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 BILL OF COMPLAINT

MEMORANDUM OF DECISION ON DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

HON. EUGENE E. SILER, JR.
Special Master
United States Court of Appeals for
the Sixth Circuit
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November 29, 2018

I. INTRODUCTION

Beneath the surface in Mississippi sit billions of gallons of freshwater. The groundwater has resided there for millennia, stored in rock formations as part of a subterranean aquifer. Over those thousands of years, the water has trudged along slowly, moving in different directions and, at times, crossing the border into Tennessee and other states. But only a fraction of the water has ever left its home state—at least naturally. Without man's intervention, the underground Aquifer in Mississippi would be awash. And much of the water would remain in the Magnolia State for the foreseeable future.

But man has intervened. Just north of Mississippi, on the banks of the mighty river, Memphis Light, Gas & Water Division ("MLGW") has been sucking water out of the ground for decades. MLGW does not cross the border into Mississippi, but its pumping causes water to migrate underground. Water that would otherwise stay in Mississippi is now rushing into Tennessee.

Mississippi wants it to stop. It filed this Supreme Court Original Action, which has been assigned to the Special Master for consideration. MLGW and its codefendants—the City of Memphis and State of Tennessee—have filed a Motion for Summary Judgment, arguing that no genuine dispute exists that (1) the water at issue is interstate in nature, (2) equitable apportionment is the exclusive remedy for interstate water disputes when States have not entered into a compact, (3) no compact exists here, and (4) Mississippi has not sought equitable apportionment. So Defendants argue they must prevail as a matter of law.

Mississippi maintains that the Defendants have it all wrong. The problem, Mississippi contends, is definitional: The parties are using different baselines to define *the water at issue*. Although Defendants refer to the entire eight-state Mississippi Embayment, Mississippi argues

that this suit is solely about water that has resided within—and will remain in—Mississippi's boundaries for thousands of years. And that water is *intra*state in nature, meaning the state need not seek equitable apportionment. Mississippi's message is clear: The water is ours.

The previous Memorandum of Decision on Defendants' Motion for Judgment on the Pleadings addressed most of the arguments the parties raise in the current motion. And the Special Master remains convinced that Defendants present a strong case. But because the Federal Rules of Civil Procedure are only guides in Original Action cases, this case will proceed to an evidentiary hearing to build a robust record for the Supreme Court's review.

II. FACTS AND PROCEDURAL BACKGROUND

The previous Memorandum Decision provides the relevant background. Dkt. No. 55 ("Mem. Dec."):

> This is a dispute over groundwater near the border of Mississippi and Tennessee. (*See* Compl. ¶ 14.) According to the complaint, the "groundwater at issue was naturally collected and stored in a distinct deep sandstone geological formation . . . sandwiched between upper and lower clay formations [that] are impermeable, or of very low permeability." (*Id.* at ¶ 15.) The Aquifer "begins at a surface outcrop within [north] Mississippi[] and descends with an east-to-west/southwest slope while thickening as it moves toward the Mississippi River." (*Id.*) "Originally, . . . rainwater falling within Mississippi's current borders collected on the formation outcrops[,] was drawn by gravity into and down the natural east-to-west/southwest dip of the formation at a rate of about an inch a day[,] and was stored as groundwater within the territorial borders of Mississippi." (*Id.* at ¶ 16.) As a result, Mississippi alleges, the Aquifer under became "saturated with high[-]quality groundwater stored as a fairly constant volume residing under significant hydrostatic pressure within Mississippi's borders." (*Id.* at ¶ 17.) Under Mississippi's account, this groundwater "is a finite, confined intrastate natural resource" that "would never be available within Tennessee's territorial borders" under natural conditions. (*Id.*) Nevertheless, Mississippi admits that "the Sparta Sand formation . . . extends into western Tennessee" and that "the Memphis Sand Aquifer was supplied in large part by the Sparta Sand." (*Id.* at ¶¶ 18, 22.)
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> Among other things, MLGW provides water utility services to residents of Memphis, Tennessee. (*See id.* at ¶ 18.) For many years, MLGW has pumped groundwater from the Aquifer. (*Id.*) "Between 1965 and 1985, . . . MLGW

significantly expanded its groundwater pumping operations from five to nine well fields . . . ." (*Id.* at ¶ 19.) In addition, it increased its pumping during that time from 72 million gallons a day ("MGD") to more than 131 MGD. (*Id.*) At the Lichterman well field, which is located within three miles of Mississippi's border, MLGW increased its pumping from approximately 4 MGD to over 21 MGD. (*Id.*) During this time, "MLGW also developed two additional well fields within three miles of the Mississippi border, Davis and Palmer, which were collectively pumping approximately 11.5 MGD." (*Id.*) Mississippi alleges that MLGW's pumping is "permanently taking between 20 and 27 MGD of Mississippi's natural groundwater storage out of the Sparta Sand." (*Id.* at ¶ 22.)

In 2005, Mississippi filed suit against Memphis and MLGW (collectively, the "Memphis Defendants") in the United States District Court for the Northern District of Mississippi, pleading conversion, trespass, unjust enrichment, constructive trust, and nuisance claims related to MLGW's pumping. Amended Complaint at 9–15, *Hood ex rel. Mississippi v. City of Memphis, Tenn.*, No. 2:05-cv-00032-GHD (N.D. Miss. Oct. 5, 2006) (ECF No. 112); Complaint at 1, *Hood ex rel. Mississippi v. City of Memphis, Tenn.*, No. 2:05-cv-00032-GHD (N.D. Miss. Oct. 5, 2006) (ECF No. 2). In 2008, the district court dismissed the case for failure to join a necessary party, Tennessee, under Rule 19 of the Federal Rules of Civil Procedure. *Hood ex rel. Mississippi v. City of Memphis, Tenn.*, 533 F. Supp. 2d 646, 650 (N.D. Miss. 2008). The district court reasoned that "the doctrine of equitable apportionment has historically been the means by which disputes over interstate waters are resolved," that the Aquifer had never been apportioned, and that, without an apportionment, it could not "afford relief to the Plaintiff and hold that the Defendants are pumping water that belongs to the State of Mississippi, because it has not yet been determined which portion of the aquifer's water is the property of which State." *Id.* at 648. According to the court, awarding relief would necessitate "engaging in a *de facto* apportionment of the subject aquifer," but such relief "is in the original and exclusive jurisdiction of the United States Supreme Court because such a dispute is necessarily between the State of Mississippi and the State of Tennessee." *Id.*

On appeal, the Fifth Circuit affirmed. *Hood ex rel. Mississippi v. City of Memphis, Tenn.*, 570 F.3d 625, 627 (5th Cir. 2009). The panel found that "the district court made no error of law as to the necessity of equitably apportioning the Aquifer" because it "is an interstate water source, and the amount of water to which each state is entitled from a disputed interstate water source must be allocated before one state may sue an entity for invading its share." *Id.* at 629–30 (citing *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92, 104–05 (1938)). The court found that the suit implicated Tennessee's interest in the Aquifer and that, because equitable apportionment was required, the district court did not err in "conclu[ding] that Tennessee's presence in the lawsuit was necessary to accord complete relief to Mississippi and Memphis." *Id.* at 631. Tennessee was a required party, the court determined, and its joinder would "depriv[e] the district court of subject-matter jurisdiction because a suit between

Mississippi and Tennessee for equitable apportionment of the Aquifer implicates the exclusive jurisdiction of the Supreme Court under 28 U.S.C. § 1251(a)." *Id.* at 632. Therefore, dismissal was appropriate. *Id.* at 632–33.

In reaching this conclusion, the Fifth Circuit rejected Mississippi's argument that "it owns a fixed portion of the Aquifer because it controls the resources within its state boundaries." *Id.* at 630. The panel reasoned that "[t]he Supreme Court has consistently rejected the argument advanced by different states, and advanced by Mississippi in this lawsuit, that state boundaries determine the amount of water to which each state is entitled from an interstate water source." *Id.* (citing *Hinderlider*, 304 U.S. at 102).

Mississippi filed a petition for certiorari, which the Court denied. *Mississippi v. City of Memphis, Tenn.*, 130 S. Ct. 1319 (2010). Contemporaneously, Mississippi also moved the Court for leave to file a bill of complaint. The Court denied this motion without prejudice.

On June 6, 2014, Mississippi filed a motion for leave to file a bill of complaint in the instant matter. Tennessee and the Memphis Defendants opposed the motion, as did the United States, acting as amicus curiae at the Court's invitation. The Court granted Mississippi leave to file its complaint, and Tennessee and the Memphis Defendants subsequently filed answers.

In its complaint, Mississippi claims that, "[t]hrough its water well development and mechanical pumping operations," MLGW has, without permission, "forcibly siphoned into Tennessee hundreds of billions of gallons of high quality groundwater owned by Mississippi and held in trust by Mississippi for its people." (Compl. ¶ 23.) According to Mississippi, this groundwater "would have never under normal, natural circumstances been drawn into Tennessee or available to Tennessee," and MLGW's "pumping is intended to and does pull Mississippi's groundwater out of natural storage in a northward direction, altering the water's natural east-to-west path." (*Id.* at ¶ 24.) Mississippi maintains that this pumping, which utilized "modern . . . technology," removed its groundwater "at an accelerated velocity substantially in excess of the water's natural seepage rate." (*Id.*) The complaint alleges that this phenomenon "is evidenced by a substantial drop in pressure and corresponding drawdown of stored water in the Sparta Sand in Mississippi in a pattern covering substantially all of DeSoto County in northwest Mississippi across the state border from Memphis." (*Id.* at ¶ 25.) Moreover, Mississippi claims that MLGW's pumping has created a hydrologic feature known as a "cone of depression" that extends into north Mississippi. (*Id.* at ¶¶ 25, 30.) As a result, Mississippi contends, "groundwater is being drawn down more rapidly than the Sparta Sand in north Mississippi can be recharged or replenished," and "water wells located in the Sparta Sand formation in Mississippi must now be drilled and pumps lowered to substantially greater depths," thereby imposing greater costs on the citizens of Mississippi who rely on the Aquifer for their groundwater. (*Id.* at ¶ 54(b).)

As for Memphis and Tennessee, Mississippi contends that they oversaw MLGW's pumping. (*Id.* at ¶ 19.) Specifically, the complaint avers that, "[a]t all relevant times, Tennessee has supervised, authorized[,] and regulated the construction, operation, and maintenance of Memphis-MLGW's public water system, including all features relating to quantity and source of water supply." (*Id.* at ¶ 21.) Mississippi claims that this control "extends to the location and drilling of water wells and the withdrawal of groundwater from MLGW wells." (*Id.*)

Seeking relief under Article IV, Section 3, Clause 1 of the United States Constitution, the complaint requests a "declaratory judgment establishing Mississippi's sovereign right, title[,] and exclusive interest in the groundwater stored naturally in the Sparta Sand formation underlying Mississippi which would not, absent Defendant[s'] pumping, be available to Defendants." (*Id.* at ¶ 40.) This declaration would be to the effect that

> as between Mississippi and Tennessee, (a) since its admission into the United States, Mississippi has owned and continues to own all right, title[,] and interest in groundwater stored naturally in the Sparta Sand formation underneath Mississippi's borders which does not cross into Tennessee under natural predevelopment conditions; and (b) since its admission as a State into the United States, Tennessee has owned and continues to own all right, title[,] and interest in groundwater located naturally in the Sparta Sand formation underneath Tennessee's borders which does not cross into Mississippi under natural conditions.

(*Id.* at ¶ 46.) In addition to declaratory relief, Mississippi seeks damages for the value of the groundwater taken from within its borders, estimated at "not less than $615 million." (*Id.* at ¶ 55.) Alternatively, the complaint claims that the "Defendants have obtained benefits by acts of trespass or conversion or comparable tortious interference with Mississippi's protected interests in tangible property" and requests "restitution for the value of all groundwater wrongfully taken from Mississippi." (*Id.* at ¶ 56.)

Mississippi does not, however, plead a claim for equitable apportionment in the alternative. Rather, the complaint repeatedly and specifically maintains that equitable apportionment does not apply in this action. (*See id.* at ¶¶ 38, 48–50.) Mississippi draws a distinction between the Aquifer's "geological formation on the one hand," which it admits underlies both Mississippi and Tennessee, and, "on the other hand, the source, location[,] and hydrologic characteristics of the groundwater stored in the formation under natural conditions." (*Id.* at ¶ 50.) According to the complaint, the water Mississippi brings suit over "is *neither* interstate water *nor* a naturally shared resource" because the "Defendants must mechanically pump the water from underneath Mississippi's borders in order to

> produce and use it." (*Id.*) As such, Mississippi claims that Tennessee has no right to the water and, therefore, equitable apportionment does not apply. (*Id.*)
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> On November 10, 2015, the Court appointed the undersigned as Special Master, and an initial conference was held on January 26, 2016. Following the initial conference, the parties filed an agreed case management order permitting the defendants to file motions for judgments on the pleadings.
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> Mem. Dec. at 1-7.

While noting that Mississippi's "complaint appears to fail to plausibly allege that the Sparta Sand aquifer ("Aquifer") or the water in it is not an interstate resource[,]" the Special Master denied Defendants' Motion for Judgment and instead "err[ed] on the side of over-inclusiveness." *Id.* at 1. The Special Master determined that "holding an evidentiary hearing on the limited—and potentially dispositive—issue of whether the Aquifer is, indeed, an interstate resource is appropriate." *Id.*

After denying Defendants' motion, the Special Master issued a Case Management Plan in October 2016, which required several amendments. Dkt. Nos. 57, 58, 59, 60, 61, 62, 63. The parties then filed a joint statement of stipulated and contested facts and proposed pre-hearing scheduling orders Dkt. Nos. 64, 65, 66, 67. In April 2018, the Special Master issued a Corrected Pre-Hearing Scheduling Order, allowing the parties to file dispositive motions and setting a hearing for January 2019 at the United States District Courthouse in Nashville. Dkt. No. 69.

The parties engaged in discovery on the limited issue identified by the Special Master: whether this case involves an interstate resource. After discovery, Defendants filed their Motion for Summary Judgment in June 2018. Dkt. No. 70. The parties fully briefed the motion, making it ripe for the Special Master's review. Dkt. Nos. 71, 72.

III. MOTION BEFORE THE SPECIAL MASTER

Defendants raise four reasons why this case involves an interstate resource, thus requiring equitable apportionment.

First, they contend that the Aquifer underlies eight states, which, by itself, makes this a case about an interstate resource. Defs.' Mot. at 5-7. Second, Defendants argue that because MLGW's pumping entirely within the state of Tennessee causes water to move across state lines, this is an interstate dispute. *Id.* at 7-9. Third, Defendants argue that even without pumping, groundwater in the Aquifer naturally flows, albeit slowly, across state lines and into Tennessee. *Id.* at 9-11. Finally, Defendants contend that the water in the Aquifer is interstate because it is hydrologically connected to interstate surface waters. *Id.* at 11-12. Defendants argue that each theory makes the water and Aquifer interstate in nature, and since Mississippi has specifically rejected equitable apportionment, Defendants argue there is nothing left for the court to do.

In response, Mississippi attempts to crystalize its position. Mississippi concedes that it does not exercise territorial sovereignty over any and all water within the Aquifer. *See* Pl.'s Resp. at 10-11. Nor does Mississippi dispute that *some* of the water within the Aquifer might be interstate in nature—including some water that begins in Mississippi's borders. *See id.* at 7 n.8, 14. The problem, as Mississippi sees it, is one of conflation: While Defendants refer to the "Aquifer" and the "water" as a single, general, interstate resource, Mississippi focuses on water that has resided below Mississippi soil for thousands of years and would remain for millennia without MLGW's pumping. And *that*, Mississippi argues, is the water at issue—not *all* the water in the Mississippi Embayment.

No doubt, Mississippi's arguments require some novel line drawing. But Mississippi urges such distinctions. First, Mississippi argues there is no "one Aquifer" at issue; instead,

there are several distinct geological formations containing water in tiny rock spore formations. The fact that, at times, people refer to a single Aquifer underlying eight states does not extinguish the real differences between the "water at issue" and the broader Embayment. Second, although Mississippi admits that MLGW pumps entirely within another state, and that MLGW's pumping causes water to cross state lines, this does not make the water interstate in nature because it does not amount to flow by the "agency of natural laws," as required by the Supreme Court. Indeed, Mississippi argues, the water flow is entirely unnatural because it occurs only when MLGW pumps, not in the absence of pumping. This raises Mississippi's third argument: Without pumping, Mississippi claims, the water at issue would remain within its boundaries for millennia. Absurd, Mississippi contends, to conclude water is "interstate" because it might cross a state line 20,000 years from now. And finally, Mississippi argues that although *some* groundwater is connected to interstate surface water, the water at issue is not—it will stay in Mississippi for generations. Summed up, Mississippi's position hinges on whether the Special Master can limit this case only to water that would remain in Mississippi for thousands of years but for MLGW's pumping. And that water—water that would not leave Mississippi for centuries—cannot be interstate in nature, according to Mississippi.

IV. LEGAL STANDARD

In Supreme Court original cases, the Federal Rules of Civil Procedure are not binding, but they "may be taken as guides." Supreme Court Rule 17(2); s*ee Alabama v. North Carolina*, 560 U.S. 330, 344 (2010). Under the familiar Rule 56 standard, a court shall grant summary judgment when "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). In a typical civil case, the moving party bears the burden of establishing an absence of genuine issues of material fact. *See Celotex Corp*

v. Catrett, 477 U.S. 317, 323 (1986). Then, the nonmoving party must point to specific facts demonstrating a genuine issue for trial. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 256-57 (1986). In evaluating summary judgment motions, courts draw all reasonable inferences in favor of the nonmoving party. *See Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986).

V. DISCUSSION

Mississippi and Tennessee focus on four theories, which will be referred to as (1) The Aquifer Theory, (2) The Pumping Effects Theory, (3) The Natural Flow Theory, and (4) The Surface Connection Theory. Defendants argue that each independently establishes that this case involves an interstate resource. Defendants further contend that because no compact exists between the parties, equitable apportionment is the only available remedy involving interstate waters. Mississippi counters that each theory supports the opposing view—that is, the water at issue is intrastate. Plaintiff has also referenced the equal-footing doctrine and a nuisance theory. Finally, Mississippi points out that the Supreme Court has never held that equitable apportionment applies to such a groundwater dispute and the Special Master should not do so here. But the Special Master already concluded that equitable apportionment is appropriate if this case involves an interstate resource. *See* Mem. Dec. at 20. Indeed, the interstate character of the water will be the focus of the evidentiary hearing, so we first address whether a genuine dispute exists as to that issue.

(1) The Aquifer Theory

The Aquifer is an underground formation that spans eight states. What else, if not an eight-state formation, Defendants argue, could constitute an interstate resource?

So begins Mississippi's definitional attack. In its view, Defendants refer to the wrong Aquifer. No one disputes that *an* Aquifer underlies at least parts of Mississippi and Tennessee. The disagreement is about how many Aquifers exist, by what name, and which one is at issue.

Defendants argue that Mississippi has *always*—since this litigation began in 2005—"taken the position that Memphis Sand and Sparta Sand were different names for the same resource—the Aquifer at issue in this case." Defs.' Mot. at 12. But now, Defendants claim, Mississippi has—all the sudden—changed positions. Plaintiff now views the underground hydrology as containing at least two distinct, but interconnected, Aquifers: the Sparta Sand and the Memphis Sand. Defendants admit that people often use both names to refer to the Aquifer—in addition to other names such as the "Middle Claiborne Aquifer"—but they all refer to the same thing: the Aquifer in this case. Even the United States Geological Survey refers to the "Sparta-Memphis aquifer" as the "most widely used aquifer for industry and public supply in the Mississippi embayment in Arkansas, Louisiana, Mississippi, and Tennessee." Defs.' Ex. 1.

Not only is Mississippi's theory wrong, Defendants argue, but Mississippi *itself* has admitted and agreed that only one Aquifer exists. Defs.' Mot. at 13. First, Defendants point to Mississippi's response to Defendants' Request for Admission No. 1, where Mississippi stated "that the general geologic formation known as the Sparta Sand underlies several states, including Mississippi, Tennessee, and Arkansas." Defs.' Ex. 18 at 2. In addition, David Wiley, Mississippi's expert, conceded that it was "not really disputed" and "pretty well agreed upon by scientists" that the Aquifer in this case sits underneath multiple states. Defs.' Ex. 7, Wiley Dep., 11:5-8, 12:4-13:12. Finally, Defendants argue that all experts and reports in this case state that the Aquifer underlies multiple states. Defs.' Mot. at 6, n.3 (citing exhibits). This "eight-state geological footprint, by itself," Defendants argue, "confirms that it is an interstate resource." *Id.*

at 7. So, Defendants claim, this case involves an interstate Aquifer. Thus, equitable apportionment applies. And because Mississippi has abandoned equitable apportionment, the Special Master cannot provide any relief. Case closed.

In Mississippi's view, things underground are not so simple. The rocks and deposits sitting below the surface formed over millions of years and vary in thickness, permeability, and other characteristics; the geology is "complex and diverse." Pl.'s Resp. at 5. And, if nothing else, this is not a case for oversimplification. Yes, at times, experts and witnesses may have discussed a single Aquifer, but such references, Mississippi contends, are simply a shorthand way of referring to complicated geological formations; they certainly do not settle the issue. And, Plaintiff claims, "the Sparta Sand and the Memphis Sand are consistently recognized as separate geologic formations and aquifers." Pl.'s Resp. at 5. After all, the names of the Aquifers "vary significantly in different states and in local and regional studies," according to Mississippi.

Here is how Mississippi describes those differences: First, there is the Memphis Sand Aquifer, which lies underneath Tennessee and extends a few miles into Mississippi. Pl.'s Resp. at 5-6. In Mississippi, the Memphis Sand Aquifer collides with the thinner Sparta Sand Aquifer. *Id.* at 6. That is where the Memphis Sand "disappears" and "several distinct geological and hydrological units" with unique characteristics come into existence. *Id.* The Memphis Sand is deeper and thicker than these other formations. *Id.*; *see* Pl.'s Ex. 8, Spruill Rept. at 16 (describing the difference between the Sparta Sand and Memphis Sand); Pl.'s Ex. 9, Arthur and Taylor Rept., at 111, Figure 5; Pl.'s Ex. 10, Clark and Hart Rept., at 4-9. The "Aquifer," then, is in fact a *group* of distinct formations, which includes the Memphis Sand and Sparta Sand. Pl.'s Resp. at 11. Sometimes, Mississippi argues, people lump the Aquifers together, which "has led

to confusion," but the two have "different locations, geologic properties, thickness, and hydrologic characteristics." Pl.'s Resp. at 11 n.12.

Regardless, Mississippi argues the multiple-Aquifer dispute is beside the point. It amounts to a red herring because Mississippi cares only about a *portion* of the water that has resided in, and would remain in, Mississippi for thousands of years. *Id.*. at 11-12. The fact that the Memphis Sand extends a few miles into Mississippi where it collides with the Sparta Sand "does not mean that groundwater has ever flowed in any meaningful quantities from Mississippi north into Tennessee under natural conditions." *Id.* Mississippi has maintained all along, that "[t]he groundwater at issue in this case underlies and is confined in Mississippi only under natural conditions and is an intrastate natural resource." Defs.' Ex. 18 at 2, Pl.'s Resp.. to Defs.' First Set of Req. for Admiss. Other water is irrelevant to Mississippi. So too, then, is the dispute over the number of Aquifers.

The Special Master acknowledged this argument in his Memorandum Decision denying the Motion for Judgment on the Pleadings. There, the Special Master concluded that "no Supreme Court decision appears to have endorsed one State suing another State, without equitable apportionment, for the depletion of water that is part of a larger interstate resource by limiting its claims to a specific portion of the water." Mem. Dec. at 32. And because Mississippi had conceded that the Sparta Sand extends into Tennessee, that the Memphis Sand is "supplied in large part by the Sparta Sand," and that natural seepage causes water to move between Mississippi and Tennessee, the water at issue is likely interstate in nature. Mem. Dec. at 32 (quoting Compl. ¶¶ 18-19, 22-24). Thus, the Special Master determined that the "complaint appears to have failed to plausibly allege that the water at issue is not interstate in nature." *Id.*

Mississippi has presented nothing to alter the Special Master's position. To adopt Plaintiff's view would require the Special Master to ignore the Aquifer's potential interstate character and focus solely on the Mississippi-based water within the Aquifer. That line-drawing finds no support in the case law. If the water Mississippi claims is part of a larger interstate resource—such as an interstate Aquifer—then the water is likely interstate in nature. But on that issue, we have a lack of clarity: Sometimes people refer to one Aquifer with the same name; other times, people use different names for the same Aquifer, and still other times people might be differentiating between what they suspect are different Aquifers. Thus, a genuine dispute exists regarding the extent of the Aquifer at issue and whether it constitutes an interstate resource. So Defendants cannot win summary judgment on this argument.

(2) The Pumping Effects Theory

When MLGW pumps in Tennessee, groundwater in Mississippi crosses state borders. This is, in fact, the basis of Mississippi's claim. Compl. ¶¶14, 16-17, 19, 22-24.

But does the *effect* of pumping make the water interstate in nature? Again, the Special Master discussed this in the ruling on the Motion for Judgment on the Pleadings. *See* Mem. Dec. 29. There, the Special Master noted that "[t]he fact that a State's actions deplete the quantity of water available in another State is the basis of many—if not all—interstate water disputes." *Id.* at 29. "[T]he fact that Mississippi has less groundwater available to it than it would have in the absence of MLGW's pumping does not tend to show that the relevant water lacks an interstate character." *Id.* In short, "[i]f a body of water is such that the removal of water within a State's borders can have a direct effect on the availability of water in another State, the resource is likely interstate in nature." *Id.* at 31.

In reaching this conclusion, the Special Master cited *Kansas v. Colorado*, where the Supreme Court ruled that when "the action of one State reaches through the agency of natural laws into the territory of another State, the question of the extent and the limitations of the rights of the two states becomes a matter of justiciable dispute between them." 206 U.S. 46, 97-98 (1907). The Special Master also highlighted the fact that equitable apportionment cases share "the same principle that animates many of the Court's Commerce Clause cases: a State may not preserve solely for its own inhabitants natural resources located within its borders." Mem. Dec. at 31 (quoting *Idaho ex rel. Evans v. Oregon*, 462 U.S. 1017, 1025 (1983)). Commerce Clause and equitable apportionment precedent "evince a functional approach" in determining whether a water source has an interstate character. Mem. Dec. at 31.

Defendants seize on this language and argue that "through the natural laws of hydraulics, pumping groundwater from any well creates a 'cone of depression'" that causes water to flow toward the pump. Defs.' Mot. at 8; Defs.' Ex. 14, Heath Rept., at 30. Mississippi admits as much because David Wiley, Mississippi's own expert, testified that pumping in both states had created a cone of depression. Defs.' Ex. 7, Wiley Dep., 87:6-16, 87:21-88:1. And that cone has caused water to flow toward the pump and into Tennessee. Defendants contend that this epitomizes a State reaching "through the agency of natural laws into the territory of another state." *Kansas*, 206 U.S. at 97-98. Thus, Defendants argue, there are strong "hydrological and geological connections between the groundwater in Memphis and that in Mississippi." Mem. Dec. at 36; Defs.' Mot. at 9. Equitable apportionment is required.

But this is not the "agency of natural laws" that *Kansas v. Colorado* references, according to Mississippi. Pl.'s Resp. at 13. To the contrary, Mississippi claims that pumping groundwater amounts to an *unnatural* action. Pause and consider Tennessee's argument: Because the natural

geology of the Aquifer allows water to flow into Tennessee once Defendants begin pumping, the water is interstate. In other words, according to Tennessee, equitable apportionment applies because no natural condition *stops* the water from flowing into Tennessee once MLGW begins pumping. This, Mississippi contends, cannot be: The absence of a barrier in the Aquifer "to counteract Defendants' technological manipulation of the natural conditions does not change Mississippi's rights in and sovereignty over the naturally occurring groundwater residing only within its territory under natural conditions." Pl.'s Resp. at 13-14. Mississippi argues that under natural conditions, the water would stay in Mississippi, but MLGW's pumping has "altered those natural conditions and pulled Mississippi groundwater into Tennessee." Pl.'s Resp. at 7 n.9. Mississippi finds Defendants' argument "convoluted and absurd." Pl.'s Resp. at 13.

As Tennessee points out in its reply, Mississippi homes in on the wrong target. After all, nearly every water dispute involves some type of "unnatural" action by a state. *See, e.g.*, *Colorado v. New Mexico*, 459 U.S. 176 (1982) (diverting water from river); *Evans*, 462 U.S. at 1017 (runs of anadromous fish); *Kansas*, 206 U.S. at 85-98 (use of the Arkansas River). The Special Master already recognized this. *See* Mem. Dec. at 29 ("The fact that a State's actions deplete the quantity of water available in another States is the basis of many—if not all—interstate water disputes."). The Special Master also acknowledged that the "[Supreme] Court has explicitly drawn [a] parallel between the Commerce Clause and its equitable apportionment jurisprudence." Mem. Dec. at 31 n.5. Under the Commerce Clause, States cannot keep resources only for themselves; they must share. *Evans,* 462 U.S. at 1025; Mem. Dec. at 31. Mississippi, too. It cannot make resources intrastate in nature by preventing out-of-state residents from having any access. In short, because MLGW's pumping within Tennessee affects the availability of water in Mississippi, the water is likely interstate in nature. Mem. Dec. at 31.

If MLGW extended its pumping into Mississippi, instead of remaining in Tennessee, it would go too far. *See Tarrant Reg. Water Dist. v. Herrmann*, 569 U.S. 614 (2013). But MLGW does not run afoul of this rule. It pumps in Tennessee, which causes the water, through a natural response to a cone of depression, to flow underground. MLGW does not venture across the border. And if Mississippi got its way, a resource could never be interstate in nature when a defendant State acted within its own borders but affected resources in the other State.

That approach would clash with precedent and principles. *See Evans*, 462 U.S. at 1025. In *Evans*, an equitable apportionment case, the Supreme Court approvingly cited *Philadelphia v. New Jersey*, 437 U.S. 617, 627 (1978), which held that a New Jersey law that prohibited the importation of waste that came from out of state violated the Commerce Clause because States cannot discriminate against residents of other states. *Id.* The *Evans* Court also cited *Hughes v. Oklahoma*, 441 U.S. 322, 330 (1979), which has long stood for the proposition that states violate the Dormant Commerce Clause when they hoard their own natural resources. *Id. Evans* teaches that equitable apportionment cases and Commerce Clause cases share the same root. *Evans*, 462 U.S. at 1025. From that root, rules have sprouted: On the one hand, a State may not cross the border to retrieve a natural resource from a neighboring State without permission. *See Tarrant*, 569 U.S. 614. On the other hand, a State cannot hoard everything for its own residents. *See Evans*, 462 U.S. at 1025. MLGW does not violate the former, and Mississippi attempts to run afoul of the latter.

All told, MLGW's pumping mirrors concerns that often arise in Commerce Clause cases—namely, disagreements over natural resources. This type of activity "is the basis of many—if not all—interstate water disputes." Mem. Dec. at 29. In such disputes, when "the removal of water within a State's borders can have a direct effect on the availability of water in

another state, the resource is likely interstate in nature." *Id.* at 31. Here too. So Defendants present a strong argument that this case involves an interstate resource. But at this point, the Special Master finds an evidentiary hearing would remain helpful in rendering a decision and developing a thorough record for the Supreme Court's review.

(3) The Natural Flow Theory

A portion of the water in Mississippi migrates into Tennessee naturally; that is not disputed. Nor do the parties dispute that the water flows slowly—a matter of inches per day. And all agree that this natural flow existed before pumping occurred. Many facts are undisputed.

But not all. The first is, again, definitional. Mississippi argues it has limited its claims to water that would not leave the state for thousands of years if MLGW did not pump. Pl.'s Resp. at 14. According to Mississippi, only a small portion of the water in northern Mississippi has crossed into Tennessee naturally—and only after hundreds of years. *Id.* (citing Pl.'s Ex. 4, Spruill Dep. at 143). Thus, because Mississippi limits its claims to only water that would remain in Mississippi, the theory goes, that water is intrastate in nature. This argument fails for the reasons discussed in the pumping-effects section: Since MLGW's pumping causes water to migrate out of Mississippi, the water is likely interstate in nature.

Second, the parties dispute the relevance of the water's flow rate. Although Mississippi emphasizes that in the absence of MLGW's pumping the water would remain in Mississippi for hundreds or thousands of years, Mississippi does explain why that matters. The Special Master previously noted that evidence of "the extent of historical flows in the Aquifer between Mississippi and Tennessee" would help determine the nature of the water at issue. Mem. Dec. at 36. At least a portion of the water flows from Mississippi to Tennessee naturally. *See* Defs.' Ex. 3, Larson Rept. at 19-22; Defs.' Ex. 16, Spruill Dep. at 41:14-23; Defs.' Ex. 17, Spruill Rebuttal

Rept. at 27-28. And some water has, in fact, flowed from Mississippi into Tennessee. *See* Defs.' Ex. 4, Langseth Rept. at 16-17; Defs.' Ex. 5, Wiley Rept. at 11.

Mississippi does not dispute that the water would, *eventually*, flow out of the Magnolia State. *See* Pl.'s Resp. at 7, 14. Nor does Mississippi dispute that some water already has left its borders. *See id.* at 7 n.8. Instead, Mississippi argues that (1) the water that naturally flows from Mississippi into Tennessee is a very small portion of the Aquifer and is not included in Mississippi's claims, and (2) the groundwater that Mississippi claims would remain in Mississippi for up to 22,000 years without MLGW's pumping. *See id.* at 14 (citing Pl.'s Ex. 14, Wiley Rebuttal Rept. at 4).

These distinctions do not indicate an intrastate character. If anything, the fact that some water has already left Mississippi suggests that "the extent of historical flows in the Aquifer between Mississippi and Tennessee" support an interstate character. Mem. Dec. at 36. At the same time, disputes exist regarding the flow rate, residency time, and extent of water at issue. A hearing would assist in resolving these disputes.

(4) The Connection Theory

Finally, Defendants argue that the water is interstate in nature because it is hydrologically connected to interstate surface waters. *See* Defs.' Mot. at 11-12. The Special Master previously determined that "the Supreme Court has indicated that equitable-apportionment principles govern disputes between States over a body of interstate surface water with a groundwater component." Mem. Dec. at 20 (citing *Texas v. New Mexico*, 462 U.S. 554, 556-58, 557 n.2 (1983)). And Mississippi has admitted that equitable apportionment "governs groundwater disputes . . . when groundwater is 'hydrologically connected to . . . disputed surface water.'" Mem. Dec. at 20 (quoting Pl.'s Resp. 1 n.2. and Compl. ¶ 41). Defendants point out that

Mississippi's own expert, David Wiley, testified that water from the Aquifer is hydrologically connected to surface waters. *See* Defs.' Ex. 7, Wiley Dep., at 188:17-190:21. The Wolf River, Defendants argue, flows from Mississippi to Tennessee and discharges into the Mississippi River. *See* Defs.' Mot. at 11; Defs.' Ex. 9, Clark and Hart MERAS Rept. at 6, Figure 3. Finally, Defendants argue that Mississippi's experts admitted that now—and under natural conditions—water in the Aquifer ended up in the Mississippi River. *See* Defs.'s Mot. at 12; Defs.' Ex. 6, Spruill Rept. at 23-24; Defs.' Ex. 5, Wiley Rept. at 9-11; Defs.' Ex. 7, Wiley Dep. at 190:17-21. Because the water in the Aquifer is hydrologically connected to interstate surface waters, the Aquifer is interstate in nature, according to Defendants.

Mississippi does not dispute Defendants' position but argues that Defendants "totally ignore[] groundwater residence time." Pl.'s Resp. at 14-15. Mississippi contends that because it takes up to thousands of years for water within the Aquifer to travel to interstate surface waters, the water retains an intrastate character. But Mississippi does not say why. Still, like in the natural-flow theory, disputes exist regarding the extent of the connection, the residence time, and the amount of water connected to the surface. An evidentiary hearing is appropriate.

(5) Alternative Theories: Ownership, Equal Footing, Nuisance, and Equitable Apportionment

Although the Special Master has indicated the evidentiary hearing will focus solely on whether this case involves an interstate resource, Mississippi revives its argument that, in any event, equitable apportionment is inappropriate. In particular, Mississippi argues that two theories provide useful tools in solving this case: (1) state ownership, and (2) nuisance.

a. Ownership

Mississippi argues that Defendants cannot "change Mississippi's rights in and sovereignty over the naturally occurring groundwater residing" within Mississippi. Pl.'s Resp. at

14. This aligns with Mississippi's earlier argument that under the equal-footing doctrine, Mississippi retains sovereignty over the groundwater upon admission to the United States under Article IV, Section 3 and the Tenth Amendment of the United States Constitution. The equal footing doctrine provides that "a new State, upon entry, necessarily becomes vested with all the legal characteristics and capabilities of the first 13." *Puerto Rico v. Sanchez Valle*, 136 S. Ct. 1863, 1871 n.4 (2016) (citing *Coyle v. Smith*, 221 U.S. 559, 566 (1911)). And Mississippi argues that this case "is about Mississippi's sovereign authority under the Constitution to manage, preserve, protect, and control the taking of high quality groundwater naturally occurring and residing in Mississippi for hundreds and thousands of years." Pl.'s Resp. at 13.

This argument sails wide of its target. Nothing suggests Mississippi has lost rights to the water. Instead, the Special Master is tasked with determining the *extent* of those rights. And when a resource is interstate in nature, equitable apportionment supplies the proper method for determining rights. Mississippi has rejected equitable apportionment.

Indeed, the Special Master has already found this argument inconsistent with precedent and theory. *See* Mem. Dec. at 19-24. It remains so. Mississippi's "discussion of equal footing does not appear to show that the doctrine applies to disputes concerning a State's pumping from an interstate resource." *Id.* at 21. Some Supreme Court cases recognize that "states have a sovereign right to exercise 'control over waters within their own territories.'" Mem. Dec. at 22 (quoting *Tarrant*, 569 U.S. at 631). But *Tarrant* involved a state agency attempting to divert water from a state that it was not a citizen of. *Id.* at 625-26. The agency wanted to do so by crossing the border into another state. Plus, *Tarrant* involved an interstate compact—something that does not exist here. *Id.* As the Special Master observed, *Tarrant* instructs that a state "may

generally regulate water collection activities occurring *within its own borders*." Mem. Dec. at 23 (emphasis added). MLGW's wells sit in Tennessee, not in Mississippi.

Admittedly, the Supreme Court has, at times, discussed a state's water rights in ownership-like terms. For example, in *Hudson County Water Co. v. McCarter*, a New Jersey statute prohibited transporting waters from New Jersey to another state. 209 U.S. 349, 353 (1908). When a New Yorker attempted to supply the borough of Richmond with water from the Passaic River in New Jersey, New Jersey sued. *Id.* In upholding the New Jersey law, the Supreme Court wrote that water within a state is a "great public good" that a state "may keep and give no one a reason for its will." *Id.* at 357.

But *Hudson* never ruled that a state "owns" its resources. And even if one could read *Hudson* as suggesting as much, its natural life has since met its end. Since *Hudson*, the Supreme Court has held that states do not own wild resources like migratory birds, *Missouri v. Holland*, 252 U.S. 416, 431-34 (1920), fish and game, *Toomer v. Witsell*, 334 U.S. 385, 402 (1948); *Hughes*, 441 U.S. 322; *Evans*, 462 U.S. 1017, and—relevant here—groundwater. *See Sporhase v. Nebraska*, 458 U.S. 941 (1982).

In *Hughes*, the Court ruled that an Oklahoma statute prohibiting anyone from taking minnows from Oklahoma waters and selling them outside the state violated the Dormant Commerce Clause. 441 U.S. at 338. Oklahoma argued that the statute was necessary to conserve wildlife, and the Supreme Court acknowledged this as a legitimate state interest. *Id.* at 337. But the Court rejected the notion that a state's interest permitted *any* restriction on natural resources within its boundaries. *Id.* The "fiction of state ownership" had limits, and states could not simply hoard their resources. *Id.*

In *Toomer*, the Supreme Court invalidated a South Carolina law imposing higher fees on out-of-state fisherman. 334 U.S. at 402. In doing so, the Court wrote that the "whole ownership theory . . . is now generally regarded as but a fiction expressive in legal shorthand of the importance to its people that a State have power to preserve and regulate the exploitation of an important resource." *Id.* South Carolina could regulate its resources, but it did not own them.

And in *Sporhase*, the Supreme Court confirmed the "demise of the state ownership theory." 458 U.S. at 951. There, a Nebraska law prohibited residents from withdrawing groundwater for use in another state unless the other state granted reciprocal rights. *Id.* at 946. In light of *Toomer* and *Hughes*, Nebraska argued that "water is distinguishable from other natural resources," and the state has an even greater ownership interest in it. *Id.* at 951. But in rejecting this argument, the Supreme Court found the claim "still based on the legal fiction of state ownership." *Id.* Of course, the Court determined, Nebraska had an interest in conserving and protecting the groundwater. *Id.* at 954. So Nebraska could regulate its resources. *Id.* at 954-55. But Nebraska did not own the water, and its regulation went too far. Finally, in *Evans*, an equitable apportionment case, the Court explained that "a State may not preserve solely for its own inhabitants natural resources located within its borders." 462 U.S. at 1025.

Putting these pieces together, the picture comes into focus: States have an important interest in, and may regulate and control natural resources, but they do not own those resources. This squares with *Tarrant* where one State agency, acting under an interstate compact, sought to retrieve and remove water from another State by crossing the border. *See* 569 U.S.at 630-33. *Tarrant* acknowledges that states retain sovereignty to control waters within their boundaries. *See id.* at 631-33. A state, of course, does "not easily cede sovereign powers, including their control over waters within their own territories." *Id.* at 631. But this simply confirms the point

made in *Hughes*, *Toomer*, and *Sporhase*: States may regulate natural resources within their borders. *Tarrant* adds that a State cannot enter another State to take water without permission. In other words, *Tarrant* aligns with garden-variety principles of statehood.

Here, MLGW does not enter Mississippi; it acts only in Tennessee. And when it acts in Tennessee, the *effects* are felt in Mississippi. If MLGW attempted to cross into Mississippi to take water, a different analysis might apply. But the Supreme Court has never suggested that "a State may sue for the *effects* that occur within its borders as a result of *out-of-state* collection of water from an interstate resource." Mem. Dec. at 23 (emphasis added). In short, "a strict geographic-sovereignty analysis of an interstate water source appears to be at odds with the equitable-apportionment doctrine." *Id.* at 24.

Again, none of this is to say that MLGW can pump without limits. Mississippi may well have a claim to stop at least some of MLGW's actions. But Plaintiff's equal footing theory fails because states do not own natural resources in the way Mississippi claims. Of course, Mississippi still retains rights in the water. And when the water is an interstate resource not governed by an interstate compact, the Supreme Court divides up those rights through equitable apportionment. Far from what Mississippi claims, that remedy would not allow Tennessee to siphon off such a valuable resource from Mississippi—it would merely allocate the proper amount of water to each state. If MLGW took too much, equitable apportionment would account for that. But that question is not currently before the Special Master.

b. Nuisance

Next, in an argument related to the pumping-effects theory, Mississippi suggests that nuisance could resolve this case. Pl.'s Resp. at 12-13. Leaving aside the fact that Mississippi

does not fully explain its theory, the Special Master will explain why nuisance is not a proper mechanism for resolution.

As mentioned, no Supreme Court case has ever applied equitable apportionment to the groundwater context. But in the absence of a compact, "[e]quitable apportionment is the doctrine of federal common law that governs disputes between states concerning their rights to use the water of an interstate stream." *Colorado*, 459 at 183 (citing *Kansas*, 206 U.S. at 98). True, as Mississippi points out, this case does not involve a stream, river, or rapidly flowing water. The water sits in tiny rock formations deep beneath the earth. So it is not immediately clear that equitable apportionment must apply.

Mississippi points to *Missouri v. Illinois*, 180 U.S. 208 (1901) as an example of an Original Action case in which the Supreme Court used nuisance—not equitable apportionment—to resolve an interstate dispute. Pl.'s Resp. at 12-13. As Plaintiff explains it, *Missouri* dealt with an injunction to prevent "construction of an unnatural channel that would transport Chicago's sewage to the Des Plaines and Illinois Rivers which, by the agency of natural laws would carry the sewage into the Mississippi River." Pl.'s Resp. at 13 (citing *Missouri*, 180 U.S. at 241-248). Five years later, the Supreme Court rejected Missouri's nuisance claim because it could not demonstrate that Illinois caused the pollution in dispute. *Missouri v. Illinois*, 200 U.S. 496, 525-26 (1906). But, importantly, the Court permitted the plaintiff to proceed under a nuisance theory in the first place.

Missouri bears little resemblance to this case. There, the Court had no reason to employ equitable apportionment because it had no water to divide. The dispute centered on Illinois's plan to build a channel that would transport sewage into waters within other states. *See* 180 U.S.

at 240-47. In other words, *Missouri* was a pollution case; it did not involve a State using too much of an interstate water resource.

But that is the claim here; Mississippi thinks that Defendants take too much groundwater. Both states want to use the water, and no interstate compact exists. As a "flexible doctrine" that applies to ensure "just and equitable" allocation of interstate resources, equitable apportionment tracks neatly onto this case. *Colorado*, 459 U.S. at 183 (quoting *Nebraska v. Wyoming*, 325 U.S. 589, 618 (1945)). Nuisance does not. As in *Missouri*, nuisance might apply if Mississippi argued MLGW's actions resulted in pollution in Mississippi. It does not. Mississippi argues only that MLGW is taking too much water. The Supreme Court applies equitable apportionment in a variety of disputes, including runs of anadromous fish. *See Evans*, 462 U.S. at 1024-45. The underground nature of the water here provides scant reason to reject equitable apportionment. *See* Mem. Dec. at 20. So while no case has squarely addressed this issue, case law presents no hurdle to applying equitable apportionment to groundwater, and indeed the principles underlying precedent support equitable apportionment's application. What the Special Master already concluded remains true: equitable apportionment applies to interstate groundwater. The question, then, is whether this case involves an interstate resource.

VI. CONCLUSION

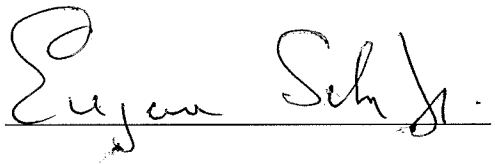
Groundwater is a critical resource. It provides freshwater to millions for a range of essential uses. Indeed, its importance is hard to overstate. Water disputes could be "grounds for war if the States were truly sovereign." *South Carolina v. North Carolina*, 558 U.S. 256, 289 (2010) (citing *Texas*, 462 U.S. at 571 n.18). And "[t]his case is no exception." Mem. Dec. at 35.

Understandably, Mississippi wants MLGW to stop pumping. Mississippi has spent years making a long and arduous journey, navigating federal courts, all in an attempt to protect what it

believes it rightfully owns. Now, Mississippi has come ashore in this Supreme Court Original Action. But by rejecting equitable apportionment, Mississippi might have abandoned the only mechanism for relief. Mississippi may have burned its boats.

An evidentiary hearing will help us know for sure. Although Defendants present strong evidence that the Aquifer and water are interstate in nature, Original Actions require a robust record for the Supreme Court's review. The Federal Rules of Civil Procedure serve as permissive guides in Original Actions, not mandatory rules. *See* Supreme Court Rule 17.2. Thus, as in the previous Memorandum Decision, the Special Master will "err on the side of over-inclusiveness in the record for the purpose of assisting the Court in making its ultimate determination." Mem. Dec. at 35-36. The Motion for Summary Judgment is DENIED.

Dated: November 29, 2018



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