

EXHIBIT 6

No. 141, Original

IN THE
SUPREME COURT OF THE UNITED STATES

—◆—
STATE OF TEXAS,

Plaintiff

STATE OF NEW MEXICO and
STATE OF COLORADO,

Defendants

—◆—
OFFICE OF THE SPECIAL MASTER
—◆—

DECLARATION OF LEE WILSON, PH.D.
—◆—

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TX v. NM # 141

New Mexico Exhibit

NM_EX-013

DECLARATION OF LEE WILSON, PH.D.

I, Lee Wilson, pursuant to 28 U.S.C. § 1746, state as follows upon my personal knowledge and experience.

1. On June 15, 2020, I was disclosed by the State of New Mexico as a non-retained rebuttal expert witness in the matter of *State of Texas v. State of New Mexico and State of Colorado* (USSC No. 141, Original). I have no changes to the content of that disclosure, which included my opinions in rebuttal to U.S. Expert J. Phillip King, and my curriculum vitae. In addition, on July 23, 2020, I was deposed on my expert opinions.

2. A short summary of my professional experience is set forth in “Resume of Lee Wilson” which is provided in NM-EX 604. I am a graduate of Yale (B.A.) and Columbia (Ph.D.) Universities where I trained in geology, hydrology and environmental science. I am a Certified Professional Hydrogeologist (American Institute of Hydrology, #220). I have nearly 50 years of experience on the Rio Grande and have been a consultant to the City of Las Cruces (“City”) for 40 years. I am familiar with surface and groundwater hydrology, water rights, and water use in the Lower Rio Grande Basin and with the Rio Grande Project in both New Mexico and Texas.

3. A summary of my experience as an expert witness is provided in “Expert Testimony of Dr. Lee Wilson” which is provided in NM-EX 605. This document identifies more than 100 proceedings in which I have been designated as an expert witness, including prior cases of Original Jurisdiction.

I. Facts alleged by the United States

4. In its Motion for Summary Judgment submitted on November 5, 2020, the United States alleges “Facts [which] are not disputed or cannot genuinely be disputed.” Citing in part a 1954 report by C. S. Conover of the United States Geological Survey, USMF 56 states:

[t]he City of Las Cruces (the City or Las Cruces), which is located partly within the EBID boundary, had two wells in use prior to 1937, five wells in use as of 1947, and 45 wells in use as of 2017, many of them drilled after 1980.

~~Dr. Douglas R. Littlefield, a professional historian who has long conducted research regarding the City’s water supply, has documented that use of surface water to supply the city’s businesses and homes dates back to 1849, more than a century before Conover’s report. He has further documented how groundwater contributed to the City’s supply in the 1870s, and that by 1937 this supply came from many wells other than the two recognized by Conover. This establishes that Conover’s report is incomplete as to the City’s water supply in 1937. USMF 56 is therefore disputed.~~

5. USMF 57 states as follows:

While the City’s permitted (*i.e.*, post-1980) wells are subject to volume limitations and some offset requirements to account for estimated surface water depletions attributable to

the pumping, the City is authorized to pump up to 21,869 acre-feet annually under its pre-1980 groundwater right (“LRG-430”), subject only to a condition that the City forgo consumption of municipal effluent in cases of drought (defined as years when the Project’s surface water allocation is equivalent to 2.0 af/ac).

6. USMF 57 is incomplete and therefore misleading. Here I respond to USMF 57 by presenting facts about the City’s actual use of water under LRG-430 et al. I focus on the years 2016-2019 to ensure the facts are representative of current conditions. Unless otherwise noted, I rely on data from records which the State Engineer requires the City to compile and submit, and which were provided to me by City consultant John Shomaker and Associates.

- a. USMF 57 addresses only the City’s LRG-430 *et al.* water rights which comprise a portion of the City’s portfolio and which consist of 21,869 AFY adjudicated with a priority of 1905. Pumping of the LRG-430 wells that lie in the Jornada Basin had no effect on the Rio Grande in 2016-2019. ~~The effluent generated from use of that LRG-430 water is treated and discharged to the Rio Grande and can be considered an imported supply, i.e., a water supply sourced from outside the Mesilla Basin.~~
- b. The primary water source for the City other than LRG-430 is its East Mesa Well Field under Permit Nos. LRG-3283 through 3285 and LRG-3288 through 3296 for 10,200 AFY. In 2016-2019 about one-quarter of the City’s diversions of approximately 21,000 acre-feet per year came from this well field, which is located in the Jornada Bolson and is hydrologically isolated from the Rio Grande. ~~It is established that pumping in the Jornada in 2016-2019 had no significant effect on Rio Grande streamflows except that, as noted below, wastewater arising from such withdrawals contributed to the City’s effluent discharge to the Rio Grande and were additive to flows of the Rio Grande. This wastewater can be considered an imported supply to benefit the river.~~
- c. **15,260.5** acre-feet per year was the average quantity of the City’s LRG-430 diversions within the Mesilla Bolson in 2016-2019. The next three paragraphs quantify physical offsets to these diversions. The two paragraphs that then follow quantify other factors for consideration in determining the City’s impacts on the river.
- d. **9,181.5** acre-feet per year was the City’s average wastewater from all sources that was discharged directly to the Rio Grande in 2016-2019. Subtracting that value from the Mesilla diversions, the maximum net river effect of those diversions cannot much exceed 6,000 acre-feet per year. However, the actual impact of the City’s LRG pumping is much less as quantified below.
- e. **3,500** acre-feet per year of urban recharge occurs within Las Cruces each year, which replenishes the aquifer and offsets the City’s withdrawals. This quantification reflects the opinion of New Mexico expert Gilbert R. Barth, most recently set forth in his September 15, 2020 rebuttal report. On page 5-9 of that report, Dr. Barth discussed how his model simulates urban deep percolation, which is groundwater recharge from

~~outdoor use (e.g., lawn irrigation) and conveyance losses (pipeline leaks). In his Appendix I, he reports that as an input to his model he utilized estimates of urban deep percolation for Las Cruces (and seven other urban areas). At my request, Dr. Barth has provided me with these estimates—specifically a monthly quantification of Las Cruces urban recharge for 1940-2017. For at least the period 1985 through 2017 the annual recharge value has been on the order of 3,500 acre-feet per year, a value I consider appropriate through 2019.~~

- f. Based on the September 15 expert report of Dr. Gilbert Barth, my conservative estimate is that 3.5 percent (**545** acre-feet per year) of the City's groundwater is derived from storage rather than depletions of the Rio Grande.
- g. ~~At least **3,000** acre-feet per year of the City's pumping was grandfathered in when the D-2 curve was adopted in 1980 as the baseline for allocation of Project supplies to New Mexico and to Texas (D-1 dealt with Mexico). The D-2 curve relates Project releases from Elephant Butte Reservoir to the amount of water available for Project diversions as observed during the period 1951-1978, the first time when shortages of supply were common. My quantification of the grandfather benefit is based on p. 3-31 of New Mexico's expert rebuttal report by hydrologists Gilbert R. Barth and Steven P. Larson, dated September 15, 2020, and I believe that to be a minimum. Note further that at page 1 of the text of her report of June 15, 2020, Dr. Margaret Barroll states "... it is important to note that the US rebuttal experts concede that the D-2 Curve 'grandfathered-in' the groundwater pumping occurring from 1951-78".~~
- h. ~~**3,522.95** acre-feet per year is the quantity of stream depletions to which the City is entitled through its ownership of water righted land in EBID. My quantification is based on the product of the City's EBID water righted acreage (1354.98 acres) times the water right (consumptive irrigation requirement) adjudicated by the State of New Mexico to such acreage (2.6 acre-feet per acre per year). These water rights are included in the City's water rights portfolio set out in its formal "Forty Year Plan" filed with the Office of the Stat Engineer, but are not now used as offsets to support the City's water supply. The entirety of the City's supply is derived from groundwater.~~

~~In summary, the effect of the City on the Rio Grande in 2016-2019 is not the 15,260.5 acre-feet per year withdrawn by its Mesilla Bolson LRG-430 wells but rather the information now available indicates that ***the City effectively surpluses the river.*** The basis for this fact conclusion is outlined below.~~

- ~~15,260.5 AFY withdrawal from Mesilla Bolson under LRG-430~~
- ~~At least 545 AFY of withdrawal comes from storage~~
- ~~Therefore 14,700 AFY is the approximate value for stream-connected withdrawal~~
- ~~About 12,700 AFY wet water benefit from wastewater (rounded value 9,200 AFY0 and recharge (3,500 AFY)~~

- ~~At least 6,500 AFY entitlement from grandfathered rights (at least 3,000 AFY) and EBID rights (rounded 3,500 AFY)~~
- ~~4,500 AFY surplus based on 19,200 AFY benefit against 14,700 AFY maximum impact~~

~~The surplus is a large number compared to possible rounding and approximation errors in the individual numbers and should be relied upon beyond the information in USMF 57.~~

7. USMF 58 addresses groundwater pumping for non-irrigation uses (including municipal use) below Elephant Butte. The claim is that such use has increased to about 37,000 acre-feet per year, driven by an increase in pumping by “entities other than the City of Las Cruces whose groundwater use began after the Compact”. If this is meant to assert that the City of Las Cruces groundwater use only began after the Compact, it is wrong (late) by many decades and is therefore disputed.

II. Facts alleged by the State of Texas

8. Referring to the City of Las Cruces, at p. 22-23 the Texas Motion for Summary Judgment acknowledges a fact set forth in my June 15, 2020 disclosure, that the City of Las Cruces owns EBID acres. I understand this to be a recognition that the City has a right to use water released from Elephant Butte Reservoir.

~~9. The Texas claim that non-Project water uses were frozen by adoption of the 1938 Rio Grande Compact is not consistent with the U.S. rebuttal report by their expert J. Phillip King who stated as fact that adoption of the D-2 curve established 1951-1978 as the baseline for allocation of water to Texas. To this day D-2 remains the basis for calculating the amount of water delivered to Texas, whereas deliveries in New Mexico are governed by the new D-3 curve. I consider Dr. King’s report to correctly dispute the Texas claim.~~

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 21, 2020



Lee Wilson, Ph.D.