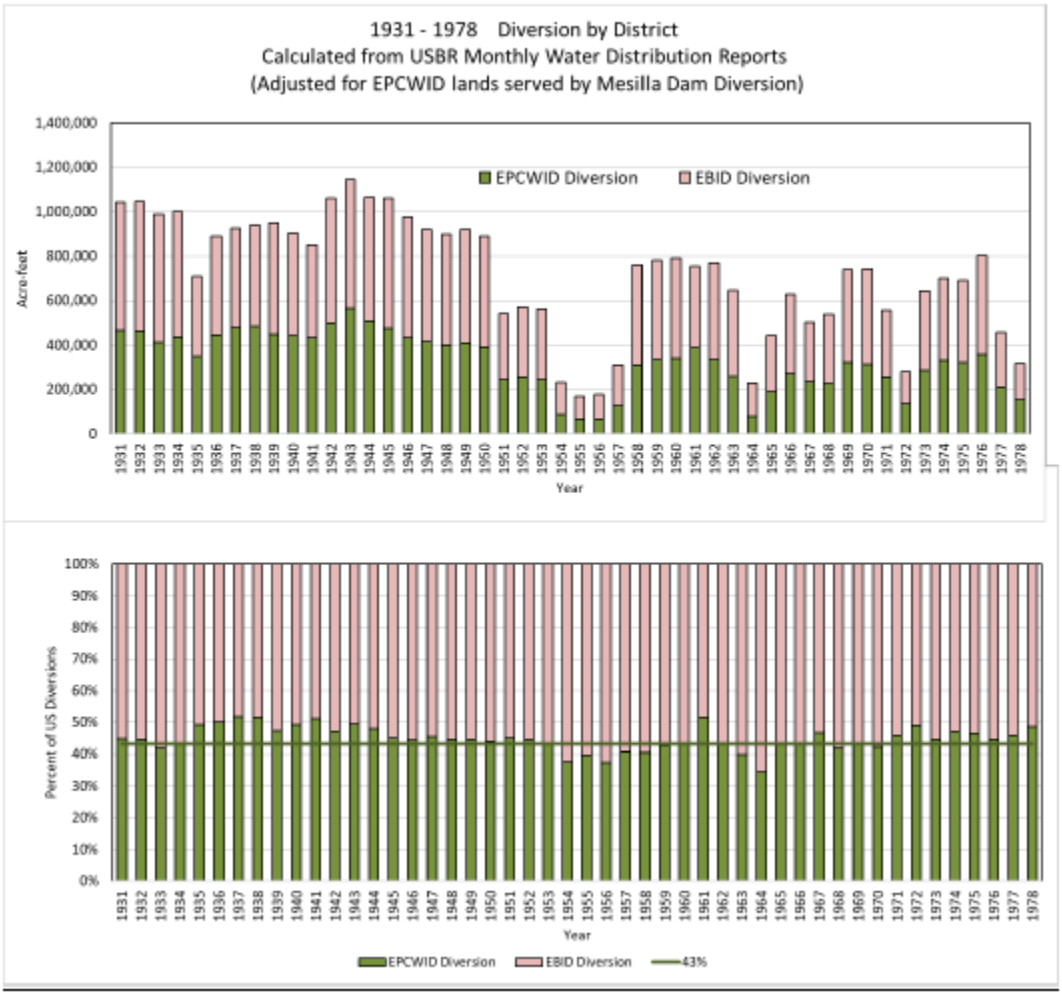
155. Reclamation also maintained the Districts' annual allocation accounting. Reclamation tracked the amount of surface water delivered to individual farm turnouts and assessed these amounts against the farmers' respective allocations. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 20:1-15, 42:15-43:4, 58:6-59:11; NM-EX 100, Barroll Rep. at 32-33; NM-EX 001, Barroll Decl. at ¶ 20; NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, Final Environmental Impact Statement*, at 5 (Sept. 30, 2016). [Notice UMF No. 16].

156. Before 1980, Reclamation operated the Project in its entirety, combining storage and return flows so that each acre of Project land was entitled to receive an equal amount of water regardless of the source of the water or in what State the land was located. Thus, based on each District's share of authorized acreage, "EBID is allocated 88/155 of the available Project water supply and EPCWID is allocated 67/155 of the available Project water supply." NM-EX 506, Cortez Aff. at

¶ 11 (Apr. 20, 2007); NM-EX 100, Barroll Rep. at 31. During this period, there is no record that any party lodged an objection, whether through the RGCC or Reclamation, to challenge Reclamation's principle of allocation on an equal per-acre basis. NM-EX 005, Stevens Decl. at ¶ 12; NM-EX 003, Lopez Decl. at 25; EX-NM 2, D'Antonio Decl. at ¶ 16. [Apportionment UMF No. 64].

157. From 1931 to 1979, Reclamation operated the Project such that the diversions for EBID in New Mexico totaled 54.5% and diversions for EPCWID in Texas totaled 45.5% of total diversions. From 1951, when Reclamation began enforcing allocations to each acre, until 1979, the diversions for EBID in New Mexico totaled 56.2% and diversions for EPCWID in Texas totaled 43.8% of total diversions. NM-EX 100, Barroll Rep. at Appx. A, A-8. This is shown graphically in Figure A-3 of Dr. Barroll's Expert Report:

Figure A.3. District Diversions 1931 - 1978



See also id. at A-9; NM-EX 101, Barroll Reb. Rep. at 41, Appx. A, 39. [Apportionment UMF No. 65].

D. Operation of the Rio Grande Project from 1979 Until 2005

158. In approximately 1979, Project operations changed with the transfer of some Project facilities to the Districts. Reclamation started to allocate water to each District for delivery at the District's canal headings (i.e., Arrey, Leasburg, Mesilla, Franklin and Riverside) rather than directly to farm headgates. Since those transfers, Reclamation determines the Districts' Project allocations, takes water orders from the Districts, releases water from Caballo reservoir, and then makes deliveries to canal headings for water users in each District. The Districts in turn take farm orders from their members, place orders with Reclamation for water to be delivered at canal headings, and then take delivery of that water and deliver it to farm headgates in each State. NM-EX 001, Barroll Decl. at ¶ 21; *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 59:12-60:4, 64:3-15; NM-EX 210, Ferguson Dep. (Feb. 20, 2020) at 233:3-6; NM-EX 208, Esslinger Dep. (Aug. 18, 2020) at 57:4-58:8, 59:3-18; NM-EX 222, Reyes Dep. (Aug. 31, 2020) at 20:3-14; NM-EX 223, Rios Dep. (Aug. 26, 2020) at 48:12-18, 49:10-20. [Apportionment UMF No. 66; similar language in Notice UMF No. 17 and Full Supply UMF 10].

159. Reclamation retained, in the period after 1979, the responsibility to account for the total deliveries to each District (EBID and EPCWID) and to Mexico at their respective diversion headings in a given year. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 31:13-23, 49:3-11. From 1979 through 2005, Reclamation continued to operate the Project as a single unit on an equal amount of water per acre basis. [Notice UMF No. 18].

160. Reclamation relies on the Districts to monitor and report the actual diversions that each takes at its diversion points from the Rio Grande. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 49:20-50:12. [Notice UMF No. 19].

161. Reclamation compiles its accounting of the Districts' respective Project allocation and delivery charges on a monthly basis. *See* NM-EX 203, Cortez Dep. (July 31, 2020) at 215:23-216:16; NM-EX 221, Reyes Dep. (Nov. 16, 2018) at 65:8-66:8. [Notice UMF No. 20].

162. After 1979, Reclamation developed a method known as the D1/D2 method for allocating water to the Districts. *See* NM-EX 403, Operating Agreement between Elephant Butte Irrigation District, El Paso County Water Improvement District No.1, and United States Bureau of Reclamation, at 3-4 (1985) (unexecuted draft); NM-EX 511, Filiberto Cortez, *Lower Rio Grande Project Operating Agreement: Settlement of Litigation*, at 4 (Oct. 2008); NM-EX 100, Barroll Rep. at 33. [Apportionment UMF No. 68].

163. The D1/D2 method was based on the distribution of Project supply during the period from 1951 to 1978 and continued allocating 57% of Project supply to New Mexico lands and 43% of Project supply to Texas lands. NM-EX 202, Cortez Dep. (July 30, 2020) at 170:25-172:10 (examining NM-EX 403, Operating Agreement between Elephant Butte Irrigation District, El Paso County Water Improvement District No.1, and United States Bureau of Reclamation, at 3-4 (1985) (unexecuted draft)); NM-EX 100, Barroll Rep. at 33-34. [Apportionment UMF No. 70].

164. Under the D1/D2 Allocation Method, the D1 Curve is the observed relationship between total Project release from storage and farm delivery plus the delivery to Mexico, and the D2 Curve is the bserved relationship between Project release from storage and total project diversions, including Mexico. Using the method, Mexico's share of Project Supply was calculated using the D1 Curve. The total Project Supply was calculated using the D2 Curve, and Project Supply remaining beyond Mexico's share was split 57% to EBID and 43% to EPCWID. *See* NM-EX 006, Barroll 2d Decl. at ¶ 57; *see also* NM-EX 100, Barroll Rep. at 33-37, Appx. A, A-13-17.

165. Reclamation began making Project allocations using the D1/D2 allocation procedure from at least 1985. NM-EX 202, Cortez Dep. (July 30, 2020) at 168:20-24; NM-EX 100, Barroll Rep. at 33-34. [Apportionment UMF No. 72].

166. According to Reclamation, "D2 was developed to calculate the amount of water that was needed at the main canal headings to make the 3.0241 ac-ft/acre deliveries to the lands." NM-EX 409, Email from Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation, to Chris Rich et al. (Apr. 12, 2002). [Apportionment UMF No. 69].

167. In order to calibrate releases of Project supply from Caballo and Elephant Butte reservoirs into the Rio Grande, Reclamation takes delivery orders from each District and makes appropriate reservoir release adjustments on a daily basis. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 64:3-15. [Notice UMF No. 22].

168. To facilitate this process, the Districts take water orders from their respective constituents and transmit total orders to Reclamation. *See* NM-EX 208, Esslinger Dep. (Aug. 18, 2020) at 57:4-58:8, 59:3-18; NM-EX 222, Reyes Dep. (Aug. 31, 2020) at 20:3-14; NM-EX 223, Rios Dep. (Aug. 26, 2020) at 48:12-18, 49:10-20; NM-EX 001, Barroll Decl. at ¶ 21. [Notice UMF No. 23].

169. Once Reclamation delivers water to a District's diversion point, the District administers the conveyance of that water to individual farm turnouts and accounts for delivery of the water in satisfaction of the farmers' respective orders. *See* NM-EX 208, Esslinger Dep. (Aug. 18, 2020) at 56:19-58:23, 60:22-62:7; NM-EX 223, Rios Dep. (Aug. 26, 2020) at 31:4-6, 33:10-14. [Notice UMF No. 24].

170. Beginning in about 1980, changes to Project infrastructure within EPCWID eliminated river diversions that previously supplied the Riverside and Tornillo Canals and ceased the conveyance between the EPCWID drains in the El Paso Valley and the Tornillo Canal. Following these changes, there is no evidence that EPCWID makes any use of drain flow or other irrigation return flow arising within the El Paso Valley. *See* NM-EX 006, Baroll 2d Decl. at ¶ 51; *see also* NM-EX 100, Barroll Rep. Appx. C, C-21-28. If EPCWID resumed use of the irrigation return flows that arise within its boundaries, this would reduce the reservoir releases needed to meet EPCWID demands and would make additional water available for allocation and delivery to EBID. *See* NM-EX 012, Sullivan Decl. at ¶¶ 26, 35; *see also* NM-EX 122, Spronk Rep. at 19-20.

171. Starting in about 1990, Reclamation determined that a release of 763,842 AFY from Project Storage was a full-supply condition. *See, e.g.*, NM-EX 105, Excerpts, United States' Disclosure of Expert Rebuttal Witness Dr. Ian M. Ferguson (Dec. 30, 2019) [hereinafter "Ferguson Discl."] at 8 ("Prior to the [2008 Operating Agreement], full supply was defined by Usable Water available

for the current-year allocation equal to or greater than 763,800 acre-feet . . . ."); NM-EX 104, Excerpts, United States' Disclosure of Rebuttal Expert Dr. Al Blair (Dec. 30, 2019) [hereinafter "Blair Discl."] at 8 (stating that prior to 2008 Operating Agreement a maximum annual release for a full-supply year was 763,840 AF). Reclamation determined that this release from Project Storage would provide 931,841 AFY of divertible water at U.S. and Mexico canal headings. NM-EX 001, Barroll Decl., ¶ 22; NM-EX 400, Bureau of Rec., Rio Grande Project Water Supply Allocation Procedures [hereinafter "WSAP"] at 4. According to Project allocation procedures at that time, from this 931,841 AFY, 60,000 AFY was deducted for delivery to Mexico. Reclamation then divided the remaining 871,841 AFY, 43% (376,862 AFY) to EPCWID and 57% (494,979 AFY) to EBID in accordance with the percentages set out in the 1938 Downstream Contract. NM-EX 001, Barroll Decl. at ¶ 22; NM-EX 400, WSAP at 4–5; NM-EX 324, 1938 Downstream Contract. The 376,842 AFY quantity represents a full-supply Project allocation to EPCWID that Reclamation will ensure is available for diversions at EPCWID's headgates if EPCWID orders (takes) this volume of water. NM-EX 001, Barroll Decl. at ¶ 23; NM-EX 400, WSAP at 4–5; *see also* NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 86 (Sep. 30, 2016) (referring to "[t]he historical full [EPCWID] allocation of 376,842 acre-feet"). [Full Supply UMF No. 11].

172. Between 1985 and 1990, before Reclamation had finalized the analysis described [in the preceding paragraph] above, Reclamation's full-supply year determinations for EPCWID varied slightly from 376,842 AFY. For example, from 1985 through 1988, Reclamation determined a full-supply year Project allocation to EPCWID to be 363,963 AFY; and in 1989 and 1990, Reclamation determined a full-supply year Project allocation to EPCWID to be 359,165 AFY. These were hydrologically wet years with plenty of water in Project Storage and full-supply allocations were available to both Districts (EBID and EPCWID). NM-EX 001, Barroll Decl. at ¶ 24; NM-EX 509, Bureau of Reclamation Table, Rio Grande Project Allocation of Project Water Supply (Apr. 3, 2008) ("Reclamation Data Table") at col. 2. [Full Supply UMF No. 12].

173. In 2003, the Project began to suffer the effects of the severe drought that has plagued the Rio Grande basin for the last two decades. NM-EX 412, Herman Settemeyer, *Rio Grande Project/Rio Grande Compact Operation*, at 4 (2004); NM-EX 213, Ivey Dep. (Aug. 28, 2020) at 69:25-71:1, 75:19-24. Nonetheless, in 2003 and 2004, Reclamation allocated 57% of Project water to New Mexico Project lands and 43% to Texas Project lands using the D1/D2 method. NM-EX 201, Rule 30(b)(6) Dep. of the U.S. Bureau of Reclamation by and through Cortez (Aug. 20, 2020) at 50:6-51:15. [Apportionment UMF No. 74].

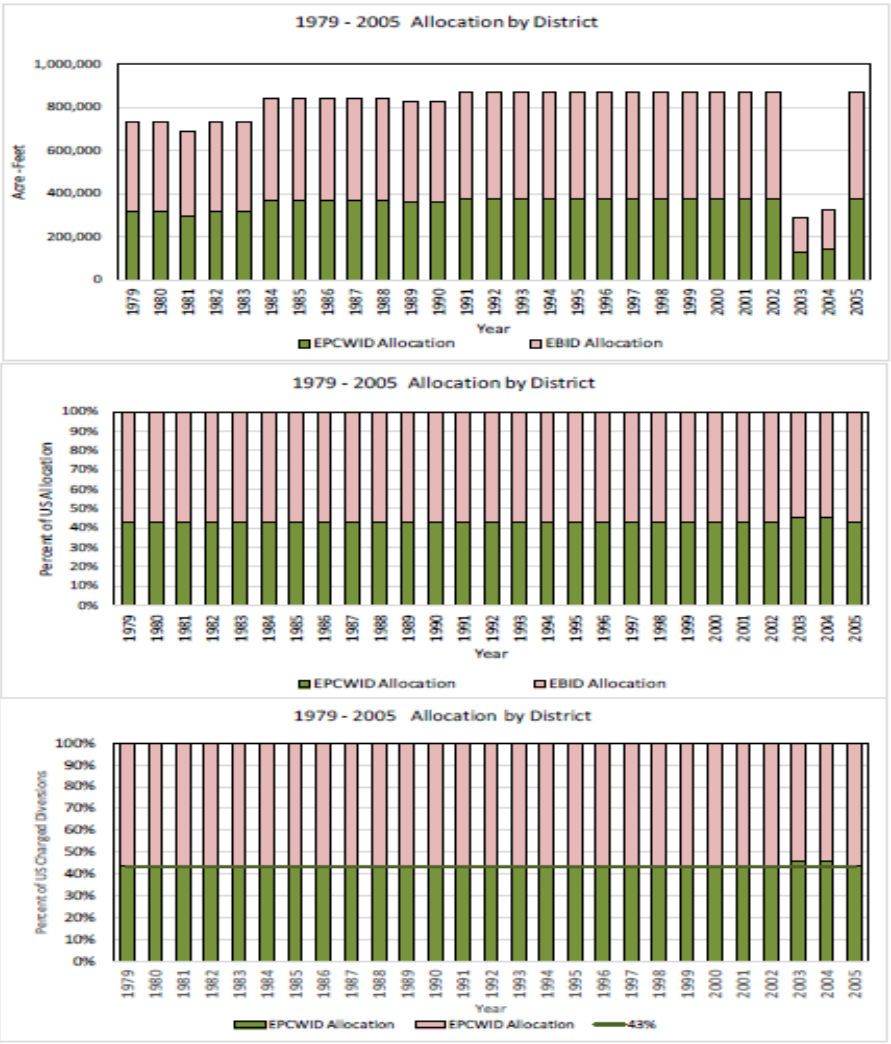
174. Reclamation continued making allocations to the Districts in the proportion of 57% of Project water to New Mexico lands and 43% of Project water to Texas lands using the D1/D2 method through 2005. NM-EX 202, Cortez Dep. (July 30, 2020) at 59:12-60:9; NM-EX 511, Filiberto Cortez, *Lower Rio Grande Project Operating Agreement: Settlement of Litigation*, at 4 (Oct. 2008); NM-EX 100, Barroll Rep. at 34, n.66. [Apportionment UMF No. 73].

175. In 2005, Reclamation was able to make a full D1/D2 allocation in the percentage of 57% to New Mexico lands and 43% to Texas lands. NM-EX 202, Cortez Dep. (July 30, 2020) at 89:21-90:5 (examining NM-EX 328, Bureau of Reclamation, *Environmental Assessment and Finding of No Significant Impact for the Bureau of Reclamation Federal Rio Grande Project New Mexico-*

Texas Operating Procedures, Dona Ana, Sierra, and Socorro Counties, New Mexico and El Paso County, Texas, at 4 (June 11, 2007)); NM-EX 100, Barroll Rep. at 34, n.66. [Apportionment UMF No. 75].

176. From 1979 to 2005, Reclamation allocated Project water such that 57% of Project supply was available for EBID lands in New Mexico and 43% of Project supply was available for EPCWID lands in Texas. NM-EX 100, Barroll Rep. at Appx. A, A-13-15. This is illustrated in Figure A.5 of Dr. Barroll's expert report:

Figure A.5. Total Allocation to Districts and Mexico: D1/D2 Allocation (1979-2005)



From 1979 to 2005, the charged diversions by EBID in New Mexico (which accounts for water available *and ordered* by the Districts) totaled 58% and charged diversions for EPCWID in Texas

totaled 42% of total diversions. NM-EX 100, Barroll Rep., Appx. A, A-16-19. *See also* NM-EX 101, Barroll Reb. Rep., Appx. A, 41-42. [Apportionment UMF No. 76].

177. Reclamation recognizes the years 1985 through 2002 and 2005 as full supply years for the Project, and also recognizes those years as *full-supply years for EPCWID*, meaning that in each of those years Reclamation determined that a full allocation of Project water was available for diversions at EPCWID's headgates if ordered. NM-EX 001, Barroll Decl., ¶¶ 28–30, 32–33, 37 & Table 1; *see also* NM-EX 402, EPCWID Accounting Records [EOY_Acct_EP_1985-2016]; NM-EX 509, Reclamation Data Table; NM-EX 202, Cortez Dep (Jul. 30, 2020) at 82:16-83:2, 91:1-8, 92:19-93:7 (stating that 1979 through 2002 were "full supply" years, that a full Project supply allocation is the maximum amount that Reclamation will allocate, and that "[a] full supply is the allocation made to the district based on historical data" about irrigation demands); NM-EX 210, Ferguson Dep. (Feb. 20, 2020) at 229:15-18 ("[F]rom about 1985 or '6, through about 2002 . . . I know to be years of full project supply."), 233:1-3 (agreeing that "there's full supply from 1979 to 2002"); and 259:12-16 (agreeing that "[t]he project enjoyed full supply conditions from 1979 through 2002, and EPCWID was allocated a full supply in each year"); NM-EX 412, Herman Settemeyer, *Rio Grande Project/Rio Grande Compact Operation*, at 4 (2004) (presenting that "Rio Grande Project water users enjoyed full allocations of water from 1979 until 2003"); *see also* NM-EX 214, Excerpts, King Dep. (May 18, 2020) at 102:19-23 (confirming that a full supply "is the amount of water that Reclamation allocated to each district from 1979 to 2002, when each year was a full-supply" and that in each of those years "[t]here was a full supply available for release from storage"). [Full Supply UMF No. 16].

178. According to Reclamation, prior to 2005, the Districts did not sign an "operating agreement, plan, or criteria," but "acquiesced and cooperated with Reclamation's procedures on a year to year basis." NM-EX 508, Bureau of Reclamation, *Environmental Assessment and Finding of No Significant Impact for the Bureau of Reclamation Federal Rio Grande Project New Mexico-Texas Operating Procedures, Dona Ana, Sierra, and Socorro Counties, New Mexico and El Paso County, Texas*, at 3 (June 11, 2007); NM-EX 202, Cortez Dep. (July 30, 2020) at 87:8-88:10. [Apportionment UMF No. 71].

E. Operation of the Rio Grande Project from 2006 Until the Present

179. In 2006 Reclamation began using a new method for allocating Project water between the two Districts. Neither the RGCC nor New Mexico were given input into the new method before it was implemented. NM-EX 100, Barroll Rep. at 40; NM-EX 004, Schmidt-Petersen Decl. at ¶ 10; NM-EX 003, Lopez Decl. At ¶ 29; NM-EX 002, D'Antonio Decl. at ¶ 10; *see, e.g.*, NM-EX 504, Letter from Filiberto Cortez, Manager, El Paso Field Division, Bureau of Reclamation, to Gary Esslinger, Manager-Treasurer, Elephant Butte Irrigation District (Nov. 21, 2006). [Apportionment UMF No. 77].

180. From 2006 onwards, Reclamation has determined annual Project allocations to the Districts under the 2008 Operating Agreement, and the antecedent D3-Allocation-Plus-Carryover method from which the 2008 Operating Agreement was developed. NM-EX 001, Barroll Decl. at ¶ 25; NM-EX 510, Operating Agreement for the Rio Grande Project [hereinafter "2008 Operating Agreement"] (Mar. 10, 2008); NM-EX 502, D3 Allocation of Project Water to the Districts and Mexico; NM-EX 507, 2007 Operating Procedures. Under the 2008 Operating Agreement,

Reclamation determines a full-supply year Project allocation to EPCWID to be 388,192 AFY. NM-EX 001, Barroll Decl., ¶ 25; NM-EX 510, 2008 Operating Agreement at 3; *see, e.g.*, NM-EX 105, Ferguson Discl. at 8 ("[U]nder the [2008 Operating Agreement], full supply conditions are defined by Usable Water available for the current-year allocation equal to or greater than 790,000 acre-feet."); NM-EX 104, Blair Discl. at 8 (stating that prior to the 2008 Operating Agreement, a maximum annual release for a full-supply year was 763,840 AF). [Full Supply UMF No. 13].

181. Under the D3-Allocation-Plus-Carryover method, Reclamation generally allocates to Mexico and EPCWID the same amounts that they would receive for a given level of Project supply under the D1/D2 methodology. EBID's allocation, however, relies on the "Diversion Ratio." This term is calculated as the ratio of annual charged diversions from the Project, including Mexico, divided by the annual Project release. The D3 method calculates Project supply as a function of the Diversion Ratio and calculates EBID's allocation as the difference between Project supply minus the allocation to EPCWID and Mexico. Holding the effects of carryover and accounting credits constant, a higher Diversion Ratio generally increases the allocation to EBID while a lower one decreases it. *See* Ex. 100, Barroll Rep. at 40-41, Appx. D, D-14-15.

182. The D3-Allocation-Plus-Carryover method reduces EBID's allocation by the total of all real or apparent discrepancies in Project performance relative to the 1951-1978 period. As a result, all increases in system losses that have occurred since the 1951-1978 period result in reductions to EBID's allocation. Similarly, all reductions in accounted deliveries that have occurred as a result of changes in Project accounting cause reductions to EBID's allocation. NM-EX 100, Barroll Rep. at 40-44. For example, the fact that municipal effluent from the City of El Paso in the El Paso Valley is no longer accounted as Project Supply reduces EBID's allocation. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 41, 58; *see also* NM-EX 428, Letter from Filiberto Cortez, Manager, Bureau of Reclamation, to Edd Fifer (July 8, 1999); NM-EX 100, Barroll Rep. at 30, 49- 50, Appx. D, D-25-28; NM-EX 101, Barroll Reb. Rep. at 24-36.

183. Much of the apparent discrepancies in Project performance during the period from 2006 forward relative to the 1951-1978 period may be explained by changes to the accounting methods at use in the Project. New Mexico's analysis shows that changes in Project accounting are responsible for up to 74,000 AF of the apparent reduction in Project deliveries or Project performance since the 1951-1978 period; D3 Allocation reduces EBID's allocation for all these reductions in Project performance. Thus, up to 74,000 AF of reduction in EBID's allocation are not a result of groundwater pumping in New Mexico. *See* NM-EX 006, Barroll 2d Decl. at ¶ 59; *see also* NM-EX 100, Barroll Rep. at 60.

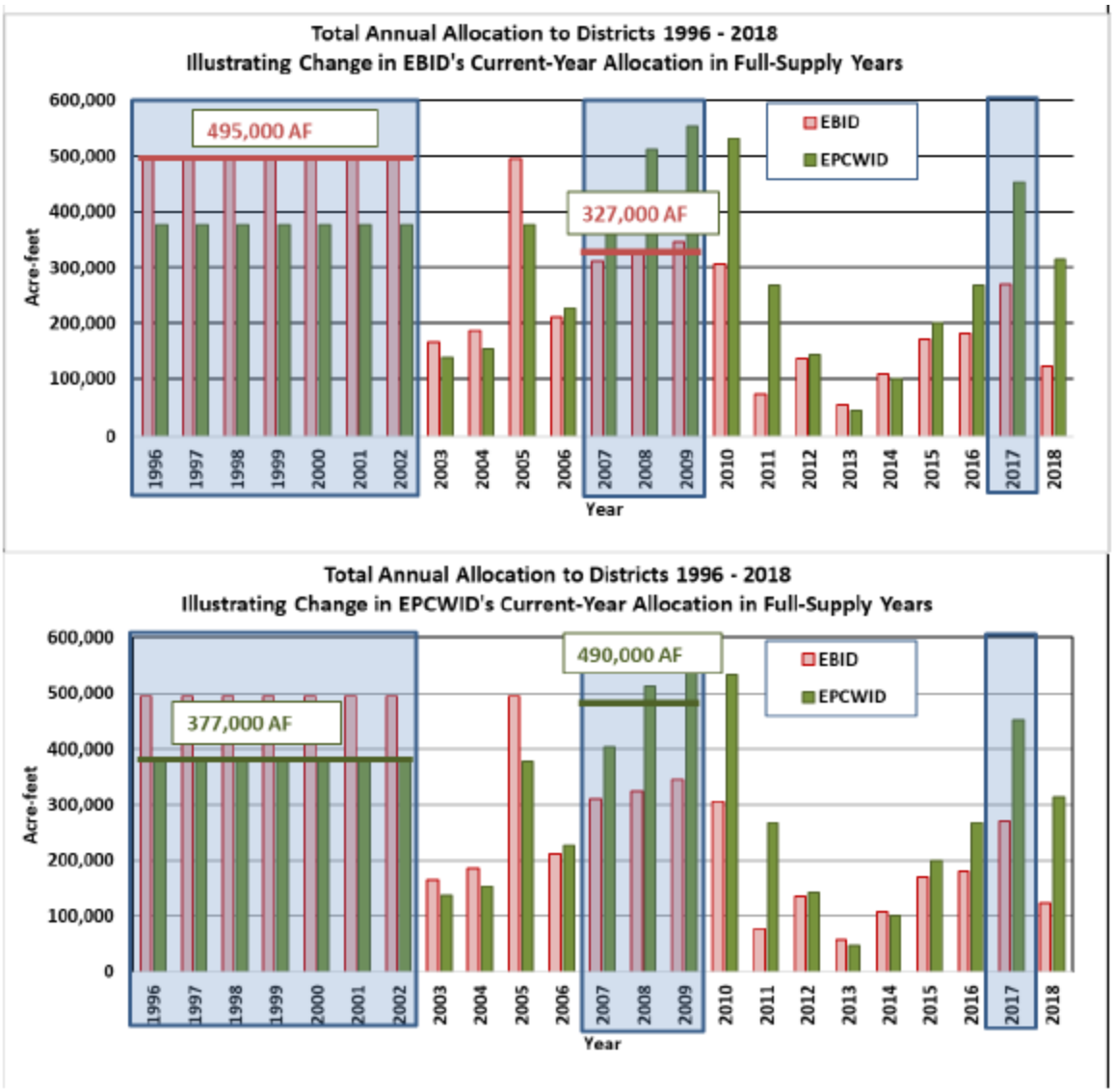
184. Also starting in approximately 2006, Reclamation initiated individual "carryover accounts" for the Districts. Thereafter and during the allocation process, the amounts in the Carryover account, plus extra water needed to ensure delivery of those accounts, has been deducted from Project Storage before the D3 Allocation for the next year is calculated. Because of the contemporaneous reduction in its allocation, EBID has not been able to take much advantage of Carryover. In contrast, EPCWID has carried over large amounts of allocation in many years. The mechanics of how these Carryover accounts are implemented means that large amounts of EPCWID Carryover have reduced the water available for allocation to EBID. *See* NM-EX 006, Barroll 2d Decl. at ¶ 60; NM-EX 100, Barroll Rep. at 48-49, Appx. D, D-21-23; NM-EX 101, Barroll Reb. Rep. at 21-24.

185. In January and February 2008, Reclamation, EPCWID, and EBID negotiated a new operating agreement for the Project as settlement for the two lawsuits among the parties ("2008 Operating Agreement"). *See generally* NM-EX 511, Filiberto Cortez, *Lower Rio Grande Project Operating Agreement: Settlement of Litigation* (Oct. 2008). The negotiations were mediated by Pat Gordon, Texas's Compact Commissioner. NM-EX 212, Gordon Dep. (July 15, 2020) at 42:8-43:24; NM-EX 107, Lopez Rep. at 43. [Apportionment UMF No. 78].

186. The 2008 Operating Agreement [adopted the D3-Allocation-Plus-Carryover allocation system], and therefore[, it changed] the amount of water that was available for lands in New Mexico and Texas. NM-EX 202, Cortez Dep. (July 30, 2020) at 94:23-96:9 (examining NM-EX 506, Cortez Affidavit ¶¶ 11, 25 (Apr. 20, 2007)); NM-EX 100, Barroll Rep. at 40-46; NM-EX 107, Lopez Rep. at 44-46. [Apportionment UMF No. 79].

187. United States witnesses have testified that the purpose of the change in allocation associated with the 2008 Operating Agreement was to both offset depletions caused by New Mexico groundwater pumping and depletions, and to protect the delivery of EPCWID's allocation from the effects of New Mexico pumping. *See, e.g.*, NM-EX 105, Ferguson Reb. Rep. at 5-6. The United States did not perform any quantitative analysis of the impacts of New Mexico pumping at the time the 2008 Operating Agreement was adopted. *See* NM-EX 006, Barroll 2d Decl. at ¶ 65.

188. Under the D3-Allocation-Plus-Carryover allocation system, EPCWID has been allocated and received far more than its 43% share of Project Water. Conversely, EBID has been allocated and received less than its 57% share of Project Water. Dr. Barroll's figure 8.3 depicts this change:



NM-EX 100, Barroll Rep. at 68; *see also* NM-EX 001, Barroll Decl., ¶ 36; NM-EX 100, Barroll Rep. at x-xi, 31, 33, 69.

189. From 2006-2019, EPCWID's percentage share of Project allocation, excluding Carryover, has averaged 56% of the total Districts' allocation, compared with 43% prior to 2006. If Project Supply had been divided 57:43—as it had been done historically—EPCWID would have been allocated a total 693,408 AF less during 2006-19. EBID would have been allocated 693,408 AF more of Project Supply. NM-EX 101, Barroll Reb. Rep. at 44 & Table 9. By reducing EBID's surface water allocation, the 2008 Operating Agreement forces EBID members to pump additional groundwater to order to supply their crops. *See* NM-EX 006, Barroll 2d Decl. at ¶ 62.

190. Following the 2008 Operating Agreement, among other changes, the Districts assumed from Reclamation the responsibility to calculate the actual Project release as a function of their

total daily orders. *See* NM-EX 207, Esslinger Dep. (Aug. 17, 2020) at 122:4-9; NM-EX 221, Reyes Dep. (Nov. 16, 2008) at 23:20-24:18; NM-EX 001, Barroll Decl. at ¶ 21. [Notice UMF No. 25].

191. During each irrigation season (approximately March through October), each District is entitled to order delivery of Project Water up to its annual Project allocation. Deliveries to the Districts are measured by gages and are converted into what are known as "Charged Diversions" (or "Allocation Charges"), which are then subtracted from each District's allocation account as the irrigation season progresses. NM-EX 001, Barroll Decl. at ¶¶ 21, 26; NM-EX 510, 2008 Operating Agreement at 9–11; NM-EX 529, Bureau of Reclamation, *Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas: Final Environmental Impact Statement*, at 18, 24, appx. B (Sep. 30, 2016). [Full Supply UMF No. 14].

192. During the course of the irrigation season, Reclamation receives orders from the Districts and adjusts the gates of Caballo Dam so that these orders are delivered to the Districts' canal headings. *See* NM-EX 531, Rio Grande Project Operations Manual at 4-5 (2018) [hereinafter "Operations Manual"]. Reclamation sets the Caballo release amount taking into account the losses and gains between Caballo Dam and the canal headings to which it is delivering water, so that regardless of what losses or gains are occurring, the amount ordered will reach the canal heading for which the order is being made. NM-EX 531, Operations Manual at 4–8. If the delivery to EPCWID falls short of the order, there is a procedure by which EPCWID, EBID and Reclamation coordinate and water is released from EBID's works to temporarily mitigate the shortfall until adjustment of Caballo releases resolves the problem. NM-EX 001, Barroll Decl., ¶ 27; NM-EX 531, Operations Manual, at 8. Historically, Reclamation has always been able to fulfill the orders made by the Districts. NM-EX 001, Barroll Decl. at ¶ 27; *see also* NM-EX 105, Ferguson Discl. at 12–13 ("EPCWID received all water that the district ordered during the period 1979-2002"); NM-EX 210, Ferguson Dep. (Feb. 20, 2020) at 260:6-7 ("I'm not aware of any records that suggest EP1 [EPCWID] ordered water that it did not receive."). [Full Supply UMF No. 15].

193. The years 2007 through 2010 were full-supply years for EPCWID because in each of those years EPCWID's annual allocation available for diversions at EPCWID's headgates (if ordered) exceeded 376,862 AFY—the full-supply allocation amount determined by Reclamation in 1990—and also exceeded the higher full-supply allocation to EPCWID (388,192 AFY) under the 2008 Operating Agreement. NM-EX 001, Barroll Decl. at ¶¶ 28, 31, 34-37 & Table 2; NM-EX 402, EPCWID Accounting Records; NM-EX 500, EPCWID Water Allocation Records (2006-2016); NM-EX 510, 2008 Operating Agreement, Tables 2 & 4. [Full Supply UMF No. 17].

194. In 2010, after it had an opportunity to study the new operations and method for allocating water, New Mexico raised several concerns about the 2008 Operating Agreement. One of New Mexico's primary concerns was that the 2008 Operating Agreement was inconsistent with the Compact because it did not allocate 57% of Project supply to New Mexico lands. NM-EX 517, Letter from John D'Antonio, State Engineer, State of New Mexico to Michael Connor, Commissioner, United States Bureau of Reclamation (Mar. 4, 2010); NM-EX 002, D'Antonio Decl. at ¶ 11. [Apportionment UMF No. 80].

195. Under the 2008 Operating Agreement, Reclamation delivers New Mexico's surface water to Texas without a required export permit required by New Mexico law. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 37(a), 50-51.

196. Reclamation's implementation of the D3 Allocation method and the 2008 Operating Agreement have reduced the delivery efficiency and performance of the Rio Grande Project as a whole. NM-EX 100, Barroll Rep. at 77-78; NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 18-19. Reclamation's implementation of the D3 Allocation method and the 2008 Operating Agreement have harmed New Mexico by substantially reducing its surface water supply in the LRG, and negatively impacting the water balance of groundwater systems of the Rincon and Mesilla basins. NM-EX 100, Barroll Rep. at 71-77. EPCWID and Texas have benefitted by gaining a disproportionate share of surface water. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 71-72.

197. After attempts to resolve the issues related to the 2008 Operating Agreement failed, in 2011, New Mexico filed suit in federal district court seeking to have the 2008 Operating Agreement set aside. NM-EX 520, Complaint for Declaratory and Injunctive Relief, New Mexico v. United States, No. 1:11-cv-00691 (D.N.M. Aug. 8, 2011). [Apportionment UMF No. 81].

198. Texas filed the present original action in reaction to New Mexico's 2011 federal district lawsuit. NM-EX 212, Gordon Dep. (July 15, 2020) at 109:2-13; NM-EX 224, Schmidt-Petersen Dep. (June 29, 2020) at 40:19-41:12. [Apportionment UMF No. 82].

IX. DEVELOPMENT OF SUPPLEMENTAL GROUNDWATER FOR IRRIGATION USE

A. Development Prior to 1938

199. Prior to the creation of the Project, farmers in the Rio Grande Valley below what is now Elephant Butte Reservoir recognized that groundwater was a potential source of irrigation supply. NM-EX 011, Stevens 2d Decl. at ¶ 4; NM-EX 006, Barroll 2d Decl. at ¶ 14.

200. In 1903, the New Mexico Agricultural Experiment Station reported that irrigators in Texas around El Paso had "been compelled to turn their attention to other water supplies or else abandon all agricultural work. … they have demonstrated the fact that crops can be profitably grown by irrigation from wells tapping the underflow in the Rio Grande Valley." The report noted that observation wells at the station demonstrated "an ample quantity" of groundwater for irrigation described as "reliable and secure," "subject to no fluctuations," and "sufficient to meet all reasonable needs." NM-EX 332, John J. Vernon and Francis E. Lester, Agricultural Experiment Station, N.M. College of Agriculture and Mechanical Arts, Bulletin No. 45, *Pumping for Irrigation from Wells*, at 12-14, 56 (1903); NM-EX 011, Stevens 2d Decl. at ¶ 4.

201. Prior to construction of the Rio Grande Project, irrigators in the Mesilla Valley in New Mexico developed a number of groundwater wells to supply irrigation water during period of low and variable surface supply. *See* NM-EX 011, Stevens 2d Decl. at ¶¶ 4, 30; NM-EX 006, Barroll 2d Decl. at 14; NM-EX 332, John J. Vernon and Francis E. Lester, Agricultural Experiment Station, N.M. College of Agriculture and Mechanical Arts, Bulletin No. 45, *Pumping for Irrigation from Wells*, at 55 (1903); NM-EX 342, Charles S. Slichter, United States Geological Survey, Water

Supply and Irrigation Paper No. 141, *Observations on the Ground Waters of the Rio Grande Valley*, at 22 (1905).

202. By 1940, after decades of Project operations, very few of these pre-Project wells remained in operation. However, documentation with the New Mexico Office of the State Engineer suggests that at least some irrigation wells were drilled in the 1920s and 1930s. *See* NM-EX 006, Barroll 2d Decl. at ¶ 14; *see also* NM-EX 427, C.S. Conover, United States Geological Survey, Geological Survey Water Supply Paper 1230, *Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico*, at 9, 103-105, 107 (1954).

203. Following construction of the Rio Grande Project storage and diversion works there was continuing interest, in both New Mexico and Texas, in developing groundwater resources to supplement existing irrigation supplies. *See, e.g.*, NM-EX 348, D.C. Henny, Board of Engineers, Rio Grande Project, *Report on Water Supply and Project Area High Line Canal Construction Power Development and City Water Supplies*, at 35 (Nov. 1919); NM-EX 349, Harold Conkling, United States Reclamation Service, *Water Supply of the Rio Grande River*, at TX_00182134 (June 18, 1919); *see also* NM-EX 113, Stevens Reb. Rep. at 11 (discussing Conkling's conclusion that groundwater pumping to expand the irrigable acreage of the project would only have affected surface supply in the two lowest supply years in the 58 years of data examined); NM-EX 337, D.C. Henny, Board of Engineers, Rio Grande Project, *Report on Water Supply and Project Area High Line Canal Construction Power Development and City Water Supplies*, at 35-36 (Nov. 1919).

204. Ultimately, as of 1938, scientific understanding of the relationship between groundwater and surface water in the Rio Grande Basin was limited and conflicting. The RGJI did not include an investigation of groundwater resources below Elephant Butte. NM-EX 113, Stevens Reb. Rep. at 4, 6, 8; NM-EX 011, Stevens 2d Decl. at ¶ 31. *See, e.g.*, NM-EX 342, Charles S. Slichter, United States Geological Survey, Water Supply and Irrigation Paper No. 141, *Observations on the Ground Waters of the Rio Grande Valley*, at 27-29 (1905); NM-EX 347, E.L. Barrows, *Report of Seepage Study on Rio Grande Between Elephant Butte Dam and Leasburg Dam*, at 1 (Nov. 26-28, 1928).

B. Development Between 1938 and 1979

205. Reclamation's and other parties' conduct in the post-Compact drought during the 1940s and 1950s indicates that no contemporary actor believed that the Compact prohibited groundwater pumping. *See* NM-EX 113, Stevens Reb. Rep. at 15; NM-EX 112, Stevens Rep. at 92-94.

206. In the middle 1940s, the Project faced its first significant period of drought following execution of the Compact. As a result, Project Storage levels fell below average, causing Reclamation to warn of potential water rationing. *See* NM-EX 006, Barroll 2d Decl at ¶ 15; NM-EX 100, Barroll Rep. at 19; NM-EX 112, Stevens Rep. at 94. *See, e.g.*, NM-EX 334, Barroll Excerpts of Rio Grande Project Histories 1946-50, at NM_00027487, NM_00027860, NM_00027861, NM_00028290, NM_00029140.

207. Drought conditions worsened in the 1950s. *See* NM-EX 006, Barroll 2d Decl. at ¶ 17. Beginning in 1951, Reclamation announced limits to per-acre allocations to Project lands. *See id.;* NM-EX 419, Barroll Excerpts of Rio Grande Project Histories 1951-1957, at NM_00029503-07

(indicating, in a series of "Water Announcements," that "strict rationing" would be mandatory and setting allotments).

208. Facing limited surface supply allocations, farmers within EBID and EPCWID both developed groundwater pumping capacity in order to supplement their irrigation supplies. *See* NM-EX 006, Barroll 2d Decl. at ¶ 15; NM-EX 100, Barroll Rep. at 19-20 (citing NM-EX 424, C.S. Conover, United States Geological Survey, Geological Survey Water Supply Paper 1230, *Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico* (1954); NM-EX 432, Narenda N. Gunaji, Engineering Experiment Station, New Mexico State University, *Groundwater Conditions in Elephant Butte Irrigation District* (Nov. 1961)); NM-EX, 437, Ralph E. Smith, United States Geological Survey, Bulletin 5603, *Ground-Water Resources of the El Paso District, Texas*, at 10 (Feb. 1956).

209. Reclamation recognized that groundwater pumping would be necessary to sustain the Project and actively encouraged the development of groundwater pumping capacity to supplement irrigation supply in the Project throughout the 1950s. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 15, 17-18; NM-EX 113, Stevens Reb. Rep. at 19-20; NM-EX 100, Barroll Rep. at 21; *see also, e.g.*, NM-EX 419, Barroll Excerpts of Rio Grande Project Histories 1951, at NM_00029507 (Aug. 1951 "Water Announcement" that encourages "[w]ater users who have pumps of good capacity that will supply their needs" to "arrange for transfer of part of their unused allotment water to those who are in need of additional water"); NM-EX 417, Barroll Excerpts of Rio Grande Project Histories 1951-1957, at NM_00029819, NM_00029823, NM_00030599, NM_00030890 (similar); NM-EX 420, Barroll Excerpts of Rio Grande Project Histories 1951-1957, at NM_00029465, NM_0029793 (permitting Project farmers to distribute pumped groundwater through Project conveyances).

210. The use of groundwater to supplement surface supplies allowed the Project to remain economically viable during the drought. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 19-20; *see also, e.g.*, NM-EX 420, Barroll Excerpts of Rio Grande Project Histories 1951-1957, at NM_00029783; NM_00030086, NM_00030570, NM_00030862, NM_00030870, NM_00030873, NM_00031107 (discussing the importance of well water irrigation to the economic production of the Project during the drought).

211. In the course of the drought, Reclamation and the irrigation districts developed a greater understanding of the effects of groundwater pumping on surface supply in the region. *See* NM-EX 011, Stevens 2d Decl. at ¶ 32; NM-EX 006, Barroll 2d Decl. at ¶ 16. Hydrologist Clyde S. Conover conducted an investigation at the request of EBID and published a report in 1954; he concluded that "[g]round water obtained by pumping in the Rincon and Mesilla Valleys does not represent an additional supply or new source of water to the project, but rather a change in method, time, and place of diversion of the supplies already available" and that pumping in successive dry years would draw from groundwater storage and require a period of recharge in later years in order for return flows to recover." NM-EX 113, Stevens Reb. Rep. 18; NM-EX 424, C.S. Conover, United States Geological Survey, Geological Survey Water Supply Paper 1230, *Ground-Water Conditions in the Rincon and Mesilla Valleys and Adjacent Areas in New Mexico*, at 2-3, 128 (1954). Other follow-up studies built upon this analysis and refined Conover's conclusions regarding groundwater recharge. *See* NM-EX 113, Stevens Reb. Rep. 20 (summarizing the work

of Narendra N. Gunaji, who concluded that Conover overestimated the length of time necessary to recharge the groundwater after surface supplies return to normal).

212. Despite a coalescing understanding of the interrelationship between groundwater pumping and surface supplies, the historical record contains no evidence that any party objected to the increase in groundwater extraction during 1940s and 1950s. NM-EX 113, Stevens Reb. Rep. at 15-18; *see also* NM-EX 241, Miltenberger Dep. (June 8, 2020) at 93:10-19, 114:9-115:23; NM-EX 240, Kryloff Dep. (Aug. 6, 2020) at 111:1-112:14.

213. Instead, the improving scientific understanding about the groundwater supply in this period led Reclamation to develop and support a system conjunctive (joint) management of the overall supply. *See* NM-EX 113, Stevens Reb. Rep. at 15. Indicative of this development, overall agricultural demand for water in EBID was effectively stable over the period from 1950 forward, with the amount of groundwater pumping increasing or decreasing year over year to meet the deficit of between demand and available surface supply. *See* NM-EX 101, Barroll Reb. Rep. at 9-10, Figs. 9-10. *Cf.* NM-EX 243, Esslinger Dep. (Aug. 17, 2020) 112:4-113.

214. In the 1960s and 1970s, Reclamation continued to encourage the Districts to develop groundwater pumping capacity to satisfy irrigation demands during periods of low supply. NM-EX 006, Barroll 2d Decl. at ¶ 21; *see also, e.g.*, NM-EX 242, Esslinger Dep. (Aug. 18, 2020) at 22:8-24:18 (concerning Reclamation support for EBID's well drilling program); NM-EX 441, Salopek Aff. at ¶¶ 8-9 (Mar. 3, 2004) (describing development of EBID's well-drilling program); NM-EX 422, License Agreement with El Paso County Water Improvement District No. 1 for Installation of 4 Water Wells (Feb. 1, 1978).

C. Development Between 1979 and 2006

215. Reclamation's adoption of the D1/D2 allocation method formalized its recognition of conjunctive use within the Project. Because the method is premised upon diversion data from a period after the significant development of groundwater in the 1940s and 1950s, it presumes the hydrologic conditions that existed during and following the development of significant conjunctive use within the Project, and acceptance of the methodology is consistent with a common understanding that groundwater pumping for supplemental irrigation purposes is permitted under the Compact. Stated differently, the D1/D2 allocation effectively "grandfathered" in any effects that groundwater pumping during 1951-78 had on Project operations. *See* NM-EX 006, Barroll 2d Decl. at ¶ 57; NM-EX 107, Lopez Rep. at 35-36; NM-EX 108, Lopez Reb. Rep. at 14; *see also* NM-EX 101, Barroll Reb. Rep. at 1; NM-EX 007, D'Antonio 2d Decl. at ¶ 20; NM-EX 012, Sullivan Decl. at ¶¶ 17, 112.

216. During the D1/D2 period, Texas continued to support conjunctive use within the Project. For instance, when New Mexico declared a groundwater basin in the Lower Rio Grande, limiting further depletions and increasing administrative oversight, Texas urged New Mexico to reconsider, citing the importance of conjunctive use within the Project. *See* NM-EX 107, Lopez Rep. at 33; NM-EX 418, Transcript of Proceedings from 43rd Annual Meeting of the Rio Grande Compact Commission, at 66-67 (Mar. 25, 1982).

217. Prior to 1980, the conjunctive use of surface and groundwater in the Project was hydrologically stable. In drought years, farmers in both Texas and New Mexico, with the encouragement of Reclamation, pumped groundwater to supplement the surface supply delivered by the Project. In wetter years, the groundwater table throughout the Project rebounded quickly from the effects of that pumping. The state line was irrelevant. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 12; *see also* NM-EX 506, Cortez Aff. at ¶ 8; NM-EX 100, Barroll Rep. at §§2.1, 2.2.

218. Groundwater rights for irrigation in the LRG were fully developed prior to 1980, during the drought periods of the 1950s, 1960s and 1970s, in cooperation with Reclamation. During that time, it is likely that almost every acre of land in EBID was irrigated by groundwater. *See* Barroll 2d Decl. at ¶ 79.

219. In about 1980, the City of El Paso expressed its intent to appropriate a one hundred-year supply of groundwater in New Mexico. In response to this development and to the recent changes in Project operations following transfer of title to the diversion structures from Reclamation to the Districts, the New Mexico State Engineer declared New Mexico's LRG Underground Water Basin in 1980 and extended it in 1982. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 5(b), 8-9, 14-15; *see also* NM-EX 427, Office of the State Engineer, State Engineer Order No. 126 (Sept. 1980); NM-EX 428, Office of the State Engineer, State Engineer Order No. 135 (Sept. 1982).

220. Since 1980, the New Mexico State Engineer has not permitted any new appropriations of groundwater in the groundwater basins supporting the Rio Grande. A review of all permits since 1980 revealed only three exceptions totaling 13.865 AF per year, as compared to approximately 350,000 to 375,000 AF of total annual use in the Lower Rio Grande Basin in New Mexico. *See* NM-EX 010, Serrano Decl. at ¶ 21; NM-EX 007, D'Antonio 2d Decl. at ¶¶ 18-19.

221. Under NMSA 1978 §72-12-5 (1931), water rights users who claim a priority date earlier than the September 1980 LRG Groundwater Basin declaration could file with the State Engineer individual "declarations" describing their claimed existing rights and were encouraged to do so by the State Engineer. The vast majority of these declarations reflect that the subject wells were drilled during the droughts of the 1950s and 1970s. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 19.

222. In total, since the New Mexico State Engineer declared the Lower Rio Grande Basin in 1980, the New Mexico State Engineer has permitted approximately 2,678 changes to existing irrigation well water rights. Each one went through the rigorous and comprehensive analysis required by the permitting process to assure that the change would not cause new depletions to the river or to other water rights owners. *See* NM-EX 010, Serrano Decl. at ¶ 18; NM-EX 007, D'Antonio 2d Decl. at ¶ 21.

223. The average annual volume of LRG groundwater pumped in New Mexico during the period 1979-2005 (109,600 AF) was much less than during the period 1951-78 (179,100 AF). NM-EX 012, Sullivan Decl. at ¶ 20; *see also* NM-EX 123 Spronk Reb. Rep. at 27.

D. Development After 2006

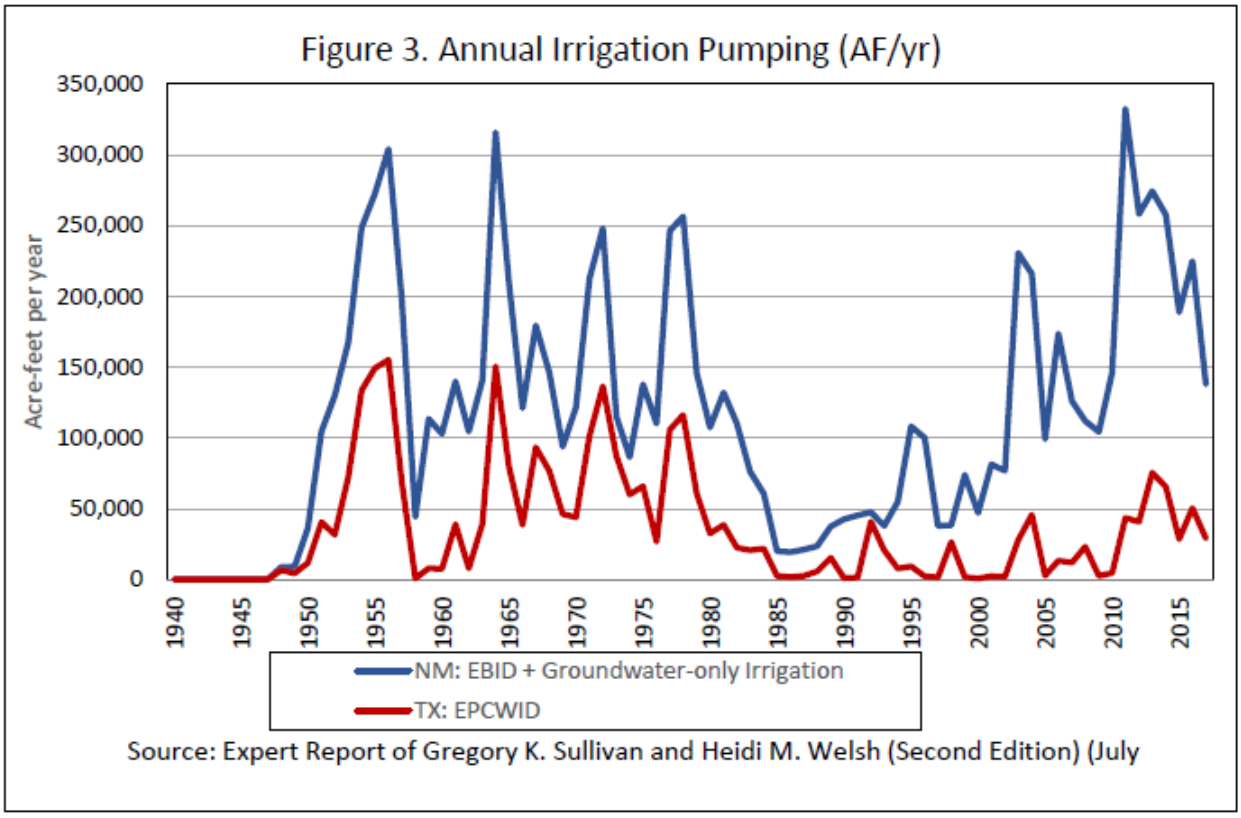
224. Farmers in both districts continue to rely, as they have throughout the history of the Project, upon conjunctive management of groundwater and surface supply. *See* NM-EX 006, Barroll 2d Decl. at ¶ 28; *see also* NM-EX 242, Esslinger Dep. (Aug. 18, 2020) at 30:12-46:4; NM-EX 245,

King Dep. (May 18, 2020) at 91-92, 101. For instance, EPCWID maintains 62 high capacity wells, and its constituents have an unknown additional number of private wells for supplemental irrigation use. NM_EX 100, Barroll Rep. 25; *see also* NM-EX __, Reyes Dep. (Aug. 31, 2002) 36:22-50:2 (discussing the wells and their use during the 2003-04 drought).

225. Reflecting EBID's reliance on conjunctive use, when EBID and EPCWID negotiated the 2008 Operating Agreement, EBID's principals understood that a primary effect of the agreement would be to "grandfather" levels of groundwater pumping in New Mexico commensurate with the D2 period. *See* NM-EX 108, Lopez Reb. Rep. at 17; NM-EX 101, Barroll Reb. Rep. at 43; *see, e.g.*, NM-EX 208, Esslinger Dep. (Aug. 18, 2020) at 157:11-24.

226. Following the 2008 Operating Agreement, New Mexico farmers were forced to increase their groundwater use steeply in order to maintain their crops and balance reduced surface water allocations. In years in which the Project has a full supply available, the 2008 Operating Agreement has reduced EBID's allocation by more than one-third, leading to increased groundwater pumping in full supply and decreased opportunity for recharge. As a result, drawdowns to the aquifer in the New Mexico portion of the Project accelerated, and the aquifer fell to unprecedentedly low levels. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 47; NM-EX 006, Barroll 2d Decl. at ¶¶ 26, 65, 81; *see also, e.g.*, NM-EX 100, Barroll Rep. at §§6.3, 6.4, 9.3, 9.4, 9.5.

227. Nevertheless, current irrigation well pumping levels in in low supply years in New Mexico are comparable to irrigation well pumping during the 1950s drought. The comparison may be visualized in the following figure:



NM-EX 006, Barroll 2d Decl. at ¶ 26.

228. Many water rights owners in the Lower Rio Grande Basin in New Mexico have informed the Water Master that the reduction in surface water effected by the 2008 Operating Agreement has had significant negative impacts on them, including increased pumping costs and loss of their crops and property improvements. *See* NM-EX 010, Serrano Decl. at ¶¶ 35, 36.

229. Excepting only irrigation and single family wells, the New Mexico State Engineer issued permits for 252 wells in the Mesilla and Rincon Basins from 2016 to December 14, 2020. Each such application is subject to comprehensive analysis and, if permitted, are permitted with conditions such that the well causes no new depletions of the Rio Grande or to other water rights owners. *See* NM-EX 010, Serrano Decl. at ¶ 18.

230. As of 2020, there are approximately 3,000 total irrigation, commercial, mutual domestic, and industrial wells in the Lower Rio Grande in New Mexico. The New Mexico State Engineer meters every well within this group and enforces compliance with water rights limits. *See* NM-EX 010, Serrano Decl. at ¶¶ 14, 20.

231. There is no indication, from the historical record, that any party, prior to this litigation, ever formally requested that New Mexico curtail groundwater pumping below Elephant Butte. *See* NM-EX 008, Lopez 2d Decl. at ¶ 39; *see also* NM-EX 002, D'Antonio Decl. at ¶ 18; NM-EX 004, Schmidt-Petersen Decl. at ¶ 16; NM-EX 218, Lopez Dep. (July 7, 2020) at 140:13-141:13; NM-EX 204, D'Antonio Dep. (June 25, 2020) at 169:1-7.

232. Irrigation well pumping in the LRG portions of New Mexico has been fully metered since 2008. Metering data, combined with surface water delivery data, indicates that New Mexico farmers are applying an average of 4.0 AF of combined surface and groundwater to each irrigated acre. By comparison, EPCWID allots 4.0 AF per acre of surface water to its farmers in full-supply years, plus unknown amounts of groundwater. NM-EX 006, Barroll 2d Decl. at ¶ 22; *see also* NM-EX 423, 2001 Rio Grande Project Third Party Implementing Contract Among the U.S., EPCWID, and the City of El Paso at 49, 59 (Apr. 10, 2001)

X. DEVELOPMENT OF GROUNDWATER FOR MUNICIPAL AND INDUSTRIAL USE

233. Prior to 1938, municipalities in New Mexico below Elephant Butte Reservoir relied on groundwater for municipal and industrial use. *See* NM-EX 011, Stevens 2d Decl. at ¶ 30; NM-EX 112, Stevens Rep. at 83-84; NM-EX 318, Harlow M. Stafford et al., *Rio Grande Joint Investigation Part I: General Report of the Rio Grande Joint Investigation*, at 11, 14-16 (1937) (cataloguing use by "Cities, Towns, and Villages"); NM-EX 350, R.A. Scalapino, *Ground-Water Resources of the El Paso Area, Texas*, at 1 (1949) (discussing "[a]n intensive study of ground-water resources of the El Paso area" for municipal use in 1935).

234. Following the Compact, cities and towns in the LRG have grown in their reliance on groundwater supplies. Without groundwater supplies, cities and towns would be left without water for their citizens. Outside of established public utilities, domestic wells also continue to supply waters to individual homes. *See* NM-EX 006, Barroll 2d Decl. at ¶ 28.

235. For instance, Las Cruces has pumped groundwater since the late nineteenth century, gradually increasing their diversions as the population of the city increased. NM-EX 013, Wilson Decl. at ¶ 4. Within New Mexico, the City of Las Cruces currently pumps approximately 15,000 AF/yr from wells in the Mesilla basin and 4,000 AF/yr from wells in the Jornada del Muerto, an adjoining but hydrologically disconnected basin. *See* NM-EX 006, Barroll 2d Decl. at ¶ 29; NM-EX 013, Wilson Decl. at ¶ 6. However, given the amount of water the City of Las Cruces returns to the Rio Grande it supplies a net gain to the river system. NM-EX 013, Wilson Decl. at ¶ 6.

236. Treated effluent from Las Cruces, regardless of source, returns to the Rio Grande below Las Cruces and is available for diversion as part of Project Supply. *See* NM-EX 006, Barroll 2d Decl. at ¶ 29; NM-EX 013, Wilson Decl. at ¶ 6.

237. In New Mexico, groundwater pumping for municipal and industrial use comprises only 10 to 20% of total groundwater pumping, with the remainder being irrigation use. In contrast, Texas groundwater pumping for municipal and industrial use comprises far more than half of all groundwater pumping in the state within the Compact area (although a lack of metering data makes it difficult to ascertain the exact percentage). *See* NM-EX 006, Barroll 2d Decl. at ¶ 30.

238. Texas pumps groundwater for municipal and industrial uses from its part of the Mesilla basin. Texas does not provide comprehensive metering data, but the Canutillo well field is known to pump approximately 24,000 AF/yr, based on data by the El Paso Water Utility, for El Paso municipal use. A portion of this water returns to the Rio Grande as return flow below the Courchesne gage and is accounted for as Project Supply. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 31-32; NM-EX 100, Barroll Rep. at 30.

239. The City of El Paso and Ciudad Juarez also pump large amounts of water from the Hueco bolson. The extent of this pumping has resulted in a cone of depression more than 100 feet deep and has been identified as a significant problem since the 1980s. The rate of pumping increased substantially since 1938. There has been no recovery in these groundwater levels. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 32, 45; NM-EX 012, Sullivan Decl. at ¶ 36; *see also* NM-EX 117, Greg Sullivan, LRG Wells and Groundwater Level Drawdowns (Sept. 15, 2020); NM-EX 121, Spalding & Morrissey Rep. at fig. 5.4.

240. The decline in groundwater levels in the El Paso Valley due to municipal pumping by El Paso and Ciudad Juarez has caused the groundwater to become disconnected from the surface water in northern portions of the valley. This means that Project water conveyance losses in the disconnected area are at a maximum and are not affected by variations in pumping. *See* NM-EX 012, Sullivan Decl. at ¶ 47.

241. Non-irrigation groundwater pumping in Texas and Mexico in basins connected to the Rio Grande has averaged 86,700 AF/y and 150,900 AF/y, respectively during the period 2013-17. In comparison, non-irrigation groundwater in New Mexico is only about 37,000 AF/y, of which 17,000 AF/y returns to the Rio Grande as return flow. *See* NM-EX 012, Sullivan Decl. at ¶ 16; *see also* NM-EX 122, Spronk Rep. at 51, 205-07.

XI. IMPACT OF GROUNDWATER PUMPING

242. When water is pumped from a stream-connected aquifer, that pumping eventually depletes water from the stream system, but the timing of the depletion, the location where that depletion occurs, and the amount of depletion depends on a variety of hydrologic conditions as well as the location and construction of the pumping wells. Stream depletions generally consist of reduction of gains to streams and to irrigation drains, and increases in the seepage loss from natural streams and irrigation conveyances. NM-EX 006, Barroll 2d Decl. at ¶ 34.

243. The Rio Grande within the LRG and El Paso Valley has historically had both gaining and losing reaches. During times of low Project Supply and high groundwater pumping, the losses from the Rio Grande are higher than in high-Project-supply years with low groundwater pumping. Groundwater pumping in both New Mexico and in the Texas Mesilla impact the gains and losses from the Rio Grande in the Mesilla Valley. Groundwater pumping in both Texas and Mexico impact the gains and losses from the Rio Grande in the El Paso Valley. NM-EX 006, Barroll 2d Decl. at ¶ 35; *see also* NM-EX 122, Spronk Rep. at 92-98; NM-EX 121, Spalding & Morrissey Rep. at fig. 9.3.

244. Stream depletion by groundwater pumping does not necessarily equate to impairment of other water rights, even in a fully appropriated stream system. The impact of stream depletion upon other water users depends on a number of factors, including hydrologic conditions and river operations. In the case of the Project, stream depletions that occur during years of adequate supply do not impact downstream deliveries. Instead, as a function of normal operations of the Project, Reclamation adjusts releases from Caballo as necessary, taking into account the gains and losses occurring between Caballo dam and the points of delivery, to ensure that all the water that has been ordered is in fact delivered. NM-EX 006, Barroll 2d Decl. at ¶ 36; *see also* NM-EX 100, Barroll Rep. at § 2.2, Appx. B.

245. Groundwater pumping in both New Mexico and Texas (and Mexico as well) may cause stream depletions. These stream depletions may cause Reclamation to release more water from Project Storage in order to deliver water to Project beneficiaries than otherwise. NM-EX 006, Barroll 2d Decl. at ¶¶ 37, 52-53; *see also* NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 4; NM-EX 122, Spronk Rep. at 92-93.

246. Groundwater pumping by in Texas and New Mexico intercepts return flows that are associated with Project irrigation and reduces the flow in Project drains. But, these effects do not necessarily translate to effects upon Project deliveries. Prior to 2006, stream depletions occurring in Project full-supply years would have no effect on either the water allocated to the Districts or the water delivered to the Districts in those full-supply years. Furthermore, if Project Supplies remained adequate until the next spill of the Project reservoirs, then the Project beneficiaries would not experience any later reduction in deliveries resulting from those stream depletions. However, stream depletions that occurred in the years leading up to a shortage could reduce the Project allocations in the subsequent water-short years, but this depends on many factors, including increased reservoir evaporation and spills that may occur in the interim. NM-EX 006, Barroll 2d Decl. at ¶¶ 38-39, 52-53; *see also* NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 3-9; NM-EX 122, Spronk Rep. at 71-72; NM-EX 012, Sullivan Decl. at ¶¶ 13, 17-18, 25.

247. The effects of groundwater pumping in New Mexico on Project deliveries are intermittent and variable for a number of reasons. First, pumping in New Mexico has varied substantially since it developed in the early 1950s, with higher amounts of pumping in low Project supply years and lower amounts of pumping in full supply years. Second, in full supply years, the Districts received all water they ordered, up to their total allocations, so pumping does not impact deliveries in those years. Third, some of the river depletions from pumping occur during the winter when the Project is not making deliveries. Fourth, the amount and timing of Rio Grande depletions from pumping depends on many factors, including the locations and depth of the wells, the timing and amount of pumping, aquifer characteristics, the interaction of ground water and surface water, Project and reservoir operations, including spills, and many other factors. *See* NM-EX 012, Sullivan Decl. at ¶¶ 13-14, 102; *see also* NM-EX 122, Spronk Rep. at 194, 318; NM-EX 123, Spronk Reb. Rep. at 58-59.

248. Groundwater pumping in Texas has lowered groundwater levels, intercepted irrigation return flows, dried up drains, and increased seepage losses from the Rio Grande, impacting the entire Project. These effects have increased depletions to surface water flows and increased conveyance losses in delivering Project water. In fact, these drawdowns may have disconnected the stream system from the aquifer in the El Paso area, maximizing the seepage losses in this area. *See* NM-EX 006, Barroll 2d Decl. at ¶ 42, 44; NM-EX 012, Sullivan Rep. at ¶ 36; *see also* NM-EX 101, Barroll Reb. Rep. at 18; NM-EX 122, Spronk Rep. at 65.

249. The effects of groundwater pumping in Texas impact the Project in New Mexico. The Rincon-Mesilla Basin and El Paso Valley are hydraulically connected by the surface flow of the Rio Grande. Additionally, the Project is operated as a single unit. As such, the effects of pumping on surface flows in Texas can propagate throughout the Project area and impact deliveries of Project water to New Mexico. *See* NM-EX 012, Sullivan Decl. at ¶¶ 72-73.

250. Prior to 2006, groundwater levels in the Rincon and Mesilla valleys were relatively high and fluctuated from season to season due to the application of irrigation water from the Rio Grande on Project lands resulting recharge to the groundwater system. Groundwater levels also fluctuated from year to year based on Project Supply levels: in low supply years groundwater levels declined, and in subsequent full-supply years groundwater levels recovered. Following the adoption of D3 Allocation in 2006 and the 2008 Operating Agreement, groundwater levels in the Rincon and Mesilla valleys have declined in years of low Project supply but have not recovered in any substantive way in subsequent full-supply years. NM-EX 006, Barroll 2d Decl. at ¶¶ 44, 66; *see also* NM-EX 100, Barroll Rep. at 73-77; NM-EX 012, Sullivan Decl. at ¶¶ 13, 45.

251. D3 Allocation and the 2008 Operating Agreement starve the upper part of the Project of water, causing reductions in total Project return flows and depleting the groundwater supply in the upper part of the Project. The net result is a reduction in Project delivery efficiency and a reduction in total Project Supply. NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 14-20. To use the analogy proposed by Texas, the 2008 Operating Agreement itself "reduces the size of the pizza" that represents Project Supply upon which the two District rely. *See* NM-EX 006, Barroll 2d Decl. at ¶ 64.

252. Because the D3 Allocation method reduces EBID's allocation to account for any real or apparent discrepancies in Project performance relative to the 1951-1978 period, groundwater

pumping in Texas reduces EBID's allocation. Analyses using the ILRG Model indicate that Project water diversions by New Mexico during 2006 - 2017 were reduced by an average of 15,500 AF/y by Texas pumping, an average of 94,200 AF/y by imposition of the 2008 OA, an average of 86,300 AF/y by increases in Project operational waste (mostly in Texas), and by an average of 72,400 AF/y by changes in EPCWID operations. Due to nonlinearities in the ILRG Model, the foregoing impacts are not fully independent and additive. NM-EX 012, Sullivan Decl. at ¶¶ 15, 18; *see also* NM-EX 006, Barroll 2d Decl. at ¶ 41; NM-EX 123, Spronk Reb. Rep. at 379, 533, 577, 709.

253. Using the New Mexico Integrated Lower Rio Grande Model ("ILRGM") to calculate the impact of New Mexico pumping on Texas, New Mexico experts have shown that the impact is much smaller than the reallocation of Project water away from New Mexico the 2008 Operating Agreement. *See* NM-EX 006, Barroll 2d Decl. at ¶¶ 68, 80; *see also* NM-EX 103, Barroll 2d Suppl. Reb. Rep. at vi- vii, 9, 20.

254. Results from the ILRGM show that had New Mexico had been allocated 57% percent of Project Supply from 2006 through 2017, the combined effects of that allocation increase. The effects of the improved groundwater conditions and Project performance would have resulted in New Mexico being allocated a total of 1,053,393 AF more than under D3 Allocation, or, on average, 94,000 AF more per year from 2006 through 2017. In effect, the D3 Allocation and the 2008 Operating Agreement have reduced New Mexico surface water allocation by 88,000 AF/yr on average since 2006. *See* NM-EX 006, Barroll 2d Decl. at ¶ 69; *see also* NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 15-16.

255. The ILRGM also calculates that if New Mexico had been allocated 57% of Project Supply, the resulting improved groundwater conditions and associated reduction in river seepage—and increased drain flow—would have resulted in a total increase in Project Supply deliveries of 863,730 AF during 2006 through 2017, or an average of 72,000 AF/year. *See* NM-EX 006, Barroll 2d Decl. at ¶ 70; NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 18.

256. Had EBID been allocated and delivered its 57% share of Project Supply since 2006, the Project as a whole would have benefitted from an improvement in groundwater conditions in New Mexico. This improvement in groundwater conditions would have increased Project delivery efficiency and thereby further increased EBID's allocation and delivery at little cost to EPCWID. *See* NM-EX 006, Barroll 2d Decl. at ¶ 62; *see also* NM-EX 103, Barroll 2d Suppl. Reb. Rep. at 18-19.

XII. GROUNDWATER MODELING

257. The ILRGM model simulates the impact of pumping on surface water flows and the effects on Project operations and all simulated processes that result as the changed conditions ripple spatially and temporally through the model just as they would in the real world. This is referred to as "re-operation" and is an essential element of the ILRG Model that is not present in the ground water model of the Rincon and Mesilla basins developed by the Texas experts ("Texas Model"). *See* NM-EX 012, Sullivan Decl. at ¶ 61.

258. New Mexico's ILRGM is the best available tool for evaluating the claims and counterclaims in this case because it is the only hydrologic model available to evaluate the effects of groundwater pumping and changes in historical Project operations on Project deliveries to Texas and New Mexico. The ILRGM is superior to the Texas Model because (a) it simulates the entire Lower Rio Grande area from Elephant Butte Reservoir to Fort Quitman, (b) it employs monthly stress periods that allow it to simulate the important seasonal variations in groundwater and surface water flows, and (c) it is capable of simulating the dynamic response of Project operations to changes in flow throughout the entire Project area. Conversely, the Texas Model fails to accurately evaluate pumping effects to Project deliveries because it does not simulate the dynamic response of Project reservoir releases to changes in flows that occur without pumping, provides no simulations for the area downstream of the El Paso gage and thus cannot simulate the feedback response from a large part of the Project area, and uses annual stress periods that prevent distinguishing impacts that occur during the Project release period (irrigation season) from impacts that occur during the non-irrigation season. In short, the absence of dynamic simulation of Project operations renders the Texas Model of no utility in analyzing the key issue presented in this case: impacts to Project deliveries from groundwater pumping and changes in historical Project operations. NM-EX 012, Sullivan Decl. at ¶ 118; *see also* NM-EX 122, Spronk Rep. at 9, 113.

259. The ILRG Model has been used to run several model scenarios that evaluate New Mexico's pumping, Texas's pumping, the impacts of implementing the 2008 OA, the impacts of changes to historical Project operations and accounting in EPCWID on overall Project allocations, and various potential conjunctive use scenarios. The ILRG Model is the only model in this case that is capable of analyzing and quantifying the effects of these scenarios. The Texas Model is incapable of such analyses. NM-EX 012, Sullivan Decl. at ¶ 119; *see also* NM-EX 122, Spronk Rep. at 47.

XIII. DIVERSION OF PROJECT SUPPLY FOR MUNICIPAL AND INDUSTRIAL USE

260. The City of El Paso diverts a considerable amount of Project Water for municipal purposes in the El Paso Valley. Much of this municipal use has replaced Project irrigation in Texas. *See* NM-EX 423, Rio Grande Project Implementing Third-Party Contract among the U.S., EPCWID, and the City of El Paso at 48, 74 (Apr. 10, 2001). Some of these municipal diversions are a result of contractual agreements allowing for the exchange of Project Supply for municipal effluent, which is then considered to be "District Supply" for EPCWID, and not "Project Supply." *See* NM-EX 006, Barroll 2d Decl. at ¶ 54.

261. Municipal effluent and return flows associated with the municipal use of Project Water in the El Paso Valley were originally accounted as part of Project Supply. NM-EX 100, Barroll Rep. at 30; NM-EX 428, Letter from Filiberto Cortez, Manager, Bureau of Reclamation, to Edd Fifer (July 8, 1999). However, Texas now intercepts these municipal Project return flows by diverting them directly into EPCWID conveyances and this water is no longer accounted for as Project Supply. NM-EX 100, Barroll Rep. at 30, 49-50; NM-EX 102, Barroll Reb. Rep. at 24-36. The reduction in irrigation return flows in Texas, as well as the fact that Reclamation no longer charges EPCWID for the use of any such return flows, means that a greater portion of EPCWID's charged diversions consist of reservoir releases than occurred previously. This change may increase EPCWID's draw on the reservoir, reducing the amount of water available for allocation to both New Mexico and Texas. *See* NM-EX 006, Barroll 2d Decl. at ¶ 55.

262. The treatment of municipal effluent in the El Paso Valley stands in stark contrast to the treatment of municipal effluent in New Mexico. Municipal effluent from the City of Las Cruces is available for diversion at Mesilla Dam and at the Project diversion heading farther downstream, and the diversion of that effluent is accounted as Project Supply. *See* NM-EX 006, Barroll 2d Decl. at ¶ 55.

XIV. ABSENCE OF SHORTAGE NOTIFICATIONS TO NEW MEXICO

A. Regular Reclamation Reporting

263. Reclamation compiles an annual written report to the Rio Grande Compact Commission and gives an annual oral report at the Rio Grande Compact Commission meeting regarding operation of the Rio Grande Project. These reports contain general, annualized data concerning the operation of the Project, such as the total amount of release from Project Storage, the amount of water in Project Storage, and the annual allocations to each district. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 44:6-45:4, 102:21-103:6; NM-EX 203, Cortez Dep. (July 31, 2020) at 209:20-210:14. *E.g.*, NM-EX 516, Bureau of Reclamation, *Calendar Year 2009 Report to the Rio Grande Compact Commission*, 59-67 (Mar. 2010); NM-EX 003, Lopez Decl. at ¶¶ 14-15. [Notice UMF No. 26].

264. Reclamation also provides to the State of New Mexico courtesy copies of periodic reports concerning Rio Grande Project operations, including reservoir elevations, flow readings, and storage transfers between reservoirs. *See* NM-EX 203, Cortez Dep. (July 31, 2020) at 220:2-222:4. *E.g.*, NM-EX 513, Letter from Filiberto Cortez, Manager El Paso Field Division, Bureau of Reclamation, to Water Accounting Division, U.S. Section, International Boundary Water Commission (Sept. 29, 2009); NM-EX 514, Letter from Filiberto Cortez, Manager El Paso Field Div., U.S. Bureau of Reclamation, to Lieutenant Col. Kimberly Colloton, District Engineer, Army Corps of Engineers (Sept. 29, 2009). [Notice UMF No. 27].

265. Reclamation also provides to the Engineer Advisers to the Rio Grande Compact Commission a report of Project accounting. Prior to 2006, that Project accounting amounted to Compact accounting below Elephant Butte Reservoir for New Mexico (EBID) and Texas (EPCWID). After the changes in Project operations in 2006, Project accounting provides a record of the deviation from the apportionment in the Compact. *See* NM-EX 008, Lopez 2d Decl. at ¶ 31; *see also* NM-EX 107, Lopez Rep. at 24, 30, 32, 44-48.

266. New Mexico does not, however, receive daily operation information such as the daily release amount, the order amounts, or the timing of releases to satisfy orders. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 114:6-22; NM-EX 002, D'Antonio Decl. at ¶ 17; NM-EX 004, Schmidt-Petersen Decl. at ¶ 15; NM-EX 100, Barroll Rep. at 47; NM-EX 107, Lopez Rep. at 73 ("Historically, Reclamation information and data about Project operations has not routinely been shared with the States."). [Notice UMF No. 28].

267. Likewise, New Mexico does not receive any routine notice that any specific water order, whether at the district or individual farmer level, has or has not been filled. NM-EX 002, D'Antonio Decl. at ¶ 17; NM-EX 004, Schmidt-Petersen Decl. at ¶ 15. [Notice UMF No. 29].

268. Accordingly, New Mexico has no means to know, at any given time, what proportion of the water in the Rio Grande below Elephant Butte Reservoir is destined for delivery to EBID, EPCWID, or Mexico. NM-EX 002, D'Antonio Decl. at ¶ 17; NM-EX 004, Schmidt-Petersen Decl. at ¶ 15. [Notice UMF No. 30].

269. Further, New Mexico has no means to know, at any given time, whether the Rio Grande Project releases are in fact delivered to Texas in satisfaction of EPCWID orders. NM-EX 002, D'Antonio Decl. at ¶ 17; NM-EX 004, Schmidt-Petersen Decl. At ¶ 15; *see also* NM-EX 211, Gordon Dep. (July 14, 2020), 180:14-181:7. [Notice UMF No. 31].

270. Conversely, to the extent that any amount of water released from Project supply pursuant to a specific order is intercepted prior to delivery, New Mexico would have no basis to know of a shortage to either District without explicit notice. NM-EX 002, D'Antonio Decl. at ¶ 17; NM-EX 004, Schmidt-Petersen Decl. at ¶ 15. [Notice UMF No. 32].

B. Absence of Formal Priority Calls or Requests for Curtailment to New Mexico

271. From 1938 through the inception of this litigation, New Mexico did not receive any notice, with the potential exception of one complaint concerning surface water diversions (discussed below), whether from Reclamation, Texas, EBID, or EPCWID, that the conduct of water users in New Mexico prevented the United States from making delivery of Project water called for by Texas (EPCWID). NM-EX 002, D'Antonio Decl. at ¶ 18; NM-EX 004, Schmidt-Petersen Decl. at ¶ 16; *see* NM-EX 218, Lopez Dep. (July 7, 2020) at 140:13-141:13; NM-EX 204, D'Antonio Dep. (June 25, 2020) at 169:1-7. [Notice UMF No. 33].

272. Filiberto Cortez, El Paso Field Division Manager for Reclamation, testified that Reclamation has only made one communication to New Mexico that notified New Mexico of concerns regarding water use in New Mexico potentially impacting Project deliveries. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 111:13-112:10. [Notice UMF No. 34].

273. Specifically, in April 2012, Reclamation informed the New Mexico Office of the State Engineer that the Districts and Reclamation had identified a number of river pumps that were "impacting the deliveries" from the Rio Grande Project to EPCWID and Mexico. *See* NM-EX 521, Email from Filiberto Cortez, Manager El Paso Field Div., U.S. Bureau of Reclamation, to Rolf Schmidt-Peterson, Rio Grande Bureau Basin Manager, N.M. Interstate Stream Comm'n (Apr. 11, 2012). [Notice UMF No. 35].

274. The New Mexico State Engineer performed an investigation of the water pumps at issue and responded on September 21, 2012. The investigation concluded that all but two of the sites were operating in compliance with adjudicated water rights that are senior to the Project's or approved groundwater withdrawal permits. With regard to the remaining two sites, the investigation concluded that the pumps in question were no longer operable, and it was not possible to determine if any diversion occurred at either site. *See* NM-EX 523, Letter from Scott A. Verhines, State Engineer, State of N.M., to Ed Drusina, Comm'r, Int'l Boundary and Water Comm'n, and Mike Hamman, Albuquerque Area Manager, U.S. Bureau of Reclamation (Sept. 21, 2012). [Notice UMF No. 36].

275. The New Mexico State Engineer further invited Reclamation to "continue to notify" the State of any "potential unlawful diversions" so that the State Engineer could "initiate appropriate water administration actions, if necessary, to prevent the unlawful diversion of water." *See* NM-EX 523, Letter from Scott A. Verhines, State Engineer, State of N.M., to Ed Drusina, Comm'r, Int'l Boundary and Water Comm'n, and Mike Hamman, Albuquerque Area Manager, U.S. Bureau of Reclamation (Sept. 21, 2012). [Notice UMF No. 37].

276. Following this invitation, Reclamation made no further reports to the New Mexico State Engineer concerning improper surface water diversions. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 119:7-120:9. [Notice UMF No. 38].

277. Other than this surface pump investigation, Reclamation has not requested that New Mexico investigate or curtail any illegal water use, whether surface or groundwater. *See* NM-EX 202, Cortez Dep. (July 30, 2020), at 113:11-18. [Notice UMF No. 39].

278. Further, Reclamation has not informed New Mexico that it was unable in any year to deliver Project water that Texas (EPCWID) ordered due to the actions of New Mexico water users. *See* NM-EX 202, Cortez Dep. (July 30, 2020) at 114:23-115:7. NM-EX 002, D'Antonio Decl. at ¶ 19. [Notice UMF No. 40].

279. Likewise, Texas has not, through the Rio Grande Compact Commission, provided any notification that Texas's Project deliveries were shorted in any year. *See* NM-EX 211, Gordon Dep. (July 14, 2020) at 192:10-193:2. NM-EX 002, D'Antonio Decl. at ¶ 18; NM-EX 004, Schmidt-Petersen Decl. at ¶ 17. [Notice UMF No. 40].

XV. TEXAS WATER ADMINISTRATION

280. The TX Rio Grande Compact Commissioner is a governor appointee. NM-EX 247, Gordon Dep. (July 14, 2020) at 25:5-9. The current Commissioner has no water background and is a tax attorney. *Id.*. at 17:19-25; 18:1-10 (no education in water administration, hydrology, or interstate water compacts).

281. Groundwater use in Texas is subject to little direct regulation. *Cf. Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 823–33 (Tex. 2012) (discussing the law of capture) The Texas Water Development Board ("TWDB") is the state agency statutorily charged with groundwater oversight, but it has no management, compliance, or enforcement authority. NM-EX 249, French Dep. (Aug. 31, 2020) at 16:5-25; 17:1-16 , 43:1-44:25. Likewise, the Texas Commission on Environmental Quality ("TCEQ"), which administers surface water rights, maintains a Groundwater Division, but it lacks any compliance or enforcement authority. NM-EX 250 Mills Dep. (Aug. 27, 2020) at 46:21-23, 52:4-5.

282. TCEQ, with inputs by the TWDB, has the authority to establish Priority Groundwater Management Areas ("PGMA") based on a determination that there are critical groundwater problems, including water shortage issues. NM-EX 250, Mills Dep. (Aug. 27, 2020) at 21:6-18, 54-21-25; 55:1-17.

283. Groundwater Conservation Districts ("GCD") are political entities charged with management of groundwater resources, including permitting of groundwater wells, creating

management plans, implementing policies and procedures to conserve groundwater resources and protecting property rights related to groundwater. NM-EX 249, French Dep. (Aug. 31, 2020) 49:12-14; NM-EX 250, Mills Dep. (Aug. 27, 2020) 37:1-17; 22-25. PGMA stakeholders have the authority to create GCDs. Additionally, the Texas legislature may create a GCD on the recommendation of the TCEQ. NM-EX 250, Mills Dep. (Aug. 27, 2020) 25:9-12

284. All groundwater management, including well permitting, requires a local GCD. NM-EX 249, French Dep. (Aug. 31, 2020) 49:12-14; NM-EX 250, Mills Dep. (Aug. 27, 2020) 37:1-17; 22-25. TWDB has no management, compliance, or enforcement authority over a GCD once created or its groundwater management plan. NM-EX 249, French Dep. (Aug. 31, 2020) 36:3-4; 43:1-6; 43:7-12; 43:13-18; 43:19-25; 44:1-8; 44:15-25.

285. In 1998 TCEQ designated El Paso County as PGMA 5. NM-EX 250, Mills Dep. (Aug. 27, 2020) 27:11-24. PGMA 5 does not contain any GCDs. NM-EX 249, French Dep. (Aug. 31, 2020) 34:12-17; 35:2; 49:1-6. Accordingly, there is not a groundwater management plan in place for PGMA 5. NM-EX 249, French Dep. (Aug. 31, 2020) 46:1-6.

286. Texas's water administration, or lack thereof, within the Texas portion of the Project has not been consistent with a 1938 Condition. Changes that may affect Project conditions and impact Project depletions in Texas include the following:

a. Texas water users have made extensive use of groundwater for both Project and non-Project uses (with United States knowledge);

b. Texas and EPCWID have availed themselves of the benefits of the United States' Rectification and Canalization projects;

c. Texas farmers have improved irrigation efficiencies and changed their crop mix to higher water-use crops;

d. EPCWID has transferred the purpose of use of a significant portion of its Project Supply from irrigation to municipal supply through Miscellaneous Purposes contracts with Reclamation but without properly accounting for return flows;

e. EPCWID, working with Reclamation but without review by other Compact parties, has negotiated the American Canal Extension credit for its benefit and to the detriment of EBID;

f. Similarly, EPCWID, working with Reclamation but without review by other Compact parties, has deemed treated wastewater effluent as "non-Project" water—retaining its use but without being charged under its Project allocation;

g. EPCWID has opted to forego use of available drain flows, instead calling for additional water out of Project Storage;

h. EPCWID has sold Project water to Hudspeth County Conservation and Reclamation District No. 1 ; and

i. EPCWID, working with EBID, Reclamation and Texas but without the other Compact parties, negotiated the 2008 Operating Agreement which effectively changed Project operation and allocation contrary to the Compact to New Mexico's detriment.

See NM-EX 008, Lopez 2d Decl. at ¶ 35; *see also* NM-EX 100, Barroll Rep. at 20, 22, 31-52, Appxs. C-D; NM-EX 107, Lopez Rep. at 26, 43-66.

287. In contrast to New Mexico's comprehensive administrative scheme with regard to groundwater, Texas water authorities have not made efforts to control groundwater use in Texas, despite the detrimental effects of Texas' extensive groundwater use on historical Project Supply. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 56, NM-EX; *see also* NM-EX 606, Comparison of Select New Mexico and Texas Water Administration Facts.

XVI. NEW MEXICO WATER ADMINISTRATION BELOW ELEPHANT BUTTE RESERVOIR

A. General Features of New Mexico Water Administration

288. Under the New Mexico Constitution and law, water in New Mexico belongs to the public. Private rights to the use of New Mexico's unappropriated waters may be established by appropriation of water for beneficial use. Beneficial use is the basis, measure, and limit of a right to use water, and priority of appropriation gives the better right. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 1; *see also* N.M. Const. art. XVI, §§ 2, 3; NMSA 1978 §§ 72-12-1 and -2 (1931). The provisions of beneficial use and priority of appropriation were first formally adopted into New Mexico law in the 1907 Water Code, NMSA 1978, Title 72 (1907 Water Code). Based on a Model Water Code, the 1907 Water Code was enacted in anticipation of the Project in the LRG; it also places centralized authority in a State Engineer, a cabinet-level position and gives him broad and exclusive powers. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 2-3; *see also* NM-EX 434, Ira Clark, *Water in New Mexico: A History of its Management and Use* 118-119 (1987).

289. Since 1907, a permit from the State Engineer is required to develop a water right for surface water use. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 5(a); *see also* NMSA 1978 §§72-5-1 through -7. Since 1931, a similar permit requirement applies to all groundwater use within a "declared" groundwater basin. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 5(b); NMSA 1978 §72-12-1, *et seq* ; *see also State ex rel. Bliss v. Dority*, 1950-NMSC-066, 55 N.M. 12, 225 P.2d 1007; Office of the State Engineer, Article 7: Declared Underground Water Basins (2006).

290. The State Engineer serves as the Secretary to New Mexico's Interstate Stream Commission (ISC), which oversees New Mexico's compact obligations and expends significant resources to ensure compliance with the Rio Grande Compact and seven (7) other interstate compacts. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 5(g); *see also* NM-EX 009, Schmidt-Petersen 2d Decl., ¶¶ 4-5, 13-17.

291. The State Engineer also serves as New Mexico's Rio Grande Compact Commissioner and has broad authority to address Compact compliance and administrative issues together. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 5(i), 8, 9. See also NM-EX 009, Schmidt-Petersen 2nd Decl., *passim*.

292. Since 1907, the State Engineer has actively exercised broad powers to administer waters throughout the State of New Mexico in an exclusive and comprehensive administrative system. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 4-5, 11; *see also Tri-State Generation and Transmission v. D'Antonio*, 2012-NMSC-039, ¶ 24, 289 P.3d 1232; NMSA 1978 § 72-2-1 (1907). In exercise of this authority, the State of New Mexico has a robust and comprehensive system for water administration and enforcement in the LRG. New Mexico has successfully employed this system to ensure compliance with the Compact and stands ready to utilize that system to enforce the orders of the Court in this case, whatever those orders may be. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 5, 57-58; *see also* NM-EX 009, Schmidt-Petersen 2d Decl.; NM-EX 010; Serrano Decl.; NM-EX 006, Barroll 2d Decl. at ¶¶ 43, 78.

B. New Mexico State Engineer Jurisdiction, Rules, and Regulations

293. The State Engineer established seven local district offices across New Mexico. District IV in Las Cruces, New Mexico, administers water in the Lower Rio Grande, including the New Mexico portion of the Project. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 6-7, 25.

294. Following the United States' appropriation of water rights in 1906 and 1908, the State Engineer has considered the Lower Rio Grande ("LRG") to be fully appropriated and has not permitted any new appropriation of surface waters. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 16-17; NM-EX 006, Barroll 2d Decl. at ¶ 75.

295. Further, after declaring the LRG groundwater basin in 1980, the State Engineer has not allowed any new rights or changes to existing rights to use groundwater without first finding, through the permitting process, that surface water was protected from any new depletions. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 16-17, 21-23; NM-EX 235, Rule 30(b)(6) Dep. of the State of New Mexico by and through Thacker (Apr. 18, 2019) at 22:9-23:4. Through the permitting process, the Office of the State Engineer ("OSE") rigorously evaluates an application to either appropriate water or to change an existing water right to determine whether it will impair existing rights, in addition to considering whether the proposed change is contrary to conservation within New Mexico or detrimental to the public welfare. If the application is found to impair other water rights, the permit may be denied, or the amount of water requested reduced, or the permit may be issued with conditions to address the impairment or depletion, which may include a requirement that any resulting depletions of surface water be offset. The permitting process ensures that no new depletions to the fully appropriated Rio Grande steam system are allowed. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 21; *see also* NMSA 1978 §72-12-3 (1931, as amended through 2019).

296. In 2003, the New Mexico Legislature enacted the Active Water Resource Management statute, NMSA 1978 § 72-2-9.1 (2003). Thereafter, the State Engineer created and promulgated Active Water Resources Management regulations (AWRM Framework Rules). The AWRM Framework Rules provide rules of statewide applicability and allow for the adoption of specific rules that could be promulgated separately for individual Water Master Districts. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 38-41; *see also* 19.25.13.7(C) 1-4 NMAC.

297. The AWRM Framework Rules allows the State Engineer to support water right owners' creation of agreements that share shortages among themselves rather than strictly adhering to the priority administration system. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 40.

298. In 2004, the State Engineer issued a metering order in the LRG, requiring that all groundwater wells in the LRG be metered by March 1, 2006. NM-EX-430, State Engineer Order No. 168 (Dec. 3, 2004). *See* NMSA §72-12-27 (1967). Following litigation with EBID among others, all irrigation, commercial, multi-family domestic, and municipal wells in the LRG were metered by 2008. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 44.

299. Should any water rights owner in the LRG request of the State Engineer a priority call due to water shortage, the State Engineer would promptly take the following actions: a) Investigate the validity and cause of the claimed shortage, and b) Determine appropriate short-term and long-term actions. Any response to a priority call is necessarily dependent upon the cause of the shortage and must take into consideration such things as the public health issues of essential drinking water and sanitation uses. Potential responses include, but are not limited to, release of storage water, curtailment of junior surface water diversions, curtailment of junior groundwater rights, and the possibility of a range of agreed-upon alternatives to strict priority administration. The required analysis, decision on response, and implementation of response could take place in a matter of days for a short-term response to a matter of weeks or months to address long-term or systemic response. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 53; *see also* NM-EX 226, Rule 30(b)(6) Dep. of the State of New Mexico by and through Barroll (Oct. 21, 2020) at 37:5-22 (errata).

300. While Reclamation and EBID control delivery of Project water, the State Engineer retains authority over and ensures compliance with all water rights and river diversions of water in the LRG, including the use of New Mexico water outside the state. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 6-7.

C. LRG Stream Adjudication

301. A lawsuit for the adjudication of water rights was commenced in the LRG by EBID, and the State intervened in 1996. *State of New Mexico ex rel. State Engineer v. Elephant Butte Irrigation District et al.,* No. D-307-CV-96-888 (the "LRG Adjudication"). As part of the adjudication process, the State Engineer performed a hydrographic survey, including a review of all historic State Engineer and county records relating to claimed water rights, in-person surveys, and aerial photography. Based on all known data, the State Engineer evaluates the information for each claimed water right and makes separate offers of judgment to each claimant within a unique "subfile" to the adjudication. The State Engineer and the claimant may either agree on the Offer of Judgment, mediate a different result, or try the case to the court. The result of those processes then becomes a "Subfile Order" entered by the court. *See* NM-EX 007, D'Antonio 2d Decl. at ¶¶ 32-34. The State Engineer's most recent status report in the LRG Adjudication reflects that there are presently approximately 14,050 subfiles in the adjudication, which encompass 18,546 water right claimants. Approximately 66% of these subfiles have been sent Offers of Judgment and 50% have been adjudicated. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 35.

302. Apart from its orders on these individual subfiles, the LRG Adjudication Court has issued a number of orders governing the LRG Adjudication globally. These include the following:

a. *Stream System 101 (SS 101):* In August 2011, the LRG Adjudication court entered a Final Judgment in Stream System 101 that sets the limits on groundwater and surface water use affecting all LRG claimants. NM-EX 541, Final Judgment in SS-

97-101 (SS101 LRG Adjudication Order) (Aug. 22, 2011) (SS101 LRG Adjudication Order). *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 37(a). In relevant part, the SS 101 Order does the following:

i. The Order sets the annual FDR for the LRG at 4.5 AF/acre unless a claimant is able to prove beneficial use of up to 5.5 AF/acre. Surface water and groundwater use combined cannot exceed this total, ***and surface water available must be exhausted before groundwater may be used.*** *See* NM-EX 541, SS101 LRG Adjudication Order, §§ II(D), V(B).

ii. Consistent with historic Project operations, the maximum FDR for surface water was set at 3.024 AF/acre per year. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 37(a).

b. *Stream System 103 (SS 103):* The SS 103 Order addresses domestic wells and is currently on hold. Domestic and stock well use represents approximately 2,000 to 3,000 AF/yr. This less than one percent of total surface water and groundwater use in the Mesilla and Rincon basins. Domestic well and stock water use has a negligible effect on the issues in this case. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 37(b).

c. *Stream System 104 (SS 104)*: The SS 104 Order addressed "the interests of the United States deriving from the establishment of the Rio Grande Project" for determination in the LRG Adjudication. NM-EX 534, Order Designating Stream System Issue/Expedited *Inter Se* Proceeding No. 104 (Jan. 8, 2010). The LRG Adjudication court found that the Project has a surface water priority date of March 1, 1903. No final order has been issued on these Findings. NM-EX 536, Findings of Facts and Conclusions of Law, *State of New Mexico v. EBID* (Apr. 17, 2017) (CV-96-888). With a (non-final) priority date of March 1, 1903, the United States' Project water rights are senior to most of the groundwater rights in the LRG. *See* NM-EX 007, D'Antonio 2d Decl. at ¶ 37(c).

D. Compliance and Monitoring Efforts by the Lower Rio Grande Water Master

303. New Mexico has established a Water Master District for the Lower Rio Grande ("LRG"). The district encompasses a geographic area of 4,224 square miles and contains EBID. The LRG Water Master ensures compliance on the local level with the New Mexico Water Code, permits and licenses issued by the State Engineer, orders issued by the LRG adjudication court, and State Engineer orders, regulations, and policy guidance and directives. These duties include, without limitation, controlling illegal diversions, measuring water use within the LRG, controlling the priority of diversions, administering water usage in accord with agreement by water right owners within the LRG, and coordinating (where indicated) with Reclamation and EBID. These actions are intended to ensure the appropriate regulation and control of groundwater withdrawals. *See* NM-EX 010, Serrano Decl. at ¶¶ 2-7; NM-EX 007, D'Antonio 2d Decl. at ¶ 42; NM-EX 540, Ryan J. Serrano, Office of the State Engineer, *Lower Rio Grande Water Master Annual Report*

2018 Accounting Year, at 1-5 (2019); *see generally* NMSA 1978, §§ 72-3-1 (1919), 72-3-2 (2007); NM-EX 429, State Engineer, Water Master Order No. 169 (Dec. 3, 2004).

304. The LRG Water Master and Assistant Water Masters spend the majority of their time in the field, visiting water right owners' fields, monitoring their meters, advising on issues of compliance with permits and other state requirements, performing visual checks of such compliance, and attending community meetings. *See* NM-EX 010, Serrano Decl. at ¶¶ 6-7.

305. Water users in the LRG must comply with applicable state statutory requirements, State Engineer permits, licenses and orders, OSE policy and guidelines, and applicable court orders. The LRG Water Master has specific statutory authority under NMSA 1978, § 72-2-18 (2007) to enforce compliance with these requirements. *See* NM-EX 010, Serrano Decl., ¶¶ 11-13, 17; NM-EX 007, D'Antonio 2d Decl. at ¶ 25; NM-EX 232, Serrano Dep. (Feb. 26, 2019) at 94:7-96:24.

306. In enforcing these requirements, the LRG Water Master has a number of metrics and mechanisms to monitor water diversions. Among these, all wells (except single-family domestic and livestock wells), and non-EBID surface water diversions are subject to metering requirements, and water users must report meter readings regularly. *See* NM-EX 010, Serrano Decl., ¶¶ 13-14; *see also* NM-EX 236, Serrano Dep. (Apr. 17, 2019) at 54:22-55:13, 94:7-96:24, 183:19-24; NM-EX 235, Rule 30(b)(6) Dep. of the State of New Mexico by and through Thacker (Sept. 18, 2020) at 33:12-35:17; NM-EX 227, Barroll Dep. (Feb. 5, 2020) at 57:4-58:22.

307. The Water Master is not responsible for assuring or monitoring delivery of Project supply to EBID members; rather, that is the responsibility of EBID. To assure compliance with the SS101 LRG Adjudication Order, during each irrigation season, the Water Master for the Lower Rio Grande Water District receives Project allotment information for each EBID member from the district. Using this data, the Water Master calculates how much of each EBID member's 4.5 AF/acre (or 5.5 AF/acre) combined water right may be satisfied by the diversion of groundwater. This calculation assumes that EBID members use their full allotments as to surface water diversions and that they use their surface water allotments before using groundwater. *See* NM-EX 010, Serrano Decl., ¶¶ 13-14.

308. The Water Master regularly monitors groundwater wells to ensure compliance. *See* NM-EX 010, Serrano Decl., ¶¶ 10, 11, 14-16; NM-EX 010, Rule 30(b)(6) Dep. of the State of New Mexico by and through Thacker (Sept. 18, 2020) at 35:18-38:7; NMSA 1978, § 72-2-18 (2007).

309. When the Water mater determines that a well is out of compliance, the Water Master actively works with the water user to effect compliance. If local attempts are unavailing, the Water Master refers the issue to the OSE Administrative Litigation Unit for legal action. *See* NM-EX 010, Serrano Decl., ¶¶ 10, 11, 14; NM-EX 010, Rule 30(b)(6) Dep. of the State of New Mexico by and through Thacker (Sept. 18, 2020) at 35:18-38:7; NMSA 1978, § 72-2-18 (2007).

310. The Water Master for the LRG investigates every over-diversion, including unauthorized surface diversions, in the district. If an over-diversion or potential for over-diversion is discovered during the irrigation season, the Water Master seeks an accommodation for voluntary compliance. If no agreement can be reached, the Water Master refers the matter to the Administrative Litigation Unit for enforcement proceedings. If an over-diversion is discovered after the end of the irrigation

season during the process of reconciling the final meter readings of the year, the Water Master effectuates compliance through a written repayment plan. *See* NM-EX 010, Serrano Decl. at ¶¶ 22-30; *see also* NM-EX 235, Rule 30(b)(6) Dep. of the State of New Mexico by and through Thacker (Sept. 18, 2020) at 36:5-38:7; NM-EX 226, Rule 30(b)(6) Dep. of the State of New Mexico by and through Barroll (Oct. 21, 2020) at 22:14-25, 23:1-2; NM-EX 234, D'Antonio Dep. (June 26, 2020) at 317:4-318:7; NM-EX 540, Ryan J. Serrano, Office of the State Engineer, *Lower Rio Grande Water Master Annual Report 2018 Accounting Year*, at 10 (2019).

311. Pursuant to the SS101 LRG Adjudication Order, certain water users within the LRG are subject to an Ownership Management Program. The program permits farmers who own or manage lands under more than one water right to manage the rights associated with the lands conjointly, but the combination of water rights used may not exceed the total amount allowed under the permitted water rights. *See* NM-EX 010, Serrano Decl. at ¶¶ 31-34; *see also* NM-EX 235, Rule 30(b)(6) Dep. of the State of New Mexico by and through Thacker (Sept. 18, 2020) at 42:9-43:9, 44:8-14; NM-EX 540, Ryan J. Serrano, Office of the State Engineer, *Lower Rio Grande Water Master Annual Report 2018 Accounting Year*, at 6 (2019).

E. Additional Compliance Efforts by the Interstate Stream Commission

312. The New Mexico Legislature statutorily created the New Mexico Interstate Stream Commission ("the ISC") in 1935. NMSA 1978, Section 72-14-3 (1935). The ISC is a permanent body that negotiates interstate stream compacts and has broad powers to investigate, protect, conserve, and develop New Mexico's waters, including both interstate and intrastate stream systems. New Mexico is a party to eight interstate stream compacts, which are comprised of both state and federal law. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶¶ 4-5.

313. In addition, the ISC is also responsible for ensuring compliance with provisions of United States Supreme Court Decrees governing water allocations and negotiating controversies that arise related to interstate compacts and court decrees. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 6. The ISC is also authorized to investigate and develop New Mexico's water supplies and institute legal proceedings on behalf of New Mexico for planning, conservation, protection, and development of public waters; it is responsible for statewide water planning. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 7. It also administers the strategic water reserve pursuant to NMSA 1978, Section 72-14-3.3 (2005, as amended through 2007) to assist complying with interstate stream compacts and court decrees, or endangered species water management in New Mexico. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 8.

314. The ISC's hydrologists, engineers, water management professionals, and attorneys analyze data related to New Mexico's interstate streams to assure compliance with all applicable obligations. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 9.

315. Significantly, ISC staff reviews water right applications filed with the OSE and will file protests, when necessary, to protect New Mexico's interests and obligations under the New Mexico interstate compacts. ISC staff also provides support in water rights adjudications to protect New Mexico's allocations and obligations under its interstate compacts. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶¶ 10-11.

316. The ISC is a lead agency and a member of the executive committee of the Upper Rio Grande Water Operations Model (URGWOM). The purpose of the executive committee is to develop a unified water operations model for the Rio Grande Basin from its headwaters in Colorado to Hudspeth County, Texas. The URGWOM is used for reservoir and river planning, operations, and accounting upstream of Elephant Butte Reservoir. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 12.

317. The ISC has undertaken significant river and drain maintenance works to aid in Rio Grande Compact compliance. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 13. These efforts include removing sediment, removing phreatophytes, maintaining river system infrastructure, operation of the Delta Channel Project, operating the Low Flow Conveyance Channel project (in collaboration with Reclamation and the MRGCD), operating the New Mexico Strategic Water Reserve to ensure compliance with the Compact and other legal requirements (e.g., endangered species protections), and improving river gaging, data management, and reporting capabilities in New Mexico. *See id* at ¶¶ 14-15, 19-21.

318. The ISC's river and drain maintenance efforts have contributed to the State of New Mexico's ability to accrue a large volume of Accrued Credit (Compact Article VI) in Elephant Butte Reservoir over the last few decades. This Accrued Credit has allowed New Mexico to relinquish approximately 380,000 AF of its Accrued Credit for use by the Project. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 16. In response to issues raised by EBID and others related to Project operations and groundwater use, the ISC has provided infrastructural support to New Mexico water users. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 17.

319. In the mid-to-late 2000's, the ISC collaborated with the States of Colorado and Texas, and numerous stakeholders, in the Rio Grande Compact Commission's Rio Grande Salinity Management Coalition ("Coalition") to address salinity concerns largely raised by Texas. The ISC and the stakeholders evaluated changes in water quality (mostly salinity) from San Acacia, New Mexico to Fort Quitman, Texas. The Texas complaints were addressed and resolved. No further complaints from Texas about water quality were expressed until the Original No. 141 was filed. *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 18.

320. The ISC Rio Grande Basin staff periodically communicates with Reclamation's Rio Grande Project water operations staff throughout the year to understand Reclamation's planned and actual Project operations. The purpose is to understand how those operations may both directly impact New Mexico water users at and downstream of Elephant Butte Reservoir and indirectly impact upstream reservoir operations (if Compact Articles VI, VII, or VIII are triggered). *See* NM-EX 009, Schmidt-Petersen 2d Decl. at ¶ 22.

Respectfully submitted,
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No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

_____♦_____

STATE OF TEXAS,

Plaintiff,

v.

STATE OF NEW MEXICO and
STATE OF COLORADO,

Defendants.

_____♦_____

OFFICE OF THE SPECIAL MASTER

_____♦_____

STATE OF NEW MEXICO'S CERTIFICATE OF SERVICE

_____♦_____

This is to certify that on December 22nd, 2020, I caused a true and correct copy of the **State of New Mexico's Consolidated Statement of Material Facts** to be served by e-mail and/or U.S. Mail, as indicated, upon the Special Master, counsel of record, and all interested parties on the Service List, attached hereto.

Respectfully submitted this 22nd day of December, 2020.

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