

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

**DECLARATION OF J. PHILLIP KING PE, PH.D.
IN SUPPORT OF THE UNITED STATES' OPPOSITION TO PROPOSED DECREE**

I, J. Phillip King, declare as follows:

1. My name is J. Phillip King. I am over the age of 18 and have personal knowledge of the facts stated herein.

2. I have been registered as a Professional Engineer in New Mexico (PE 12869) since 1995.

3. I earned a Bachelor of Science degree in Civil Engineering from the University of California, Berkeley, a Masters of Science and Ph.D. in Agricultural Engineering at Colorado State University, and a Masters of Business Administration from New Mexico State University.

4. Between my Bachelor's degree and graduate school, I served as a Peace Corps Volunteer from 1983 to 1985 in Malawi, southeastern Africa, where I worked in a rural agricultural development division as Irrigation Engineer and Land Husbandry Officer during a severe drought and famine. I was selected as the Peace Corps Volunteer of the Year in Malawi in 1984.

5. From 1990 to 2021, I was a faculty member (Assistant, Associate, Full Professor and Associate Department Head) in the Department of Civil Engineering at New Mexico State University specializing in agricultural and water resources engineering.

6. I took a sabbatical in 2009-2010 to serve as a Science and Technology Policy Fellow with the American Association for the Advancement of Science. During this time, I was posted at the National Science Foundation in Arlington, VA, assigned to the Civil, Mechanical, and Manufacturing Innovation division of the Engineering Directorate. I was tasked with evaluation of federal investments in basic research, as well as participating in the management of research programs in construction technology, water resources, and climate change effects on water, energy, and the environment.

7. In 2021 and 2022, I served on an expert panel on climate change formed by the New Mexico Interstate Stream Commission (“NMISC”) to compile a report on climate change impacts on the state. The report, prepared in support of the State’s 50-year water planning effort, was published in 2022 as New Mexico Bureau of Geology and Mineral Resources Bulletin 164.

8. After the Climate Panel, I served on the NMISC’s Water Policy and Infrastructure Task Force. This Task Force was formed to develop guidance for policy and investment in the state to help cope with climate change and support the 50-year water plan. The final report will be released imminently.

9. I am currently serving on the Good Neighbor Environmental Board, a federal advisory panel to the U.S. Environmental Protection Agency on environmental, infrastructure, and policy issues along the U.S.-Mexico border. The current Board, which was convened in 2021, recently issued its first Advice Letter to the President.

10. I served as a board member and chair of the Leasburg Mutual Domestic Water Consumers Association in the Mesilla Valley from 2003 to 2010. I served as a board member and chaired the Doña Ana Soil and Water Conservation Commission from 2006 to 2009. I also served as the Governor’s Designee on the New Mexico Soil and Water Conservation Commission from 2007 to 2010.

11. I have worked as a consultant for Elephant Butte Irrigation District (“EBID”) since the early 1990s, and in 1995 formed King Engineering, a consulting company with EBID as its primary client. The company is now King Engineering & Associates Inc. I have two contracts with EBID: one for engineering and hydrology services and one for expert services.

12. In my role as a consultant to EBID, I have been involved in many aspects of the District's functions, including allocation, release, diversion, conveyance, delivery, measurement, and accounting of Project water.

13. In the current litigation, I served as EBID's engineering and technical consultant, expert witness, and representative on EBID's settlement team. As part of my duties on EBID's settlement team, I participated as EBID's representative on the Technical Committee that consisted of representatives from the parties and the Project irrigation districts.

14. One primary purpose of the Rio Grande Compact (Compact) was to protect the Project from non-Project depletions. By the time the Compact was developed, the Project had been authorized by Congress 33 years before and had been operational for 22 years.

15. In 2008, I was the technical lead for EBID in the negotiation and development of the Operating Agreement and Operating Manual. The Operating Agreement settled *EPCWID1 v. EBID*, No. EP07CA0027 and other outstanding litigation.

16. The Operating Agreement and associated Operations Manual provide the technical basis and programmatic framework through which Reclamation and the Districts determine Project diversion allocations, coordinate Project releases and diversions, and determine Project accounting. Notably, the Operating Agreement provides for managing water releases and diversions on a continuous basis in response to changing irrigation orders and changing conditions throughout the Project including river gains and losses, canal waste, drain flows, precipitation events, and other factors.

17. The Operating Agreement offsets impacts on allocations and deliveries of Project supply to EPCWID caused by reductions in Project delivery performance between current-year conditions and historical conditions as defined by the D2 equation. The D2-based total estimate

of water available for Project diversion for the projected annual Caballo release is first determined, then Mexico's allocation is subtracted from the D2 estimate of diversion to determine the Districts' total annual diversion. EPCWID is allocated 43 percent of the D2 estimate of the Districts' diversion rather than 43 percent of the actual available Districts' diversion. In terms of annual allocation, EPCWID is living in the hydrologic conditions of 1951-1978. After EPCWID gets its allocation, EBID essentially gets whatever actual available diversion is left.

18. Actual available diversions have been below the D2 level since the return of water shortage in 2003 due in very large part to increased depletions of Project water from pumping of hydrologically connected groundwater in New Mexico. EBID therefore has been offsetting the impact of groundwater depletions in New Mexico above the D2 amount since the Operating Agreement was entered in 2008. Without very different groundwater regulations and management by New Mexico, any increase in groundwater depletions in New Mexico will further impair EBID's Project supply allocation – including increases in depletion by non-EBID water users.

19. Project allocations are calculated by the Districts and Reclamation through a continuous process in which initial and interim allocations are updated and refined as new information becomes available (such as storage, releases, diversions, and allocation charges), and finalized at the end of the year with final Project data. The Operating Agreement includes provisions for credits, diversion in excess of orders, accounting modification if EBID's allotted diversions end and deliveries and diversions continue for EPCWID, carryover and carryover transfers all based on daily accounting with sub-hourly measurements at thousands of points. These provisions were painstakingly developed and implemented by the Districts and

Reclamation based on nearly a century of experience in the detailed operation of the Project. The Districts and Reclamation are now over a century in their Project functions.

20. During my testimony before the Court on October 7, 2021, I discussed how Project water operations are complex and involve a host of decisions and interactions with farmers, EBID staff, Reclamation, and EPCWID. I presented a simplified flowchart (Testimony of J. Phillip King, demonstrative exhibit no. 21) that showed how water allocated to the District is allotted and delivered to EBID farmers and how EBID considers a multitude of factors in response to changing irrigation orders and changing conditions throughout the Project.

21. In contrast, the proposed decree Effective El Paso Index (“EEPI”) delivery is a single annual number measured at a single point (the Rio Grande at El Paso gage) based on a single input (annual Caballo Releases). The differences between the programmatic and iterative process of determining allocation and charges under the Operating Agreement and the simple EEPI obligation and delivery numbers will lead to arbitrarily large negative or positive annual departures from the Index that are not self-correcting.

22. The remedy in the proposed decree for negative accrued Index departures in excess of thresholds is the transfer of water from EBID’s Project allocation to EPCWID. The decree requires no other measures for New Mexico’s management of groundwater to stay in or return to compliance with the negative accrued departure limits.

23. The provision that EBID’s allocated Project water can be reallocated to EPCWID in the event of negative accrued Index departures means EBID, and only EBID, will mitigate for all groundwater pumping effects on Project water supply in the New Mexico Rincon and Mesilla basins should New Mexico fail to manage and administer groundwater depletions effectively. New Domestic, Commercial, Municipal, and Industrial (“DCMI”) groundwater depletions in this

growing and increasingly metropolitan area, will further reduce New Mexico's index delivery, and increase the likelihood and magnitude of transfers from EBID to EPCWID.

24. The current form of the EEPI in the proposed decree establishes the D2 condition as the baseline for apportionment between New Mexico and Texas below Elephant Butte Dam, which is also the baseline period for the Operating Agreement.

25. According to New Mexico's experts (Expert Report of Sullivan and Welsh 2019), EBID is not depleting water in excess of D2 levels. Non-Project DCMI users depletions, however, have increased by about 17,000 AF, or approximately 250% above their average D2 depletion level (DCMI pumping from Sullivan and Welsh 2019, and assuming a 95 percent depletion factor and 33 percent return flow factor as per Texas Mesilla Valley depletion estimate in the Decree), and they are not required to offset impacts of their non-Project depletions, even those in excess of the D2 level, on EBID or the Project.

26. Under the Index, the delivery to the El Paso gage during 2008 to 2021 shows an annual negative departure of about 15,100 AF (Brandes 2022), roughly the amount of the increase in annual DCMI depletions (17,000 AF) from the D2 period to the present.

27. New Mexico is not required in the decree to take any administrative, regulatory, or management actions against non-Project users to ensure that EBID receives the New Mexico apportionment of Project Supply. Since 2008, Annual Allocated Water, which the decree defines as "the quantity of Project Supply that is allocated each year for delivery to the irrigation districts in New Mexico and Texas, and to the United States for delivery to Mexico" has been determined by the Operating Agreement. In nearly every year, EBID has accepted a reduced Project Supply allocation (relative to the traditional 57/43 % split) to offset the effects of groundwater depletions in New Mexico on the allocation to EPCWID.

28. The Index could, at the beginning of an irrigation season, reallocate water that the Districts had been planning for since the end of the previous season. In particularly bad circumstances, the transfer process could even result in a negative allocation to EBID. The raiding of EBID's surface water allocation by New Mexico, combined with reduced surface water due to climate change and drought, could cause EBID to fail.

29. Failure of EBID would seriously reduce tax revenues generated by EBID's producers, and stress agricultural support industries that could compromise the viability of production agriculture in EPCWID, thereby threatening the survival of the whole Project.

30. Having extensive experience in Project area water issues, including academic research, consulting, regional water planning and analysis, and service on Mutual Domestic and Soil and Water Conservation District boards, I know that the failure of EBID would be devastating to the area's economy, communities, and culture.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct..

Executed this 20th day of January at



J. Phillip King, PE, Ph.D.

