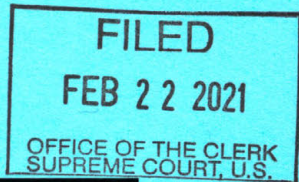


No. 143, Original



In the **Supreme Court of the United States**

STATE OF MISSISSIPPI,

*Plaintiff,*

v.

STATE OF TENNESSEE, CITY OF MEMPHIS, TENNESSEE,  
AND MEMPHIS LIGHT, GAS & WATER DIVISION,  
*Defendants.*

**On Exceptions To The Report Of The Special Master**

**EXCEPTIONS TO REPORT OF THE SPECIAL  
MASTER BY PLAINTIFF STATE OF  
MISSISSIPPI AND BRIEF IN SUPPORT OF  
EXCEPTIONS**

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## **EXCEPTIONS TO REPORT OF THE SPECIAL MASTER**

Plaintiff State of Mississippi respectfully submits the following exceptions to the Report of the Special Master issued on November 5, 2020:

1) Mississippi takes exception to, and this Court should decline to adopt, the Special Master's recommendation that the Supreme Court dismiss Mississippi's Complaint with leave to file an Amended Complaint based on the Court's equitable apportionment jurisprudence applicable to interstate rivers and streams.

2) Mississippi also takes exception to, and this Court should decline to adopt, the components of the Special Master's report and recommendation, including the following:

a) The Special Master's failure to properly consider and apply the foundational Constitutional principles of State retained sovereign territorial authority raised by Mississippi's Complaint in Original Action filed with leave of the Court.

b) The Special Master's erroneous adoption and use of an interstate resource classification not found in the United States Constitution, any federal law enacted by Congress under the Constitution, or ever recognized by the Court.

c) The Special Master's erroneous interpretation of Supreme Court case law defining the nature, scope, and limits of retained State territorial sovereignty in disputes between States under the Constitution.

d) The Special Master's erroneous interpretation of the nature, scope, and application of federal common law under the Constitution generally, and specifically of the equitable remedy created in *Kansas v. Colorado*, 206 U.S. 46 (1907), and its progeny for disputes between States involving interstate rivers and streams.

e) The Special Master's erroneous reading of the Court's case law as creating a right under federal common law authorizing unlimited cross-border groundwater pumping by a State in the absence of any approval by the State from which the groundwater is being pumped.

f) The Special Master's erroneous conclusion that Defendants' groundwater pumping did not constitute a serious violation and invasion of Mississippi's sovereignty and unlawful interference with Mississippi's exclusive authority over all soils, lands and waters located in Mississippi.

g) The Special Master's erroneous conclusion that groundwater found within Mississippi's borders is an interstate natural resource which Mississippi has no authority to regulate, control, or protect from cross-border pumping by neighboring States.

h) The Special Master's failure to recognize and apply the limits of Tennessee's authority in relation to its sister States under the United States Constitution.

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## GLOSSARY OF RECORD CITATION ABBREVIATIONS

Abbreviation	Definition
Tr.	Refers to the transcript of the evidentiary hearing conducted by the Special Master on May 19, 2019 to May 24, 2019, with the parenthetical identifying the witness providing the testimony.
Dep.	Refers to deposition testimony designated and submitted into the record of the evidentiary hearing.
J-__	Refers to the Parties' jointly submitted exhibits.
P-__	Refers to Plaintiff's exhibits.
D-__	Refers to Defendants' exhibits.

## I. INTRODUCTION

Beginning in the mid-1960s, the City of Memphis (“Memphis”), through its Memphis Light, Gas and Water Division, (“MLGW”) expanded its commercial groundwater pumping operations, including the construction and operation of new well fields within a few miles of the Mississippi border, to pump groundwater from what the Special Master identified as the Middle Claiborne Aquifer. That aquifer is not a free-flowing underground lake in which water withdrawn from one side automatically diminishes the amount of water available to all. Nor is it an underground river similar to surface water flowing freely through multiple states. MLGW intentionally pumped enough water to create a regional “cone of depression” extending across the Mississippi border – an easily avoidable result – and pulled into Tennessee for capture and sale billions of gallons of high-quality groundwater that was located in Mississippi and subject to Mississippi’s exclusive authority and control as a sovereign under the United States Constitution.

Defendants continued to pump massive amounts of water for decades.<sup>1</sup> In an ongoing intentional invasion of Mississippi’s sovereign territory, Defendants took an estimated 411 billion gallons of Mississippi

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<sup>1</sup> The Court need not distinguish the State of Tennessee (“Tennessee”) from its governmental subdivision because (1) the evidence establishes Tennessee’s complicity with Memphis’ cross-border pumping of Mississippi groundwater; and (2) governmental and proprietary function distinctions are irrelevant to this Constitutional analysis. *New York v. U.S.*, 326 U.S. 572, 583 (1946).

groundwater between 1965 and 2016 through commercial groundwater pumping conducted within a few miles from the Mississippi-Tennessee border.

The question presented in Mississippi's Original Action is whether Mississippi holds exclusive retained territorial sovereign authority and right to preserve, protect and control groundwater located within its borders to the exclusion of Tennessee, making Defendants' intentional cross-border pumping of Mississippi groundwater a violation of the United States Constitution. In rejecting Mississippi's claim, the Special Master erroneously held that the federal common law remedy of equitable apportionment is the only relief the Court may award in this original action. But that remedy is appropriate only to resolve disputes between States involving interstate rivers and streams, where the water flows generally unencumbered from State-to-State. It is an inappropriate vehicle for addressing one State's use of pumping stations on the border to acquire groundwater located in another State.

The Special Master therefore erred in treating this case as merely a squabble over the diversion of a shared "interstate natural resource." This case is fundamentally about a State's territorial sovereignty and its exclusive authority to preserve, protect, and control natural resources located within its boundaries. Accordingly, the Special Master's Report and Recommendation ("Report") should be rejected, and the Court should enter a decree in favor of Mississippi finding and holding that the groundwater at issue is not a shared resource and that Defendants have knowingly, intentionally, and wrongfully violated

Mississippi's sovereignty and exceeded the limits of Tennessee's retained sovereign authority by their cross-border groundwater pumping and taking of Mississippi groundwater; and ordering such further proceedings as needed to establish all remedies to which Mississippi is entitled.

## II. SUMMARY OF MISSISSIPPI'S CASE

Under the United States Constitution, the States retain all title, jurisdiction, and sovereign authority over lands and waters not ceded to the federal government which they possessed as separate nations before ratification of the Constitution. Mississippi's admission into the Union by Congress under Article IV, Section 3, Clause 1 of the Constitution on December 10, 1817, established Mississippi's sovereign authority and responsibility to its citizens over all surface and subsurface lands and waters in its territory to the exclusion of all its sister States. Shortly thereafter the Court affirmed State territorial sovereign authority over all lands and waters within its territorial borders, emphasizing that each State's authority and rights end at its borders and do not extend into its sister States. *Rhode Island v. Massachusetts*, 37 U.S. 657, 733 (1838). Accordingly, no State can possess any right or authority over any surface or subsurface waters located within the borders of another State.

The Court has never wavered from this interpretation of the Constitution. In *Kansas v. Colorado*, 206 U.S. 46 (1907), the Court expressly recognized that it did not address any question of State boundaries or of the limits of territorial jurisdiction, and that "each state has full jurisdiction over the lands

within its borders, including the beds of streams and other waters.” *Id.* at 665-666. In the absence of any power ceded to the federal government by the Constitution, or any federal legislation addressing this dispute between the States, the Court only fashioned a federal common law equitable remedy grounded in the historical use of the Arkansas River water throughout the territory from which the two States were subsequently created.” *Id.* at 667-668. Nothing in this or any other equitable apportionment case created any cross-border State interest or right under the Constitution and laws of the United States.

The Special Master’s conclusions grounded in federal common law are fatally flawed because the equitable apportionment cases do not and cannot change the Constitution, which expressly forbids cross-border groundwater rights, and because the Special Master ignored the well-settled doctrine established by the Court that a State cannot do indirectly what the Constitution forbids it to do directly. *Smith v. Turner*, 48 U.S. 283, 458 (1849). *See also Stadia Oil & Uranium Co. v. Wheelis*, 251 F.2d 269, 275 (10th Cir. 1957) (“It is an old maxim of the law that a person will not be permitted to do indirectly what he cannot do directly.”).

### III. MATERIAL FACTS

#### A. The Characteristics of the Mississippi Groundwater at Issue as Distinct from Surface Water.

An initial error driving the proceedings before the Special Master was his acceptance of Defendants’ insistence that there are no differences in surface



water and groundwater, making it important to address this issue on a high level as a starting point for this discussion:

*Surface water* occurs in readily discernible drainage basins. The boundaries are topographic and may be easily delineated on a topographic map. The water conveniently flows in the direction in which the land surface is sloping. Moreover, surface water does not cross topographic divides (except, perhaps, during floods) and the locations of the drainage divides are fixed.

*Groundwater, on the other hand,* occurs in aquifers that are hidden from view. The boundaries of an aquifer are physical: it can crop out, abut an impermeable rock unit, grade into a lower permeability deposit, or thin and disappear. At a given location, the land surface may be underlain by several aquifers. Each aquifer may have different chemical makeup and different hydraulic potential; each may be recharged in a different location and flow in a different direction. Moreover, groundwater divides do not necessarily coincide with surface-water divides.

J-27 at 441-442 (italics added and reformatted for clarity).<sup>2</sup>

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<sup>2</sup> Additional distinctions are discussed at J-2, pages 8, 10, 13, 15-16 of 86; J-40, pages 6-10, 30 of 91; and J-68, pages 9, 11-14 of 79. See also J-52 at 5-12 ("unlike rivers, ground-water flow cannot be measured directly:" "the lag time between development stresses

The water at issue in this case is groundwater that was present *in situ* in northwest Mississippi and was siphoned into Tennessee by MLGW's commercial turbine pumps for commercial sale in Tennessee.

Under natural conditions, prior to being pumped into Tennessee, this groundwater was located hundreds of feet below the surface of northwest Mississippi in pore spaces or fractures that exist between and around naturally occurring materials. Tr. (Spruill) 47-49; J-40, page 90 of 91. The naturally occurring materials constituting the northwest Mississippi subsurface are extremely small grains of unconsolidated sedimentary materials, including varying complex compositions of clay, silt, sand, and, in some locations, gravel which may change significantly over a few hundred feet. Tr. (Spruill) 49-52.<sup>3</sup> The groundwater at issue was not part of (nor like) an underground lake or underground

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and resulting regional responses is very much longer in a ground-water system than in a surface-water system;" "the allocation of existing ground-water flow rates may not provide a logical basis for distributing or allocating the development of the ground-water resource;" "there are serious measurement problems" in head distribution data; "hydraulic head also varies with depth and with time at any given location").

<sup>3</sup> "Clay" refers to any naturally occurring material that is less than 1/256<sup>th</sup> of a millimeter in "grain size." "Silt" refers to material that is between 1/256<sup>th</sup> of a millimeter and 1/16<sup>th</sup> of a millimeter. "Sand" refers to any material that is between 1/16<sup>th</sup> of a millimeter and 2 millimeters. "Gravel" refers to material larger than 2 millimeters. Tr. (Spruill) 49-51. These terms—clay, silt, sand, and gravel—are used exclusively by geologists to indicate that the particles are not stuck together, i.e., they are *unconsolidated* materials. Tr. (Spruill) 51.

stream flowing in a defined channel. Tr. (Spruill) 386; P-73. Instead, it was found as very small amounts of water located in the tiny pore spaces that exist between and around tiny grains of sand and other unconsolidated materials in the subsurface. Tr. (Spruill) 52, 386.

Most of the groundwater at issue was in a geologic formation identified by geologists as the "Sparta Sand," while some water (at or just south of the Mississippi-Tennessee border) was located in a geologic formation identified by geologists as the "Memphis Sand," or the transition between the two. Tr. (Spruill) 81, 94, 244. These formations are comprised predominantly of sand of varying grain sizes and irregular shapes, interspersed with varying compositions of clay and silt. Tr. (Spruill) 50, 52.<sup>4</sup>

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<sup>4</sup> The subsurface environment is, of course, extremely "messy." The Mississippi Embayment, for example, underlies (at least) eight states, with soils which are infinitely complex and diverse due to the natural forces which created the Mississippi Embayment millions of years ago. Tr. (Spruill) 67-75; S9. The subsurface geology includes discontinuous deposits of sedimentary materials, including sand, silt, and clay, and the generally recognizable formations vary in geographic coverage, thickness, permeability, specific yield, water quality, and other characteristics, (S8) with such characteristics subject to dramatic change over short distances, even within a single aquifer. S8; Tr. (Spruill) 142, 146. *See also* Tr. (Spruill) 367-87; Tr. (Langseth) 1098-1100 (different subsurface materials may be found by merely moving 100 feet; subsurface formations vary greatly by depth as well, resulting in great variations in water transmissivity and yield); J-13, page 5 of 26 ("quality of water from the freshwater aquifers in the Memphis area varies between different aquifers and within the same aquifer.").

Mississippi does not claim that this groundwater would have remained in Mississippi *forever* absent MLGW pumping, or that it is stationary, but its natural movement—dictated by gravity and pressure—is extremely slow. Tr. (Spruill) 77, (Wiley) 405. Under natural conditions, the groundwater was creeping westward from outcrops in Mississippi between and around grains of sedimentary materials at an average rate of one or two inches per day. Tr. (Spruill) 121-22, (Wiley) 405. At one inch a day, a molecule of the groundwater at issue moved only thirty feet in a year, *one mile in 175 years*. Tr. (Spruill) 121, (Wiley) 458. The groundwater was located in Mississippi (or the territory that became Mississippi) for hundreds and thousands of years, as part of Mississippi's subterranean structure. Tr. (Wiley) 450.<sup>5</sup> The record is that most surface water entering the Sparta and Memphis Sand outcrops in Mississippi remains in Mississippi groundwater storage for a period of approximately 4,000 to 22,000 years (or an average of 7,542 years) under natural conditions. Tr. (Wiley) at 461-63; P-184.

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<sup>5</sup> The rate of flow (velocity) and direction of groundwater movement in confined aquifers has nothing in common with surface water. USGS Circular 1186 (J-2) addresses this fact, explaining that river flow is measured in miles per day (e.g., 16 miles a day), while groundwater velocity is measured in inches per day, with groundwater movement of a foot a day considered a high velocity. J-2 at 15 of 86. Further, natural groundwater movement in a confined aquifer (such as the Sparta and/or Memphis Sand) is driven by gravity and pressure—both determined in nature by geology and hydrologic characteristics of the specific aquifer. J-2 at 15-17 of 86.

## **B. MLGW'S Intentional Cross-Border Pumping and Extractions of Mississippi Groundwater.**

MLGW sells water, gas, and electricity to customers in the Memphis area. S10. All the water MLGW sells to its customers is groundwater pumped by MLGW from a confined water-bearing formation (the Memphis Sand aquifer) utilizing large commercial turbine pumps. Tr. (Spruill) 73, 189; P-51, pages 5, 13 of 140; P-52; P-94. Despite the fact Memphis has never needed to rely solely on groundwater, as the "Mississippi River passes by its 'doorstep' carrying tremendous volumes of water to the Gulf of Mexico daily," J-60, pages 32-33 of 40, it decided to rely entirely on groundwater for its sales of water. J-23 at 1.<sup>6</sup>

MLGW's system consists of more than 160 wells in 10 well fields: Allen, Davis, Lichterman, LNG, Mallory,

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<sup>6</sup> "Most wells in the Memphis Sand range from about 300 feet to about 700 feet in depth...." J-60, page 29 of 40. MLGW's wells are completed in a "confined" aquifer, not a "water table" aquifer. See J-40, page 11 of 91 ("Groundwater occurs in aquifers under two different conditions. Where water only partly fills an aquifer, the upper surface of the saturated zone is free to rise and decline. The water in such aquifers is said to be unconfined, and the aquifers are referred to as unconfined aquifers. Unconfined aquifers are also widely referred to as water-table aquifers. Where water completely fills an aquifer that is overlain by a confining bed, the water in the aquifer is said to be confined. Such aquifers are referred to as confined aquifers or as artesian aquifers. Wells open to unconfined aquifers are referred to as water-table wells. The water level in these wells indicate the position of the water table in the surrounding aquifer. Wells drilled into confined aquifers are referred to as artesian wells. The water level in artesian wells stands at some height above the top of the aquifer but not necessarily above the land surface.").



McCord, Morton, Palmer, Shaw, and Sheahan. S11; S13.<sup>7</sup>

Although its wells are in Shelby County, (S11; Tr. (Spruill) 186) MLGW placed many wells in very close proximity to Mississippi. The southern boundary of Shelby County is located on the Tennessee-Mississippi border and adjoins the northern boundary of Desoto County, Mississippi, and the northwestern boundary of Marshall County, Mississippi. S12. MLGW's Palmer field wells are approximately three-quarters (3/4ths) of a mile from the Mississippi border; its Davis field wells are approximately two miles from the border; and its Lichterman field wells are approximately two to four miles from the border. Tr. (Spruill) 187-88; S14. *See also* J-49, page 7 of 27, figure 1 (well field locations); P-54 to P-57.<sup>8</sup>

The removal of groundwater through pumping establishes hydraulic gradients that induce the flow of groundwater into the well from areas surrounding the well, reducing groundwater levels and creating a "cone of depression." J-40, page 33 of 91; Tr. (Spruill) 149-150. Pumping pulls groundwater within the area of the cone of depression into the well. Brahana Dep. at 43; Tr. (Spruill) 149-150, 205, 208-209; J-59, pages 17-19 of 32.

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<sup>7</sup> The amount of groundwater MLGW has produced from these well fields is massive: 2.446 trillion gallons from 1965-2016. P-157, page 2 of 2; J-60, page 28 of 40; P-52.

<sup>8</sup> The Lichterman field began operations in 1965; the Davis field in 1970; and the Palmer field in 1973. *See* P-157, page 2 of 2.

MLGW could have designed its pumping system to avoid drawing groundwater from Mississippi. Groundwater hydrogeologists and water well operators can predict the extent and depth of the cones of depression that will be created by their pumping operations, Tr. (Waldron) 934-37, and can take actions to *control* those cones of depression and thereby eliminate the adverse effects of their operations on neighboring properties. For example, in the well field design stage, well spacing can be implemented to restrict the areal extent and depth of a well field's cones of depression, Tr. (Spruill) 76-81, 197-98, 250-54; and during the operations stage, an operator can further restrict the cones through strategic well operations, such as shutting down wells for periods of time which contracts/shrinks the cones. Tr. (Spruill) 250-56; Tr. (Waldron) 936-37.

But MLGW made no effort to avoid interfering with and taking Mississippi groundwater. Rather, MLGW's pumping has created a deep/steep cone of depression that extends many miles into Mississippi, including into DeSoto County, Mississippi; and MLGW's pumping is pulling groundwater from Mississippi into Shelby County for production and sale by MLGW.<sup>9</sup> Tr.

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<sup>9</sup> Brahana Dep. at 45 and 122; Gentry Dep. at 53:7; J-11, page 13 of 27; J-24, page 9 of 54; J-33, page 1 of 1; J-34, page 6 of 26; J-35, page 23 of 52; J-48, page 1 of 1; J-50, page 1 of 1; J-60, page 29 of 40; J-62, page 5 of 13; J-63, page 12 of 36; J-64, pages 32-33 of 48; J-67, page 1 of 1; J-76, page 21 of 192; P-72, page 4 of 4; Tr. (Wiley) 429, 434, 442, 448-50, 453-54; Tr. (Spruill) 188, 205-06. *See also*, P-101, page 14 of 44 ("MLGW pumped an average of 208 million

(Waldron) 928 (admission by Tennessee expert witness Brian Waldron that groundwater located in Mississippi is being pulled into Tennessee by MLGW pumping).

MLGW installed and developed three well fields (Lichterman, Davis, and Palmer) adjacent to the Mississippi border in the mid-1960's and early 1970's with the full knowledge and apparent intention that those wells would capture and produce substantial volumes of Mississippi groundwater. This is confirmed by three United States Geological Survey ("USGS") reports appearing in the record as Exhibits J-22, J-58, and J-59.

Exhibit J-22 (USGS Water-Supply Paper 1779-O) was prepared in cooperation with the City of Memphis and MLGW. J-22, page 1 of 69. This 1964 report was based on pumping data for 1960, prior to MLGW's installation and operation of the Lichterman, Davis, and Palmer wells. The report advised MLGW that the heavy pumping of groundwater in Shelby County, including by MLGW, had created large (aerially) and very steep/deep cones of depression that extended into adjoining states, including Mississippi, and that this heavy pumping by MLGW and others was inducing the flow of groundwater from Mississippi into the Memphis area, where the groundwater from Mississippi was captured and produced by MLGW and others. J-22, page 9 of 69. The report also raised the question of "the

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gallons per day in 1995, with an estimated 20 to 40 million gallons per day thought to be coming from beneath DeSoto County, Mississippi.")

legal aspects ... of continued development” in the Memphis area. J-22, page 59 of 69.

Exhibit J-58 (USGS Water-Supply Paper 1809-F) is a 1965 USGS report prepared in cooperation with the Tennessee Department of Conservation. J-58, page 1 of 58. Building on the 1964 report (Ex. J-22), the 1965 USGS report advised the State of Tennessee—that: “Under conditions of heavy pumping in Memphis, 25 mgd [million gallons per day] has been diverted into Shelby County as underflow through the ‘500-foot’ sand from Mississippi. . . .” J-58, pages 34-35 of 58. *The USGS concluded that future increases in pumping in the Memphis area would increase the amount of groundwater being captured from Mississippi.* J-58, pages 46-47 and 49 of 58.

A third USGS report, J-59 (USGS Water-Supply Paper 1819-B), published in 1965, was also prepared in cooperation with the City of Memphis and MLGW. J-59, page 1 of 32. That report predicted the hydrologic effects of pumping from MLGW’s Lichterman field, which was “scheduled to go into operation early in 1965 to supplement the municipal water-supply system for the City of Memphis, Tenn.” J-59, page 6 of 32. The report advised MLGW that “an estimate of 20 miles is considered reasonable for the probable extent of the cone of depression to be formed around the Lichterman well field.” J-59, page 19 of 32. Since the Lichterman Field is approximately three miles from Mississippi, (S14; (Spruill) Tr. 191) MLGW *knew* that the cone of depression formed by MLGW’s operation of Lichterman would likely extend approximately *17 miles into Mississippi.*

Defendants thus knew in the mid-1960's from these USGS reports that (1) the cone of depression previously created by Defendants' groundwater pumping had expanded into Mississippi by 1960 and was taking approximately 25 MGD of Mississippi groundwater into Tennessee for the benefit of Tennessee's citizens at the expense of Mississippi; (2) additional increases in groundwater pumping by Defendants would continue to lower groundwater levels, thereby reducing the amount of groundwater in storage within the area of the cone of depression; and (3) the amount of groundwater flowing into Tennessee from Mississippi for capture by MLGW would continue to increase. Nevertheless, MLGW located three new fields (Lichterman, Palmer and Davis) right next to the Mississippi border and increased its pumping substantially, producing 666.8 billion gallons of groundwater from these three fields during the period of 1965-2016. See P-157, page 2 of 2.<sup>10</sup>

Although the precise amount taken by MLGW from Mississippi has not been fully developed due to the scope of the ordered proceeding, it is undisputed that the volumes are substantial. Plaintiff's expert David Wiley used a USGS finite difference model created for the Memphis area to estimate that the amount of groundwater taken by MLGW from Mississippi from 1965 through 2016 was approximately 21.7 million gallons per day, for an approximate total of *411 billion*

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<sup>10</sup> MLGW began operating the Lichterman wells in 1965, the Davis wells in 1970, and the Palmer wells in 1973; and increased its total Memphis Sand pumping from 55.5 Mgd in 1960 to 110.5 Mgd in 1975, basically *doubling* its production. J-24, page 46 of 54.

gallons. Tr. (Wiley) 468 and 481; P-159. *See also* Tr. (Wiley) 397-487, 551-555. In 1998, *The Commercial Appeal* (Memphis) similarly reported that groundwater pumping in Shelby County was taking approximately 20 million gallons of groundwater per day from Mississippi, an amount determined by Randy Gentry (of the Memphis Groundwater Institute) to be a reasonable estimate. Gentry Dep. at 35.

Defendants knew this was happening, yet they have continued to pump millions of gallons of groundwater from Mississippi. *See* P-61 and P-62 (MLGW 2003 Scanner Reports); P-63 and P-64 (MLGW 2007 Scanner Report); P-64 to P-70 (Memphis' internal discussions of reports of groundwater being taken from Mississippi); P-71 (USGS studies showed that there was "little doubt" that groundwater was coming from Mississippi).<sup>11</sup>

The cones of depression created by MLGW have caused material, adverse physical changes to Mississippi's sovereign territory beyond the taking of groundwater, including adverse changes to the hydrogeologic conditions existing in northwest Mississippi. *See* J-76, page 21 of 192 ("Withdrawals in Shelby County have caused a major cone of depression and reorientation of aquifer gradients in adjacent counties."); J-4, page 10 of 68 ("Ground-water development in the Memphis area changed the direction of net horizontal flow east of the Mississippi River near the 35<sup>th</sup> parallel from southward before

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<sup>11</sup> *See also*, P-96, page 4 of 10 ("specific water rights unclear"); P-97-100; P-106-109.

development to a northward flow.”); J-10, page 26 of 80 (“From 1886 to 1975 pumpage at Memphis had drawn down the original potentiometric surface by as much as 150 feet in the major pumping center and reversed the original gradient, which was to the west (Criner and Parks, 1976). Flow that moved through the area toward natural discharge points to the south and west before 1886 is now diverted and captured by pumpage at Memphis.”); Brahana Dep. 136-137 (cone of depression has altered the natural flow path of groundwater in Mississippi).

MLGW’s cone of depression has also caused a reduction of “total available drawdown” within the cone’s area/zone of influence. Tr. (Spruill) 210, 274-275. This reduction of total available drawdown interferes with the operation of and has had material adverse effects on each well located in Mississippi within the cone of depression created by MLGW. The “maximum yield” of each such Mississippi well has been reduced and the amount of groundwater the well can recover has thereby been reduced, which means that more wells and more pumps--at great expense--are required to recover the water needs of Mississippi’s producers; and the power costs of those producers have also been increased. Tr. (Spruill) 153, 212-14; J-40, pages 50, 68 and 81 of 91.

The drastic reduction of the natural pressures within the cone of depression created by Defendants has also converted parts of the shallower Mississippi alluvial aquifer from an area naturally recharged by groundwater from the Memphis Sand, to an area of recharge for the Memphis Sand; and is drawing much



younger (and potentially contaminated) groundwater in these shallower aquifer formations downward into the older, higher quality groundwater in the Memphis and possibly Sparta sands J-15, page 31 of 64; J-17, page 11 of 78; J-19, page 27 of 76; J-35, pages 7, 43 of 52; J-49, page 6 of 27; J-60, pages 29, 32-33 of 40; J-64, pages 41-42 of 48; J-67, page 1 of 1.

#### **IV. THE SPECIAL MASTER'S ERRONEOUS FOUNDATIONAL CONCLUSIONS**

The Special Master found that the groundwater at issue is included in a “hydrogeological unit” known as “the Middle Claiborne Aquifer.” Report at 11, 12, 15, 20, 22, 25. The Special Master, at Defendants’ urging, concluded that all groundwater contained in the Middle Claiborne Aquifer is an “interstate resource” because (1) the Aquifer exists underneath multiple States, (2) groundwater pumping in one State affects the groundwater in another State, (3) groundwater in the Aquifer “ultimately” (after hundreds and thousands of years) flows across Mississippi’s boundaries, and (4) the Aquifer interacts with interstate surface waters. Report at 11.

Having concluded that the Middle Claiborne Aquifer is an “interstate resource,” the Special Master further concluded that: “When states fight over interstate water resources, equitable apportionment is the remedy.” Report at 26. Because Mississippi has asserted no claim for equitable apportionment, the Special Master recommended that Mississippi’s complaint be dismissed with leave granted for Mississippi to assert a claim for equitable apportionment. Report at 32.

## V. ARGUMENT

While this Court gives the Special Master's factual findings "respect and a tacit presumption of correctness," it retains "the ultimate responsibility for deciding what are correct findings of fact" and conducts an "independent review of the record" in deciding the case. *Colorado v. New Mexico*, 467 U.S. 310, 317, (1984). Mississippi respectfully submits that the Special Master's decision is incorrect.

The Special Master's framing of the evidentiary hearing in terms applied only in the Court's jurisprudence addressing equitable apportionment of surface waters misses the fundamental legal question. This case is about the sovereignty of Mississippi over groundwater located in Mississippi -- a natural resource found in the soils of Mississippi and not shared like the surface water flowing through interstate rivers and streams which was shared in the colonies and territories before they became sovereign States. Regardless of the direction or velocity of its movement after it seeped into the earth at Mississippi outcrops, and regardless of the aquifer(s) in which it was located, the groundwater at issue was (when Defendants took it) part of Mississippi's sovereign territory and subject to Mississippi's exclusive dominion and control under the Constitution of the United States.

In stark contrast to moving surface water in the interstate river cases, and minnows, migrating waterfowl, and anadromous fish harvested for sale or consumption, the Mississippi *in situ* groundwater resource at issue clearly resided in Mississippi before

Defendants' pumping and has never been the subject of an international treaty or interstate commerce.

MLGW's operations have forcibly and intentionally siphoned through the earth into Tennessee for commercial sale by MLGW hundreds of billions of gallons of this high-quality groundwater located in Mississippi and held in trust by Mississippi for its citizens. This taking by Defendants was without Mississippi's permission, without payment of compensation to Mississippi, and by unconstitutional, intentional violations of Mississippi's sovereignty and intrusions into Mississippi's sovereign territory.

The Special Master concluded that Defendants' intentional cross-border capture of Mississippi water by Defendants, the corresponding adverse changes to hydrologic conditions in Mississippi, and the resultant harm to Mississippi's citizens do not implicate Mississippi's sovereign rights. According to the Special Master, the groundwater in Mississippi at issue is an "interstate resource" which Defendants are free to take using pumps located in Tennessee; and Mississippi's only recourse is to seek to have this "interstate resource" equitably apportioned by the Court.

The Special Master's conclusions are manifestly erroneous. There is no "borderless common" for groundwater under the Constitution. Defendants simply have no right or authority under the Constitution to or in any groundwater located beyond Tennessee's borders; and have no right to reach into and invade Mississippi's sovereign territory through artificial, mechanical, or technological means to forcibly capture groundwater that is subject to Mississippi's

exclusive dominion and control under the Constitution or to otherwise adversely impact hydrologic conditions in Mississippi and injure Mississippi's citizens.

**A. Under the Constitution, Mississippi Possesses Exclusive Sovereign Authority Over All Waters Located Within Its Borders, Including the Groundwater at Issue.**

The United States Constitution, Article IV, Section 3, Clause 1 provides:

New States may be admitted by the Congress into this Union; but no new State shall be formed or erected within the Jurisdiction of any other State; nor any State be formed by the Junction of two or more States, or Parts of States, without the Consent of the Legislatures of the States concerned as well as of the Congress.

The Tenth Amendment to the Constitution provides:

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

Relatively recent cases have reminded us of the first principles embodied in the Constitution which created a governmental structure in which the States retained “numerous and indefinite sovereign powers.” *U.S. v. Lopez*, 514 U.S. 549, 552 (1995).

On December 10, 1817, Mississippi was admitted as the twentieth state to the Union. Upon its admission,

Mississippi became an absolute sovereign under the law of nations over all lands and waters within its borders, subject only to the authority ceded to the federal government under the Constitution. *E.g.*, U.S. Const. amend. X; *PPL Montana, LLC v. Montana*, 565 U.S. 576, 590-91 (2012).<sup>12</sup> State sovereign authority over all waters within its borders is an “essential attribute of sovereignty” existing under the Constitution to the exclusion of other States. *Tarrant Reg’l Water Dist. v. Herrmann*, 569 U.S. 614, 631-32 (2013); *United States v. Alaska*, 521 U.S. 1, 5 (1997); *Kansas v. Colorado*, 206 U.S. 46, 93-95 (1907). *See also* *Rapanos v. United States*, 547 U.S. 715, 738 (2006) (state control of all water within its borders is “quintessential” exercise of state power).

The Mississippi Supreme Court affirmed Mississippi’s exclusive authority over all its water resources, including subterranean resources, in *Cinque Bambini P’ship v. Mississippi*, 491 So.2d 508, 511-14, 516-17 & 519-20 (1986), affirmed by the Court in *Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469 (1988). The *Cinque Bambini P’ship* Court recognized that, once Mississippi had been admitted to the Union and the public trust had been created and funded, the role of the equal footing doctrine ended and the plenary authority over the resources conveyed in trust became

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<sup>12</sup> *See also* *Idaho v. Coeur d’Alene Tribe*, 521 U.S. 261, 286-87 (1997); *Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469, 479 (1988); *Montana v. United States*, 450 U.S. 544, 551-52 (1981); *Oregon ex rel. State Land Bd. v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 374 (1977); *Pollard v. Hagan*, 44 U.S. 212, 222-23 (1845); *Martin v. Waddell’s Lessee*, 41 U.S. 367 (1842); *Rhode Island v. Massachusetts*, 37 U.S. 657, 733 (1838).

vested in the State. 491 So.2d at 512-13. It is, thus, the State's prerogative and responsibility to control, protect, and preserve the resources it holds in trust for the use and benefit of its citizens. *Id.* at 513, 517. See also *PPL Montana, LLC v. Montana*, 565 U.S. 576, 604 (2012) (finding that “[u]nder accepted principals of federalism, the States retain residual power to determine the scope of the public trust over waters within their borders”).

In 1985, the Mississippi Legislature codified the public trust doctrine, declaring that, as a sovereign State, “[a]ll water, whether occurring on the surface of the ground or underneath the surface of the ground, is . . . among the basic resources of this state to therefore belong to the people of this state,” and further declaring, as a sovereign State, that: [t]he control and development and use of water for all beneficial purposes shall be in the state, which, in the exercise of its police powers, shall take such measures to effectively and efficiently manage, protect, and utilize the water resources of Mississippi.

Miss. Code Ann. § 51-3-1 (2003).

Mississippi's water resources include “groundwater,” which is defined by Mississippi to mean “water occurring beneath the surface of the ground.” Miss. Code Ann. § 51-3-3(n) (2003). Under the United States Constitution, groundwater located within Mississippi's borders is a component part of Mississippi's sovereign territory and subject to Mississippi's exclusive dominion and control; and

Mississippi actively regulates its withdrawal and use. See Miss. Code Ann. § 51-3-5 (2003) (“No person who is not specifically exempted by this chapter shall use water without having first obtained a permit as provided herein . . .”). See also P-75, P-76, P-78 to P-84, and P-86 to P-88 (examples of Mississippi’s active regulation of groundwater).

## **B. Under the Constitution, Tennessee Has No Right to Capture Groundwater Located Outside of its Boundaries.**

The honoring of territorial boundaries has always been and continues to be at the foundation of the Union. As a matter of fundamental Constitutional law, Tennessee has no rights to groundwater located in Mississippi or any other groundwater located beyond Tennessee’s territorial boundary. The Court in *Rhode Island v. Massachusetts*, 37 U.S. 657 (1838), emphasized the absolute prohibition against one State’s violation of another State’s territorial sovereignty, holding as follows:

The locality of [a State boundary] is matter of fact, and, when ascertained separates the territory of one from the other; *for neither state can have any right beyond its territorial boundary. It follows, that when a place is within the boundary, it is a part of the territory of a state; title, jurisdiction, and sovereignty, are inseparable incidents, and remain so till the state makes some cession.*

*Id.* at 733 (emphasis added). Mississippi has never made any such cession to Tennessee.



**C. The Court Recently Enforced State Territorial Sovereignty Over Waters in *Tarrant Regional Water Dist. v. Herrmann*, 569 U.S. 614 (2013).**

In disputes between States the location of a territorial boundary is the beginning and end of each sovereign's rights, including with respect to natural resources in the subsurface. *See United States v. Louisiana*, 363 U.S. 1 (1960) (dispute between the United States and five states on Gulf of Mexico over lands, minerals, and other natural resources); *Louisiana v. United States*, 656 F. Supp. 1310, 1312 (W.D. La. 1986), *aff'd sub nom. Louisiana ex rel. Guste v. United States*, 832 F.2d 935 (5th Cir. 1987) (Louisiana suit for drainage dismissed because United States had already paid for drainage beneath Louisiana sovereign lands).

These foundational principles of State sovereignty were reaffirmed in *Tarrant* where the petitioner contended that an interstate compact allocating the surface water from the Red River created a borderless common in which the signatories had a right to cross each other's borders to access water that was subject to the compact. 569 U.S. at 625. The Court rejected the argument that Texas could reach into Oklahoma to access surface water being held under an interstate compact that gave Texas equal rights to the surface water of the Red River impounded in Oklahoma, subject to a 25% cap. *Id.* at 627. While the Compact clearly granted Texas an ownership interest in this body of water being held in Oklahoma, it was silent regarding any right to force Oklahoma to release the water under Oklahoma state law, which prohibited its

release. In rejecting Texas' argument that it could force the release of this surface water, the Court affirmed Oklahoma's territorial sovereignty in a way directly applicable to this case:

The background notion that a State does not easily cede its sovereignty has informed our interpretation of interstate compacts. We have long understood that as sovereign entities in our federal system, the States possess an "absolute right to all their navigable waters and the soils under them for their own common use." *Martin v. Waddell's Lessee*, 41 U.S. 367 (1842). Drawing on this principle, we have held that ownership of submerged lands, and the accompanying power to control navigation, fishing, and other public uses of water, "is an essential attribute of sovereignty," *United States v. Alaska*, 521 U.S. 1, 5, 117 S.Ct. 1888, 138 L.Ed.2d 231 (1997). Consequently, "[a] court deciding a question of title to [a] bed of navigable water [within a State's boundaries] must ... begin with a strong presumption' against defeat of a State's title." *Id.*, at 34, 117 S.Ct. 1888 (*quoting Montana v. United States*, 450 U.S. 544, 552, 101 S.Ct. 1245, 67 L.Ed.2d 493 (1981)).

*Id.* at 663-662.

Like Texas in *Tarrant*, Tennessee has no claim of right in law or equity to groundwater *while it is located within the territorial boundaries of Mississippi*. Under the Constitution no State has any claim of right to any water while it is located within another State, even if the parties have agreed by compact to share the water,

unless they expressly agree that such cross-border rights are granted.

**D. The Special Master Erred in Concluding that the Court’s Equitable Apportionment Cases Control Mississippi’s Remedies.**

The Special Master’s fundamental legal error is his conclusion that “[w]hen states fight over interstate water resources, equitable apportionment is the remedy.” Report at 26. This conclusion has no support in the Supreme Court case law. Equitable apportionment makes sense when applied to surface waters (or fish in surface waters) that travel freely from State-to-State—and those are the only instances in which this Court has applied it. It does not readily apply to a resource, such as the groundwater at issue here, that is part of the soil and will stay within a State’s borders for hundreds of years absent affirmative action by another State.

The Court’s seminal case on equitable apportionment is *Kansas v. Colorado*, 206 U.S. 46 (1907). *Kansas* first presented the question of the Court’s authority to resolve a conflict between two states over the water in a river which naturally ran between and among several states but was not navigable. The United States argued that state water law was subordinate to federal law, giving a superior right to the national government over the whole Arkansas River system flowing through the states. *Id.* at 89-93. The Court rejected this argument concluding “[i]t is enough for the purposes of this case that each State has full jurisdiction over the lands within its

borders, including the beds of streams *and other waters*.” *Id.* at 93 (emphasis added) (citations omitted).

As the downstream state fearing dispossession of the water, Kansas also argued that federal common law controlled the river, asserting that “Congress had expressly imposed the common law on all this territory prior to its formation into States.” *Id.* at 95. The Court also rejected this argument stating: “But when the States of Kansas and Colorado were admitted into the Union they were admitted with the full powers of local sovereignty which belonged to other States . . . .” *Id.* (citations omitted). The Court expressly recognized that each state possessed the right to determine its own law and policy controlling all water found within its borders, and that “[n]either State can legislate for or impose its own policy upon the other.” *Id.*

To solve the obvious dilemma resulting from a river flowing through multiple states—each possessing complete sovereignty over the water *while in its territory*—the Court applied the cardinal rule of equality of right among the states to authorize the equitable apportionment of water naturally shared by the citizens of the territory before either state was formed. *Id.* at 97.<sup>13</sup>

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<sup>13</sup> Before addressing a remedy in *Kansas v. Colorado* (equitable apportionment), the Court had to find an overriding equitable interest in the competing states, because within their borders “each State has full jurisdiction over the lands within its borders, including the beds of streams and other waters.” *Id.* at 93. This equitable interest was found in the conditions pre-existing the creation of the two States: “Before either Kansas or Colorado was settled the Arkansas River was a stream running through the

None of this Court's subsequent "equitable apportionment" cases have expanded the federal common law remedy of equitable apportionment beyond the surface water in interstate rivers and streams (or migrating fish traveling interstate) in them. Instead, the equitable apportionment doctrine which arose out of *Kansas v. Colorado* has been limited to disputes between States involving interstate rivers and streams and has never been applied outside that context.<sup>14</sup> Equitable apportionment has never been broadly applied to all "interstate water resources" nor to "natural resources" as argued by the Defendants and accepted by the Special Master.

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territory which composes these two States." This fact along with the scarcity of any water in the two states at the time was the basis for that equitable interest supporting the equitable remedy. *See id.* at 98-99.

<sup>14</sup>All of the Court's equitable apportionment cases begin by tracing the interstate path of the water. *E.g.*, *Kansas v. Colorado*, 206 U.S. 46, 50 (1907) (Arkansas River from Colorado through Kansas, Oklahoma, Indian Territory, Arkansas, and to the sea); *Wyoming v. Colorado*, 259 U.S. 419, 456 (1922) (Laramie River from Colorado through Wyoming to North Platte River); *New Jersey v. New York*, 283 U.S. 336 (1931) (Delaware River from New York to Pennsylvania, New Jersey, and Atlantic Ocean); *Nebraska v. Wyoming*, 325 U.S. 589, 592 (1945) (North Platte River from Colorado through Wyoming, Nebraska, and into Missouri River near Iowa); *Colorado v. New Mexico*, 459 U.S. 176, 178 (1982) (Vermejo River from Colorado into New Mexico and the Canadian River); *Idaho v. Oregon*, 462 U.S. 1017 (1983) (tracing path of anadromous fish from Pacific Ocean up Columbia-Snake River through Wyoming, Idaho, Washington, Oregon, British Columbia); *South Carolina v. North Carolina*, 558 U.S. 256 (2010) (Catawba River flowing from North Carolina into South Carolina).

In *Florida v. Georgia*, 138 S. Ct. 2502, 2513 (2018), the Court stated: “Where, as here, the Court is asked to resolve an interstate water dispute raising questions beyond the interpretation of specific language of an interstate compact, the doctrine of equitable apportionment governs our inquiry.” It is clear, however, from the context of the Court’s language, that the “interstate water” to which the Court referred was water in interstate rivers and streams. See 138 S.Ct. at 2513-15. See also *Virginia v. Maryland*, 540 U.S. 56, 74, n. 9 (2003) (“Federal common law governs interstate bodies of water, ensuring that the water is equitably apportioned between the States and that neither State harms the other’s interest *in the river*.”) (emphasis added).

Mississippi also acknowledges that some cases in which river water has been allocated between States involved questions of whether pumping from shallow surficial aquifers in one State directly contributing to the base flow of river water previously allocated to each state by equitable apportionment or interstate compact has denied the allocated river water to another, but importantly none of the Court’s cases involved confined groundwater which did not discharge directly to the *interstate river or stream in dispute*. See *Kansas v. Nebraska*, 135 S. Ct. 1042 (2015) (hydrologically connected to the Republican River); *Nebraska v. Wyoming*, 534 U.S. 40 (2001) (hydrologically connected to North Platte River); *Kansas v. Colorado*, 533 U.S. 1 (2001) (hydrologically connected to Arkansas River); *Nebraska v. Wyoming*, 515 U.S. 1 (1995) (hydrologically connected to North Platte River); *Kansas v. Colorado*, 514 U.S. 673 (1995) (hydrologically connected to

Colorado River); *Texas v. New Mexico*, 462 U.S. 554 (1983) (hydrologically connected to Pecos River). Those cases did *not* address groundwater independently, nor did those cases concern the mechanical pumping of groundwater in a confined aquifer similar to the one(s) in the present dispute.

Furthermore, the facts, claims, and legal issues in this case are materially different from those involved in *Kansas* and its progeny. The Court's equitable apportionment cases were premised on claims that an upstream State was taking too much water (an unfair share) *while the water was in the upstream State* (or, in the case of *Idaho v. Oregon*, too many fish while the fish were in the downstream State).<sup>15</sup> None of the cases were premised on claims that a State was capturing natural resources located beyond its boundaries, i.e., water (or fish) physically located within the boundaries of the complaining State. Indeed, the Court in *Kansas v. Colorado* was very careful to point out early in its opinion: "*This suit involves no question of boundary or of the limits of territorial jurisdiction.*" 206 U. S. at 80 (emphasis added).

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<sup>15</sup> In the Court's interstate river apportionment cases the Supreme Court balanced the equities between and among the upstream State(s) and the downstream State(s) and imposed limits on the amount of water an upstream State could take while the water was within its borders. Similarly, *Idaho v. Oregon*, 462 U.S. 1017 (1983), concerned the prospect of migrating fish in an interstate river being "overfished" while the fish were in the downstream State, thus depriving "an upstream State of the fish it otherwise would receive." *Id.* at 1024.

In contrast, Mississippi's claims *are* predicated on questions of boundary and the limits of territorial jurisdiction. The Court's equitable apportionment cases simply have no application to the unique facts of and claims in this case. Indeed, this case is one of first impression. The Court has never decided a case involving a groundwater dispute between two States in which one State was pumping groundwater across state borders out of its neighboring State's sovereign territory.

The operative facts and the legal principles in the instant case are not remotely similar to the Court's equitable apportionment cases. Mississippi's claim is that **all** groundwater in Mississippi is held by Mississippi in public trust for the use and benefit of its citizens, and it is Mississippi's duty under the Constitution to protect, preserve, and control its taking for the benefit of its citizens.; and that MLGW's intentional cross-border pumping of Mississippi groundwater without Mississippi's permission is a violation of Mississippi's sovereignty under the Constitution. None of the Court's opinions cited by the Special Master addresses, much less condones, such conduct.

Nothing in this Court's equitable apportionment cases has diminished individual State sovereign authority over groundwater found within its borders or purports to recognize any authority in the Court to authorize cross-border pumping of groundwater out of one State into another.



### **E. The Special Master Misunderstood the Constitutional Issues Raised by Mississippi and Its Arguments Regarding the Groundwater at Issue.**

In response to Defendants assertions concerning the “aquifer at issue,” Mississippi has consistently noted the geographic, geologic, and hydrologic distinctions between the Sparta Sand (located primarily in Mississippi) and the Memphis Sand (barely located in Mississippi) and the confusion and inconsistencies in Defendants’ positions.<sup>16</sup> Mississippi’s advocacy on those issues grounded in the Special Master’s Order defining the scope of the evidentiary hearing apparently diverted the Special Master’s attention from Mississippi’s Constitutional arguments repeated throughout the proceedings. For example, the Special Master stated that Mississippi’s claims are premised on the differences between Mississippi’s subsurface and

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<sup>16</sup> For example, the Sparta Sand formation and the Memphis Sand formation are found in different locations and have material differences in thickness, sedimentary grain size, and transmissivity (Tr.(Spruill) 144; J-18, pages 11-16 of 70; J-41; J-15) and are recognized in scientific literature as separate aquifers (J-71, page 1 of 1; D-174 page 4 of 21, Figure 1; J-41, pages 11-12 and 24-28 of 43; J-67, page 1 of 1); but the USGS has grouped the Sparta Sand and the Memphis Sand (along with the Lisbon formation in Alabama) into a “hydrogeologic unit” labeled by the USGS as the “Middle Claiborne aquifer.” J-18 at 15. The Special Master incorrectly concluded that “Aquifers ... are made up of units with ‘similar hydrologic characteristics,’” (Report at 12) and that “an aquifer is nothing but a collection of interconnected units.” (*Id.* at 17). An aquifer, however, is not made up of “units.” Instead, units (hydrogeological units) are made up of aquifers (or confining layers).

the subsurface of “the larger Aquifer” (Report at 17); and stated that Mississippi contends “there is a distinct hydrogeological unit underneath” Mississippi that is “within the exclusive control of Mississippi.” *Id.* at 22. Such characterizations of Mississippi’s positions are, with all due respect, simply incorrect.

Mississippi’s claims under the Constitution are not premised on subsurface complexities, differences between the subsurface of each State, “the existence of a distinct hydrogeological unit underneath” Mississippi, or even an identification of “the aquifer at issue.” Report at 17 and 22. Instead, Mississippi contends that the *only* natural resource at issue in this case is *the specific groundwater* that was in Mississippi at the time it was taken by Defendants’ cross-border pumping. Mississippi presented evidence regarding this groundwater’s entry into and creeping movement and storage within Mississippi’s subsurface to distinguish it from surface water in interstate rivers and streams. The complexities of groundwater shown in the evidentiary hearing merely demonstrate the inapplicability of the equitable apportionment cases involving interstate rivers and streams.

Regardless of “the aquifer(s)” in which it was located, the groundwater at issue was in Mississippi’s sovereign territory and was subject to Mississippi’s exclusive dominion and control under the Constitution at the time Defendants pumped it into Tennessee. Defendants simply have no lawful or equitable interest in groundwater in Mississippi and they violated Mississippi’s rights as a sovereign when they pumped

the groundwater at issue out of Mississippi without its consent by interstate compact.

**F. The Special Master's Creation of an Interstate Resource and Borderless Common for Groundwater Improperly Ignores the Parties' Respective Rights Under the Constitution.**

The phrase “interstate resource” as applied by the Special Master is not found in the Constitution or any of the Court’s opinions save one involving a restriction on interstate commerce in cantaloupes, *see Pike v. Bruce Church, Inc.*, 397 U.S. 137, 146 (1970) (use of the phrase “interstate resources” in the context of “interstate commerce”); or any federal law enacted by Congress under the Constitution. Likewise, the Special Master’s premise that the ability pump massive volumes of groundwater across the State border into Tennessee *makes* Mississippi groundwater “interstate groundwater,” Report at 31, finds no support in the Constitution or the Court’s authoritative interpretations of the Constitution. Nor does any authority exist to support the Special Master’s conclusion that groundwater residing in Mississippi for hundreds and thousands of years is “interstate” because it will “ultimately” flow out of Mississippi. Report at 11, 25. These findings import concepts that have no application. This case does not involve interstate river water rapidly flowing through multiple States on a path to the sea, or restrictions on interstate commerce. It involves groundwater in tiny pore spaces of the earth within Mississippi’s borders, where it naturally resided for thousands of years in the territory granted to Mississippi upon admission into the Union.

The fact that it has “existed” and “occurred” within the land making up Mississippi for centuries, makes it “intrastate” by definition.<sup>17</sup>

By adopting Defendants’ characterizations fashioned from unrelated concepts, and fragments of sentences and dicta taken from the Court’s decisions to create rights which do not exist the Special Master’s Recommendation would strip the separate States of their retained sovereign authority under the Constitution and create rights claimed by the Defendants which do not exist under the Constitution. It is true that State borders do not control or limit the ability of technology to manipulate groundwater movement against the natural forces of nature, but there is no such thing in the Constitution as a borderless common for groundwater, or any other subsurface resource still residing in the earth within a State.

The Special Master failed to address this fundamental question: what Constitutional clause or amendment bestows upon one State and its citizens the *right* to use modern commercial groundwater pumping technology to appropriate groundwater located in another State? The answer is “none.” The Constitution

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<sup>17</sup> *AT&T Communications v. Mountain States, Inc.*, 778 P.2d 677, 683 (Colo. 1989) (“plain and ordinary meaning” of “intrastate” is “existing within a state”) *quoting Merriam-Webster’s Collegiate Dictionary* 1186 (1986); *Florida Dept. of Revenue v. New Sea Escape Cruises, Ltd.*, 894 So.2d 954, 961 (Fla. 2005) (“the term “intrastate” is commonly construed as meaning “existing or occurring within a state”) *citing Merriam-Webster’s Collegiate Dictionary* 614 (10<sup>th</sup> ed. 1999).

does not grant Tennessee any right or interest in the groundwater found in the earth beyond its territorial boundaries. Simply capitalizing and combining the inherently ambiguous word “aquifer” with the phrase “interstate resource” does not and *cannot create legal rights that do not exist* nor diminish Mississippi’s authority over its lands and waters under the Constitution.

To further clarify, Mississippi’s complaint is not that Defendants are taking too much water from Mississippi, it is that Defendants have *no right* under the United States Constitution to take any groundwater located in Mississippi, to change the natural hydrogeologic conditions in Mississippi, or to materially diminish or damage the groundwater system underlying Mississippi to the detriment of Mississippi’s citizens. Defendants’ actions constitute a clear, intentional violation of Mississippi’s sovereignty and invasion of Mississippi’s sovereign territory. *See* Federalist No. 6 (Alexander Hamilton) (discussing wars between nations founded upon commercial motives).

#### **G. The Federal Common Law Remedy of Equitable Apportionment is Limited by the Constitution and Cannot Create Cross Border Extraction Rights.**

Instead of applying the Constitution, the Special Master transformed the federal common law *remedy* of equitable apportionment into a *right* to take groundwater from a neighboring State through cross-border grounder pumping. But remedies do not *create rights* and only exist in the context of a legal equitable interest. In *Kansas v. Colorado* the Court found an

equitable interest in the pre-existing shared use by all citizens of the territory before the States were created under the Constitution and had to create a federal common law remedy for a contingency not addressed in the Constitution, which had taken from the new States the ability to utilize force to resolve their disputes.

Such a situation is one of the few instances in which the Court is authorized to create federal common law, the purpose of which is to implement the Constitution and statutes passed by Congress, and its viability and limits are conditioned on the authority within them. *See D'Oench, Duhme & Co. v. FDIC*, 315 U.S. 447, 472 (1942) (Jackson, concurring). The body of federal common law created within this purpose consists of a collection of special rules of decision, each created by a federal court, in a few and limited instances involving a significant conflict or threat to a federal interest which justifies creation of such a special rule of decision. Such instances are few and restricted. *See Atherton v. FDIC*, 519 U.S. 213, 217-19, 224-25 (1997); *Texas Industries, Inc. v. Radcliff Materials, Inc.*, 451 U.S. 630, 640-41; (1981); *Kansas v. Colorado*, 206 U.S. 46, 79 (1907). The Court's 1907 decision in *Kansas v. Colorado* demonstrates a clear understanding of the purpose and the limitations of a federal court's authority to create federal common law.

Before discussing this 1907 decision further, it is helpful to refer briefly to the Court's earlier decision in the case which denied Colorado's demurrer objecting to the Court's jurisdiction. In the Court's *Kansas v. Colorado*, 185 U.S. 125 (1902) opinion the Court identified the dispute as one between separate States,

each sovereign over all waters within its borders, as a just cause of war by sovereign nations no longer available to the States under the Constitution. *Id.* at 140-145. The case clearly presented a significant conflict or threat to a federal interest.

The Court's 1907 opinion opened by stating "[t]his suit involves no question of boundary or of the limits of territorial jurisdiction" in clear recognition of State territorial sovereignty, 206 U.S. at 79, then expressly affirmed each State's absolute sovereign authority over all waters within its borders, and the prohibition against either State attempting to extend its sovereignty beyond its borders. *Id.* at 93, 95. The Court then explained that its authority under the Constitution to create federal common law arose from the rule of "equality of right" among sovereigns, and the fact that "[b]efore either Kansas or Colorado was settled the Arkansas river was a stream running through the territory which now composes these two states." 206 U.S. at 97-98. The Court repeatedly emphasized in these two opinions the limited scope of its creation of this remedy which did not have any impact of the sovereign authority each State retained under its borders under the Constitution. The equitable apportionment cases simply cannot be read to create cross-border groundwater pumping rights or be applied to strip States of their sovereign territorial authority.

The Special Master reasoned, nevertheless, that Mississippi cannot prevent Tennessee from taking water that is located within Mississippi's borders because a "State may not preserve solely for its own inhabitants natural resources located within its

borders.” Report at 30. The language quoted by the Special Master from *Idaho ex rel. Evans v. Oregon*, 462 U.S. 1017, 1025 (1983), an equitable apportionment case, was taken out of context and does not support the Special Master’s conclusion.

In its equitable apportionment cases, after finding that equitable apportionment was warranted, the Court has balanced the rights of the affected States and made equitable allocations that affect how much water (or salmon, in *Idaho v. Oregon*) a State could take as the water (or fish) naturally traversed the State. It is only in *that* limited equitable apportionment context that a State “may not preserve solely for its own inhabitants natural resources located within its borders.” 462 U.S. at 1025.

This case involves an entirely different set of facts and legal rights. The retained sovereignty of each State within its borders as against its neighboring states can be readily applied to groundwater. See *Rhode Island v. Massachusetts*, 37 U.S. at 733 ( “[N]either state can have any right beyond its territorial boundary.”). Indeed, the Special Master correctly held that “one State cannot reach into another State to collect water,” (Report at 29), but then incorrectly concluded that, because their wells are located in Tennessee, Defendants have not “reached into” Mississippi. Report at 29-30. Such a conclusion ignores the Court’s fundamental recognition that a State cannot do indirectly what the Constitution forbids it to do directly. *Smith v. Turner*, 48 U.S. 283, 458 (1849). See also *Stadia Oil & Uranium Co. v. Wheelis*, 251 F.2d 269, 275 (10th Cir. 1957) (“It is an old maxim of the law



that a person will not be permitted to do indirectly what he cannot do directly.”). Defendants *have reached into* Mississippi, using pumping technology to capture groundwater located in Mississippi, and thereby violated Mississippi’s sovereignty.

The Special Master’s findings presuppose that Defendants have a pre-existing right to capture without Mississippi’s permission natural resources (groundwater) located within Mississippi’s sovereign borders. *They do not.* The Special Master’s findings also presuppose that Mississippi has no right under the Constitution to exclusively control and preserve water located within its boundaries and protect that water from unauthorized (e.g., cross-border) extraction. *It does.*

#### **H. This Case Must be Decided Based on States’ Undisputed Sovereign Rights and Limits Under the Constitution.**

The respective States’ rights at issue in this case do not arise in federal common law of equity, but they arise directly under the Constitution, including the 10<sup>th</sup> Amendment. State territorial sovereignty is at the foundation of the federal system in the United States. The Court has long held that each State holds all sovereign authority of a nation within their respective boundaries, save the portion of that sovereignty they granted to the federal government. As succinctly stated in *Rhode Island v. Massachusetts*, in this context the States are foreign to each other for all but federal purposes. 37 U.S. at 719. As between two States neither State has any right beyond its territorial boundary, which represents the true line of right and

power between them, *id.* at 733, 735; and no “State can legislate for *or impose its own policy* upon another.” *Kansas*, 206 U.S. at 95 (emphasis added).

This case is not about “equitable allocation.” It is about “location” and the sovereign rights of States under the Constitution. Defendants simply have no right to groundwater located in Mississippi, no right to reach into Mississippi and engage in forced, unnatural cross-border extractions of water physically located within Mississippi’s borders, and no right to interfere with Mississippi’s exclusive jurisdiction and authority as a sovereign over water located in Mississippi. Mississippi, on the other hand, has the authority under the Constitution, and the duty under the public trust doctrine, to seek redress and obtain all appropriate remedies from this Court for Defendants’ material violations of Mississippi’s Constitutional rights.

# **I. The Special Master Also Erred by Failing to Apply the States’ Respective Statutory Proclamations of Their Rights in and to the Groundwater at Issue.**

The Special Master erred by failing to rule that Defendants’ claims in this proceeding are precluded by Tennessee law.

The Tennessee statute at issue is TN Code § 68-221-702, which provides:

Recognizing that the waters of the state are the property of the state and held in public trust for the benefit of its citizens, it is declared that the people of the state are beneficiaries of this trust

and have a right to both an adequate quantity and quality of drinking water.

In this case, however, Defendants' position (accepted by the Special Master) is that the groundwater underneath Shelby County is *not* the property of Tennessee and is *not* held by Tennessee in trust for the benefit of its citizens, but is, instead, an interstate resource, shared with Mississippi and other States who can have it if they want to capture it through pumping. Defendants simply should not be allowed to come into this Court and argue that the groundwater underlying Shelby County is a shared interstate resource when their own statutory law (§ 68-221-702) says it is not.

Furthermore, the Special Master should have applied this Tennessee statute and Mississippi's corresponding statute to resolve this dispute. As noted previously, Mississippi has likewise declared, as a sovereign State, that groundwater in Mississippi belongs to the people of Mississippi and that the "control and development and use" of that water for all beneficial purposes shall be in the State of Mississippi. Miss. Code Ann. § 51-3-1.

In resolving this dispute, this Court need not undertake to answer a question that the Parties have already answered through their own legislative pronouncements, which are consistent with each other and, therefore, dispositive. Instead, the Court should apply those laws, and the Special Master erred in failing to recommend that the Court do so.

Specifically, the Special Master should have recommended, based on the Parties' respective statutory proclamations, that the groundwater in the Middle Claiborne Aquifer is not a shared interstate resource, but instead, the Middle Claiborne groundwater located in Mississippi is subject to Mississippi's exclusive dominion and control per Miss. Code Ann. § 51-3-1, and the Middle Claiborne groundwater located in Tennessee is subject to Tennessee's exclusive dominion and control per TN Code § 68-221-702.

**J. MLGW'S Cross Border Groundwater Pumping of Mississippi Groundwater Was Unnecessary and Avoidable.**

The amount of groundwater MLGW needs for its operations has always been available within Tennessee's borders, and could have been procured by MLGW without the taking of *any* groundwater from Mississippi. As noted above (at p. 11, *supra*), the extraction of groundwater from wells in Tennessee need not encompass Mississippi groundwater. Well operators can predict the extent and depth of their cones of depression to ensure that they do not encroach upon another State's sovereign interests. *See, e.g., Tr.* 934-37.

In addition, MLGW could have obtained all the water it would ever need from the Mississippi River, *see* J-60, page 33 of 40, (or used the River to supplement its groundwater operations) and imposed no impacts on Mississippi at all; or MLGW could have, instead of placing its wells right next to the Mississippi border, placed its well fields at locations to the north

and east of Memphis and captured all the water it needed without taking groundwater from Mississippi. The massive, extremely thick Memphis Sand covers the entirety of western Tennessee, extending continuously from the Tennessee-Mississippi border to the Tennessee-Kentucky border. See J-63, page 6 of 36 (“The Memphis Sand of the Claiborne Group of Tertiary age underlies approximately 7,400 square miles in western Tennessee.”); J-63, page 8 of 36 (showing the “area of occurrence” of the Memphis Sand in western Tennessee); J-63, page 11 of 36 (showing thickness of Memphis Sand from Memphis to Kentucky border); J-63, page 6 of 36 (“The Memphis aquifer has much potential for future uses, particularly at places outside the Memphis area.”); J-4, page 49 of 68 (“The middle Claiborne aquifer has potential for increased development of large ground-water supplies away from areas already being heavily pumped in the northern area (north of the transition zone in the lower Claiborne confining unit).”); Tr. (Waldron) 937-38 (Tennessee expert admits there is a significant amount of high-quality groundwater north of Memphis.); Tr. (Spruill) 219 (MLGW could have placed its wells further north and avoided impact on Mississippi).

MLGW did none of these things, but instead, simply “pumped away” and intentionally captured groundwater from Mississippi, with no regard to the adverse effects of its operations on Mississippi’s groundwater storage and with no concern for Mississippi’s rights as a sovereign under the Constitution.

### **K. This Court Should Fashion Remedies Appropriate to the Unique Facts of This Case.**

The question of whether citizens of one State may, through mechanized pumping, intentionally take large volumes of groundwater located in a neighboring State without its neighbor's permission, is unsettled. This case raises the issue of whether the Court is bound by artificial restrictions on the scope of its equitable powers (*i.e.*, equitable apportionment) or whether the Court has the obligation and flexibility to fashion a remedy (or remedies) upholding and protecting the neighboring State's (here, Mississippi's) sovereign rights under the Constitution.

This Court's authority and the sovereign rights of Mississippi are not limited in the manner as found by the Special Master. Rather, the Court may grant any relief it determines to be appropriate:

The Constitution gives this Court original jurisdiction to hear suits between the States. See Art. III, § 2. Proceedings under that grant of jurisdiction are "basically equitable in nature." *Ohio v. Kentucky*, 410 U.S. 641, 648, 93 S.Ct. 1178, 35 L.Ed.2d 560 (1973). When the Court exercises its original jurisdiction over a controversy between two States, it serves "as a substitute for the diplomatic settlement of controversies between sovereigns and a possible resort to force." *North Dakota v. Minnesota*, 263 U.S. 365, 372–373, 44 S.Ct. 138, 68 L.Ed. 342 (1923). ... In this singular sphere, "the court may regulate and mould the process it uses in such manner as in its judgment will best promote the

purposes of justice.” *Kentucky v. Dennison*, 24 How. 66, 98, 16 L.Ed. 717 (1861).

*Kansas v. Nebraska*, 574 U.S. 445, 453-54 (2015).

This Court should “mould” a decree that *preserves* the sovereign rights of Mississippi as required by the Constitution, awards to Mississippi all such remedies as are appropriate and just, and correspondingly recognizes States’ rights to protect their resources, thereby providing them with meaningful incentives to resolve their disputes by mutual agreement. Accordingly, Mississippi seeks to receive from the Court all appropriate remedies for these violations of Mississippi’s sovereignty, including:

- A declaration affirming Mississippi’s sovereignty over all groundwater located within its borders;
- A declaration affirming Mississippi’s exclusive sovereign authority to protect, preserve, regulate, and control all groundwater located within its borders, subject only to laws passed by Congress;
- Injunctive relief, including such changes to MLGW’s operations as may be necessary to shrink the cones of depression (cease or minimize MLGW’s cross-border extractions); and/or
- Monetary damages for groundwater knowingly and wrongfully taken by Defendants without right or permission.

**L. The Required Application of the Constitution Will Promote the Preservation and Protection of Groundwater.**

Finally, Mississippi respectfully suggests that its position would, consistent with the Constitution, best promote the management, preservation, and protection of groundwater, a most valuable resource.

The Special Master's position would permit every State to take as much groundwater from a neighboring State as it may desire, even over its neighbor's protestations. In other words, groundwater is shared by all States and is free for the taking by any State as long as the State keeps its wells within its own borders.

Such an outcome would undermine policies designed to encourage preservation and protection of groundwater. Instead, it will incentivize, encourage, and embolden water purveyors/landowners in one State to place water wells right next to another State's border and withdraw massive amounts of groundwater located in the neighboring State. The neighboring State would have no judicial recourse to protect its resources, at least until the affected aquifer is substantially harmed (which may be irreversible) and the aquifer is equitably apportioned by this Court (if attainable). Under Defendants' proposed outcome, one State's prudent groundwater management and conservation practices could be easily nullified by a neighboring State's intentional cross-border extractions.

The Special Master's finding that an aggrieved State may only seek equitable apportionment is an assertion that the Court is the ultimate regulator of the



nation's groundwater. Mississippi respectfully disagrees. Further, an informed and workable equitable apportionment of this hidden natural resource is not likely achievable, as a practical matter, given that (1) the nation's groundwater resources are vast in geographic scope, laterally and vertically (*see* P-6 (Map of Principle Aquifers of the United States)), and (2) the geologic formations, hydrologic characteristics, and hydrogeologic interconnections within and among those resources are extremely complex and fraught with heterogeneity (including material variations in geology and water depths, transmissivity, pressure, yield, and quality), uncertainty, and "unknowns."<sup>18</sup>

Mississippi's position is fully consistent with the public trust doctrine. States have traditional and primary power over water within their borders, and

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<sup>18</sup> The USGS, for example, has noted that the challenges of groundwater allocation, even by agreement, include: "trying to define the aquifer itself;" "unlike rivers, ground-water flow cannot be measured directly;" "the lag time between development stresses and resulting regional responses is very much longer in a ground-water system than in a surface-water system;" "the allocation of existing ground-water flow rates may not provide a logical basis for distributing or allocating the development of the ground-water resource;" "there are serious measurement problems" in head distribution data; "hydraulic head also varies with depth and with time at any given location;" additional questions arise from the impacts of "withdrawals from other formations;" "possible effects of ground-water development on the stream flow and spring discharge" are difficult to "define precisely and accurately;" and "an interstate ground-water compact may require very precise, legally acceptable definitions that may imply a degree of measurement accuracy that cannot be technically or economically provided." J-51, pages 5, 6, 8-12 of 12.

courts have consistently recognized that those waters are held in trust by the State for the public, with such authority imposing on the State a duty to control and conserve water for the benefit of all its inhabitants. See *City of Trenton v. New Jersey*, 262 U.S. 182, 184-85 (1923). Because of vast differences within the local natural geology and resulting hydrogeology of groundwater resources, each State is in the best position to manage, preserve, and protect the groundwater resources within its borders. Upholding the public trust authority of the States – the only proper legal result under the Constitution – will incentivize each State to better control groundwater production by their citizens and governmental subdivisions and encourage/mandate comity between neighboring States.

This Court has often expressed a preference for States to resolve their disputes by “mutual accommodation and agreement.” *Oklahoma v. New Mexico*, 501 U.S. 221, 241 (1991). But why would any State such as Tennessee enter an interstate compact when it is free to take all the groundwater from a neighbor it desires until the neighbor files an original proceeding in this Court and obtains an equitable apportionment decree? An affected State could, of course, get the offending State’s attention by engaging in a “water war,” but that would lead to groundwater waste. On the other hand, *both* States will have an incentive to negotiate and enter an agreement relating to cross-border extractions if their respective rights to control, protect, and preserve the groundwater that is located within their respective boundaries are upheld.

## VI. CONCLUSION

The Court should decline to adopt the Special Master's recommendation, hold that Mississippi is entitled to relief, and order further proceedings.

Finally, the Special Master recommended that the Court dismiss Mississippi's complaint with leave to file an amended complaint seeking equitable apportionment. Report at 2 and 32. The scope of the evidentiary hearing was limited to the issue of whether the water at issue is an interstate resource. D.E. 56 (Oct. 11, 2016 Order at 1). The Special Master's recommendation that Mississippi's action should be dismissed with prejudice in the absence of filing an amended complaint for equitable apportionment at this time, Report at 2, should not be adopted by the Court. Mississippi disclaimed equitable apportionment in its Complaint, but if the Court were to hold that equitable apportionment is Mississippi's sole remedy, Mississippi's rights to pursue equitable apportionment in this action or in a future proceeding must be fully preserved.

Respectfully submitted,

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