SUPERIOR COURT OF ARIZONA
MARICOPA COUNTY

July 5, 2022 CLERK OF THE COURT

HONORABLE MARK H. BRAIN A. Parmar
Deputy

FILED: July 8, 2022

Contested Case No. W1-103

In re: The General Adjudication of All Rights to Use Water in the Gila River System and Source

In re: San Pedro River Subflow Technical Report

Order Re: Report of the Special Master on Methodology for Determination of Cone of Depression

The Special Master issued a report on the Methodology for Determination of Cone of Depression for *In re San Pedro Subflow Technical Report* ("Report") on November 14, 2018. The purpose of the cone of depression test developed by Arizona Department of Water Resources ("ADWR"), is to identify which wells in the San Pedro are subject to the court's jurisdiction to adjudicate, and later enforce, appropriable water rights under state law and applicable claims under federal law by reason of pumping subflow. The cone of depression test operates by evaluating whether a well is depleting the subflow zone based on the assumption that the well is pumping in a hypothetical steady state condition at an unspecified time in the future. The specific issue of the Report is the appropriate methodology to be used in the San Pedro River Watershed to determine whether the cone of depression created by a well pumping in a steady-state condition will cause a drawdown at the boundary of the subflow zone equal to or greater than 0.10 foot.

The Special Master concluded: (1) the MODFLOW program shall be used to create the groundwater model for the Cone of Depression Test; and (2) the use of a cone of depression test does not affect the presumption that the owner of a well located outside the subflow zone is pumping percolating groundwater. The Gila River Indian Community (GRIC) filed an objection to the Report. The Arizona Department of Water Resources, joined by the San Carlos Apache Tribe and Tonto Apache Tribe, also filed an objection. Pueblo Del Sol Water Company and the City of Sierra Vista collectively filed comments to the Report. Ten parties filed responses to the objections to the Report: Freeport Minerals

Corporation, Arizona Public Service Company, BHP Copper, Inc., Arizona State Land Department, Gila Valley Irrigation District, Franklin Irrigation District, City of Cottonwood, Salt River Project, and the United States. This Order will address the objections and comments.

ADWR and GRIC Objections

i. Groundwater modeling

The Arizona Department of Water Resources objects to the Special Master's recommendation that MODLFOW be used to determine whether a given well in the San Pedro River Watershed is subject to the jurisdiction of the Adjudication Court. It supports the use of AquiferWin32 for the groundwater modeling work necessary to determine the Court's jurisdiction and argues that, due to its technical expertise, ADWR should be the ultimate decisionmaker regarding which groundwater model should be used. It based this argument on a decision from the Arizona Supreme Court that stated, "whatever test ADWR finds is realistically adaptable to the field and whatever method is the least expensive and delay-causing, yet provides a high degree of reliability, should be acceptable." *In re Gen. Adjudication of All Rights to Use Water in Gila River Sys. & Source,* 198 Ariz. 330, 343, 9 P.3d. 1069, 1082 (2000) ("*Gila IV*"). Arizona Department of Water Resources is a technical advisor to the Adjudication Court and recommends potential water rights throughout a watershed. Ariz. Rev. Stat. 45-256(A). It has considerable expertise in the investigation and reporting of water claims and uses. *San Carlos Apache Tribe v. Superior Court ex rel. County of Maricopa,* 193 Ariz. 195, 213, 972 P.2d 179, 197 (Ariz. 1999). However, ADWR's statutory authority does not "require the court to accept or decree its HSR." *Id.* Instead, ADWR's role in this case is to use its technical expertise and equipment to develop a recommended test to determine whether a given well that is located outside the boundaries of the subflow zone is subject to the Adjudication because its cone of depression intercepts and withdraws subflow. This type of activity by ADWR is within the power granted to the agency so long as judicial review is permitted. *San Carlos Apache Tribe,* 193 Ariz. at 213, 972 P.2d at 197. Here, ADWR presented two types of groundwater models, MODFLOW and AquiferWin32, and recommended the adoption of AquiferWin32. Claimants filed objections to ADWR's technical report which are the subject of this proceeding.

When comparing reliable groundwater models necessary to determine jurisdiction of the court to adjudicate claimed rights to appropriable water by well owners, the most accurate model, while still accounting for time and efficiency, is one that must be used. AquiferWin32 requires subjective judgment on where to place recharge variables that can add additional uncertainty and significant error in the face of such a narrow subflow zone drawdown requirement. MODFLOW can incorporate different values for transmissivity at different locations within the aquifer and base simulation results on multiple sources of recharge, which is important in the San Pedro because transmissivity is not uniform throughout the aquifer. Use of a single transmissivity value may not accurately reflect a well's steady state withdrawal potential thus skewing results necessary for a determination of jurisdiction. The United States Geological Survey (USGS) created a MODFLOW

program for the Upper San Pedro that, taken in conjunction with ADWR's demonstration project, covers a significant portion of the San Pedro River Watershed. Additional MODFLOW coverage would not be overburdensome given the work already done in the watershed. MODFLOW shall be the model used to run cone of depression testing throughout the San Pedro River Watershed.

ii. Burden of Proof

The second issue raised by the Special Master's Report is whether the determination that a well is subject to the court's jurisdiction pursuant to the cone of depression test eliminates the strong initial presumption that the well is currently pumping percolating groundwater in subsequent proceedings, such an adjudication of a water right or an enforcement action.

A well pumping underground water is presumed to be pumping percolating groundwater, not appropriable subflow. *Gila IV,* 198 Ariz. at 343, 9 P.3d at 1082. To shift the burden of proof to a well owner that the well is not pumping appropriable water, ADWR must prove that a well is withdrawing subflow by clear and convincing evidence. *Id. Gila IV* held that when ADWR determines that a well is pumping subflow by reason of its cone of depression, it has supplied clear and convincing evidence of that fact. *Id.* Arizona Department of Water Resources argued that the *Gila IV* decision treated the cone of depression test at issue here as the appropriate test to shift the burden of proof. A cone of depression test that incorporates the assumption that the well is pumping at a steady state is not sufficient to shift the burden of proof to a well owner because ADWR's test must prove that a well is currently pumping subflow based on the actual, not hypothetical, operations of the well. A cone of depression test, run to the point at which a well reaches steady state, only proves that a well will pump subflow by its cone of depression at some point in the future assuming continual pumping. The test that Judge Ballinger used to define the jurisdiction of the Adjudication Court was one that contemplates a future withdrawal of subflow when a well's cone of depression eventually reaches the subflow zone. A "now or in the future" cone of depression test cannot generate the clear and convincing evidence necessary to shift the burden of proof to a well owner that a well is pumping subflow. A properly constructed subflow depletion test will determine if a given well is in fact pumping subflow at the time the test is run. Only a subflow depletion test can provide the clear and convincing evidence necessary to shift the burden to a well owner.

The Gila River Indian Community and ADWR both argue that *Gila IV* only required the development of a single test to be applied to a well located outside the lateral boundaries of the subflow zone. Arizona Department of Water Resources asserts that the single test determines if the well is subject to the Adjudication and it shifts the burden of proof to a well owner to establish that a well is not pumping subflow. Similarly, GRIC argues that *Gila IV* contemplated that ADWR would only develop one test and that test shifts the burden of proof. These arguments equate the Court's acquisition of jurisdiction with an adjudication of a right to appropriable water. A determination that the Court has jurisdiction over a particular well to determine an appropriable water right does not constitute a determination on the merits that the well is pumping appropriable water. The

Arizona Supreme Court has long recognized that the Court has jurisdiction over a well because some portion of the water pumped is subflow, but that this exercise of jurisdiction does not convert all water pumped from a well to subflow. *In re General Adjudication of All Rights to Use Water in the Gila River System and Source*, 175 Ariz. 382, 391, 857 P.2d 1236, 1246 (1993) ("*Gila II"*) ("This is not an all or nothing proposition.") A well that is drawing water from the subflow zone may also draw water from the surrounding alluvium not within the subflow zone. *Id.* Therefore, the entire quantity withdrawn from a well determined to be subject to the Court's jurisdiction cannot be assumed to be purely subflow and therefore eligible for an appropriable water right. Judge Ballinger's decision to approve a broad test to determine the Court's jurisdiction does not eliminate the need, and is not a substitute, for a test to determine whether a well is pumping appropriable water and the quantity of that appropriable water.

Arizona Department of Water Resources also contends that an additional test is not necessary prior to the entry of a decree. ADWR's position is that once the Court has found it has jurisdiction over a well, "[a]ny decree-related calculations should use the quantities established in the [Hydrographic Survey Report] for each Potential Water Right after the objections to the quantification methods have been resolved." Motion at 11.[1] Issuing a water right in a final decree of the Adjudication Court based solely on quantity figures listed in the HSR ignores the legal distinction between percolating groundwater and appropriable water in Arizona. Wells that extract subflow from the river can also pump percolating groundwater from the adjacent aquifer where the cone of depression extends to areas not within the subflow zone and not causing a depletion of the subflow zone. To adjudicate water rights under Arizona law, a court must be able to classify the water withdrawn from a well as percolating groundwater or appropriable water (which includes subflow, governed by the doctrine of prior appropriation). Admittedly, distinguishing between and appropriately quantifying the classes of water that may be pumped by a particular well may be difficult, but because surface water rights and groundwater rights differ, a court cannot effectively adjudicate a potential water right using such a broad test that blurs legally significant differences.

While a well that clearly pumps both subflow and percolating groundwater is subject to the jurisdiction of the Adjudication, only the quantity of subflow withdrawn through the well can be the subject of an appropriable water right included in a decree. Percolating groundwater withdrawn from such a well should not be part of the right to appropriable water assigned in a final decree. Therefore, a cone of depression test to determine jurisdiction of the Adjudication Court over a well does not suffice to adjudicate a claim for a right to appropriable water pumped from a well.

United States Objections

The United States filed a response to ADWR's objections to the Report. Responding to ADWR's objection, the United States asserted that is disagrees with the timing of AWDR's discussion that a subflow depletion test is only necessary for the

[1] Based on a parenthetical comment in its Motion, it is not clear that ADWR believes that a well that depletes the subflow through its cone of depression can obtain a decreed appropriable water right. Motion at 11.

enforcement phase of the proceedings. The United States contends that ADWR's discussion of decree-related calculations and enforcement of a decree is inconsistent with the narrow issue before this Court. The United States points out that the issue here is the method ADWR will use to determine which wells are subject to the Court's jurisdiction. Any discussion about the calculation of subflow depletion is premature according to the United States. If the Court determines that a subflow depletion test is necessary, the United States argues that the "nature and scope" of a subflow depletion test are both pressing and important issues for this Court to address. In essence, the United States is preemptively objecting to the contention that future enforcement of a decree would depend on either a simulation or dynamic, momentary subflow depletion test due to the fact that such a test may not accurately reflect the nature of the Gila River System and Source. Instead, the United States, in partial agreement with ADWR, suggests the Court use the values provided in the HSR to quantify a decreed water right.

The Report's findings of fact and conclusions of law are limited to a determination of the method that shall be used to decide which wells are subject to this Court's jurisdiction. Judge Ballinger previously determined that for a well to be subject to the jurisdiction of the Adjudication Court for purposes of determining water rights under state law, ADWR must find that a cone of depression from a well pumping at steady state currently reaches or will later reach the subflow zone and cause a drawdown of equal to or greater than 0.10 foot. 2005 Order filed September 28, 2005 *In re Subflow Technical Report, San Pedro River Watershed,* at 34 (Sept. 28, 2005). A determination of whether a well's cone of depression reaches the subflow zone and currently causes, or will cause at some point in the future, a drawdown at a rate greater than or equal to 0.10 foot can be made when using a cone of depression test. As noted elsewhere, whether a well *is currently* withdrawing subflow is a precise determination to be made by a subflow depletion test. Once a subflow depletion test is approved and applied to wells over which the Court has jurisdiction, the Court will adjudicate the well owner's claim for an appropriable water right.

It is unclear how any court could accurately adjudicate a potential water right without using a test that quantifies the amount of appropriable water pumped by the well. Further, it remains unclear how this Court could assign a water right to a claimant in a decree without an accurate determination of the present quantity of water the claimant is pumping and the source of that water. Again, Arizona law has long embraced a bifurcation of water law between groundwater law and surface water law. Even wells located outside the subflow zone that are proven to be withdrawing subflow from the river may also withdraw percolating groundwater that, in cases where the claimant is not asserting a federal reserved water right, are not subject to this Adjudication nor covered by surface water law. The Adjudication Court cannot decree an appropriable water right for percolating groundwater. The Adjudication Court is not required to accept or decree ADWR's findings in the HSR. *San Carlos Apache Tribe,* 193 Ariz. at 213, 972 P.2d at 197. It would be inconsistent with Arizona water law to decree a water right based solely on the quantities listed for a given well in the HSR with no further inquiry.

The United States is correct that the issue of quantification of water pumped from a well located outside the subflow zone is not at issue in this proceeding. That issue will be considered in connection with the proceeding associated with the court's review of ADWR's subflow depletion test.

IT IS ORDERED, approving and adopting the Subflow Report's Findings of Fact and Conclusions of Law.

IT IS FURTHER ORDERED that Arizona Department of Water Resources shall develop a test that will determine the amount of subflow depleted by a well at or about the time that test is administered.

IT IS FURTHER ORDERED signing this Minute Entry as a formal Order of the Court.

Mark H Brain

HONORABLE MARK H. BRAIN
JUDICIAL OFFICER OF THE SUPERIOR COURT