

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA  
IN AND FOR THE COUNTY OF MARICOPA

IN CHAMBERS ( X ) IN OPEN COURT ( )

SPECIAL MASTER GEORGE A. SCHADE, JR.

Presiding

IN RE THE GENERAL ADJUDICATION  
OF ALL RIGHTS TO USE WATER IN THE  
GILA RIVER SYSTEM AND SOURCE

DATE: September 8, 2003

CIVIL NO. W1-103

ORDER DETERMINING  
ISSUES 1 THROUGH 4

CONTESTED CASE NAME: *In re Subflow Technical Report, San Pedro River Watershed.*

HSR INVOLVED: None.

DESCRIPTIVE SUMMARY: The Special Master issues an order with proposed resolutions of issues 1 through 4 that were briefed in advance of the hearing set on October 21 and 22, 2003. These rulings may be modified after the hearing.

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**ORDER**

On April 25, 2003, following a conference with parties, the Special Master set for briefing four issues whose resolutions will focus the cross-examination of witnesses scheduled for October 21 and 22, 2003. Parties filed memoranda, responses, and replies.

The Special Master read all the legal papers; the Arizona Department of Water Resources' ("ADWR") Subflow Technical Report, San Pedro River Watershed (March 29, 2002) ("Subflow Report"); the responses and objections filed to the Subflow Report; the

decisions of the Arizona Supreme Court in *Gila II*<sup>1</sup> and *Gila IV*<sup>2</sup>; retired Judge Stanley Z. Goodfarb's June 30, 1994, order ("Goodfarb Order"); and Judge Eddward P. Ballinger, Jr.'s January 22, 2002, order.<sup>3</sup> The four issues can be addressed without hearing oral argument.

The following rulings may be modified after the examination of witnesses is completed. Absent relevant testimony, credible evidence, or persuasive argument, sufficient to support findings, the Special Master does not anticipate modifying these rulings.

### **I. Should ADWR's subflow analysis consider predevelopment or current stream flow conditions?**

Judge Ballinger did not decide this issue in his January 22, 2002, order ("Ballinger Order"). Judge Ballinger directed ADWR to prepare a supplemental report that

shall include...a **method** for including both perennial and intermittent streams as part of the subflow analysis, including streams that historically contained perennial or intermittent flows, but which now are ephemeral due to development and other human initiated actions. The Court...expects the department to **formulate a proposal** using readily available historical data that will permit determination of water levels and locations as of date(s) prior to widespread diversion and depletion of Arizona's stream flows (emphasis added).<sup>4</sup>

The Court's directives to ADWR to present a "method" and "formulate a proposal" to establish the lateral limits of the subflow zone in the San Pedro River Watershed cannot reasonably be construed to be a ruling on this issue. These were directives to ADWR as to what it should include in its proposed procedures and processes. The proposals gave rise to this issue. The Superior Court will rule when it adopts or modifies the Special Master's report on this issue now fully briefed.

The parties who favor considering current stream flow conditions argue that data of predevelopment conditions is not available, consistent, or reliable making determinations uninformed guesswork; predevelopment conditions and hydrologic systems cannot be recreated after decades of pumping and construction of reservoirs; hydrologic systems are dynamic and continuously change; and using predevelopment conditions would result in an expanded subflow zone at odds with the "narrow concept of subflow" enunciated by the Arizona Supreme Court.<sup>5</sup>

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<sup>1</sup> *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source*, 175 Ariz. 382, 857 P.2d 1236 (1993) ("*Gila II*").

<sup>2</sup> *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source*, 198 Ariz. 330, 9 P.3d 1069 (2000), *cert. denied sub nom. Phelps Dodge Corp. v. U.S.*, 533 U.S. 941 (2001) ("*Gila IV*").

<sup>3</sup> A copy of the order is available online at <<http://www.supreme.state.az.us/wm/>> on the page titled *Gila River Adjudication (Judge Eddward P. Ballinger, Jr.)*.

<sup>4</sup> Ballinger Order 1-2.

<sup>5</sup> *Gila II*, 175 Ariz. at 391, 857 P.2d at 1245.

Those arguing that predevelopment stream flow conditions should be considered claim that using current conditions would unfairly favor claimants who have been withdrawing subflow with unquantified water rights or without regard for prior vested surface water rights. Likewise, an unfair advantage would be gained by claimants whose water use claims will be investigated years from now because they would continue withdrawing water and depleting streams.

Parties on both sides argue that the “law of the case” supports their position. A close reading of the Goodfarb and Ballinger Orders, *Gila II*, and *Gila IV* does not show that this issue was presented to the superior or supreme court or that it was decided by either court with definiteness and clarity, that it can be said the law of the case was set.<sup>6</sup>

Resolution of this issue turns on selecting a consistent chronological point of reference, for which legally sufficient data and information exists to delineate the subflow zone, done within a process where no claimants can gain an unreasonably advantageous position in the adjudication of their water right claims.

Predevelopment conditions offer consistent chronological and hydrologic points of reference that can be used in all watersheds. While the subflow zone, as well as the groundwater system, is dynamic, predevelopment conditions can be assumed to have been in dynamic equilibrium (of inflows and outflows with no storage) and, therefore, can provide more stable scientific data for analysis than current conditions, which can change rapidly due to increasing water demands.

Using predevelopment conditions precludes claimants who are at the end of ADWR’s watershed investigations from gaining an unreasonably advantageous position. If current stream flow conditions are used, claimants at “the back of the line”<sup>7</sup> would unreasonably benefit from their position as they can continue to withdraw water, and their wells possibly found to be outside a subflow zone determined under then existing conditions. The slow progress of general stream adjudications is a real and practical factor that together with its consequences must be taken into account.

Parties have argued about the quality and quantity of available data and information to evaluate predevelopment stream flow conditions. The pleadings have not, however, presented indisputable evidence that the data and information are inadequate to do the required job. ADWR’s Subflow Report indicates that the “reach of the San Pedro River [in the Sierra Vista subwatershed] was determined by the United States Geological Survey to be perennial during predevelopment conditions...”<sup>8</sup> This statement shows that evidence of predevelopment conditions can be obtained and determinations made regarding a stream’s predevelopment flow conditions.

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<sup>6</sup> *State v. King*, 180 Ariz. 268, 278-279, 883 P.2d 1024, 1034-1035 (1994), *cert. denied*, 516 U.S. 880 (1995). Arizona recognizes this doctrine as a rule of procedure, not substance.

<sup>7</sup> Salt River Project’s (“SRP”) Opening Brief on Legal Issues 4 (June 6, 2003). While SRP says “race to” the back of the investigations line, the fact is that at the pace the Gila River Adjudication has been proceeding due to a variety of factors, there is not much immediacy for claimants outside of the San Pedro River Watershed “to race.”

<sup>8</sup> Subflow Report 11 (March 29, 2002).

ADWR has not had an opportunity to obtain and review maps and data suggested by several of the experts participating in this proceeding, conduct field investigations, analyze drilling records, and run numerical modelings. It is premature to conclude that adequate and reliable data of predevelopment stream flow conditions is not available to do the required analyses.

The possibility that using predevelopment conditions might result in more wells being found withdrawing subflow than under current conditions does not translate into an expansion of Arizona's "narrow view of subflow."<sup>9</sup> The subflow zone for the San Pedro River Watershed will remain as narrow as the saturated floodplain Holocene alluvium.

A timeframe for predevelopment does not mean the first arrival of Native American inhabitants or European settlers. Most likely, should that timeframe be used, reliable data for subflow analysis is unavailable. Judge Ballinger provided an acceptable timeframe for predevelopment conditions, namely, "prior to widespread diversion and depletion of Arizona's stream flows."<sup>10</sup> The word "widespread" is defined as "widely extended...occurring over a wide area or extent."<sup>11</sup> The term indicates greater than minimal, localized, or sporadic diversion and depletion of stream flows as a result of human activity.

The timeframe can be an approximate chronological year or a range of years immediately prior to widespread diversion and depletion of a stream's flows. In order to locate perennial streams under predevelopment conditions, ADWR proposes to use an atlas that is partially based on "field data collected" by various agencies "from the early 1900s to about 1940 'which precedes the period of greatest development.'"<sup>12</sup> One party's experts, who have participated in the subflow proceedings in the Superior Court since 1987, "believe that 'predevelopment' in the context of groundwater use should most logically describe the period before 1940..."<sup>13</sup> These experts stated in their sworn declaration that "pre-development conditions with respect to surface water might be reasonably assigned to the period prior to about 1900, prior to construction of Roosevelt Dam."<sup>14</sup> These statements, which although have not been subject to cross-examination, indicate that predevelopment conditions prior to widespread diversion and depletion of stream flows can be dated from 60 to 110 years ago.

The timeframe will not be the same for all watersheds, but it is a consistent and fair point of reference. Adopting predevelopment conditions as the point of reference, at this time, also lets claimants plan accordingly for future water uses.

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<sup>9</sup> *Gila II*, 175 Ariz. at 391, 857 P.2d at 1245.

<sup>10</sup> *See* n.4.

<sup>11</sup> WEBSTER'S NEW WORLD DICTIONARY OF AMERICAN ENGLISH 1526 (3d ed. 1988).

<sup>12</sup> Subflow Report 6.

<sup>13</sup> BHP Copper, Inc.'s Responsive Brief 3 at ll. 7-8 (July 16, 2003). The experts' sworn declaration states "prior to about 1940." *See infra* n.14.

<sup>14</sup> Responsive Report and Sworn Declaration, Errol L. Montgomery, Ph.D., P.G., and Thomas W. Anderson, P.H., 11 (June 17, 2002).

## Ruling

1. ADWR's subflow analysis shall consider predevelopment stream flow conditions.
2. The date of predevelopment shall be a chronological year or a range of years immediately prior to widespread diversion and depletion of the stream's flows as a result of any human activity.

### **II. Should ADWR consider the criteria specified in *Gila IV* to identify the subflow zone or have the criteria already been taken into account in the Arizona Supreme Court's holding that the saturated floodplain Holocene alluvium is the subflow zone?**

In *Gila II*, the Arizona Supreme Court reviewed the "test for identifying subflow" and its "narrow view of subflow" first expressed in *Southwest Cotton*.<sup>15</sup> The Court held that in order to determine

[w]hether a well is pumping subflow....comparison of such characteristics as elevation, gradient, and perhaps chemical makeup can be made. Flow direction can be an indicator....<sup>16</sup>

Judge Goodfarb indicated that if the "tests" of elevation, gradient, chemical composition, and flow direction were added to the concept that a subflow zone can be differentiated from adjacent tributary and basin fill aquifers that contribute to or receive discharge from the subflow zone, "a set of principles can be developed to define 'subflow.'" <sup>17</sup> Judge Goodfarb turned to the four tests and this concept because it was "[t]he only logical and rational way" to make *Southwest Cotton* and *Gila II* "consistent with the scientific principles" he had heard from the expert witnesses.

Before beginning to discuss the "different sides or proposals" presented, Judge Goodfarb found that *Gila II* and the evidence before him required that any subflow zone "must be defined by at least the following principles:"

1. The "subflow" zone must be adjacent and beneath a perennial or intermittent stream.
2. It may not be adjacent or beneath an ephemeral stream. However, it may be adjacent or beneath an ephemeral section of a perennial or intermittent stream, if the ephemeral section is caused by adjacent surface water diversion or groundwater pumping. There must, however, be a saturated zone beneath connected to similar zones beneath the upper and lower perennial or intermittent stream sections.

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<sup>15</sup> 175 Ariz. at 391, 857 P.2d at 1245; *Maricopa County Municipal Water Conservation District No. One v. Southwest Cotton Co.*, 39 Ariz. 65, 4 P.2d 369 (1931), *modified*, 39 Ariz. 367, 7 P.2d 254 (1932) ("*Southwest Cotton*").

<sup>16</sup> *Gila II*, 175 Ariz. at 392, 857 P.2d at 1246.

<sup>17</sup> Goodfarb Order 34.

3. Except as set forth in paragraph 2 above, there must be a hydraulic connection between the surface stream and the “subflow” zone.
4. The “subflow” zone must be distinguished from adjacent tributary aquifers or connecting basin fill.
5. The parameters of the “subflow” zone, if it is to be defined by reference to the saturated floodplain alluvium, Holocene alluvium, or younger alluvium, must be outside of and not include those tributary alluvial deposits known as “inliers” as indicated in [a figure in an expert’s report]. (Numbers 6 and 7 are omitted because they are not germane to this discussion).<sup>18</sup>

Judge Goodfarb proceeded to consider the evidence related to the proposals for the definition of subflow. He concluded:

After consideration of flow direction, water level elevation, the gradation of water levels over a stream reach, the chemical composition if available, and lack of hydraulic pressure from tributary aquifer and basin fill recharge which is perpendicular to stream and “subflow” direction, the Court finds the most accurate of all the markers is the edge of the saturated floodplain Holocene alluvium.<sup>19</sup>

He explained the reasons for this conclusion and the criteria for the subflow zone. They included the stability of the geologic unit of the floodplain Holocene alluvium; the location of this geologic unit beneath and adjacent to most streams; the need for this geologic unit to be saturated and have a hydraulic connection with the stream; the need for subflow to be part of the alluvial plain of a perennial or intermittent stream but not an ephemeral stream or part of the alluvial plain of a tributary aquifer; and the separation from tributary and basin fill aquifers which recharge subflow but whose flow direction is different from the stream’s flow direction. He continued:

If we add the following additional criteria, then even more certainty and reliability is provided. First, the water level elevation of the “subflow” zone must be relatively the same as the stream flow’s elevation. Second, the gradient of these elevations for any reach must be comparable with that of the levels of the stream flow. Third, there must be no significant difference in chemical composition that cannot be explained by some local pollution source which has a limited effect. Fourth, where there are connecting tributary aquifers or floodplain alluvium of ephemeral streams, the boundary of the “subflow” zone must be at least 200 feet inside of that connecting zone so that the hydrostatic pressure effect of the side recharge of this tributary aquifer is negligible and the dominant direction of flow is the stream direction. Fifth, where there is a basin-fill connection between saturated zones of the floodplain Holocene alluvium and a saturated zone of basin fill, the boundary of the “subflow” zone must be 100

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<sup>18</sup> *Id.* 35-36.

<sup>19</sup> *Id.* 56; *see also Gila IV*, 198 Ariz. at 337, 9 P.3d at 1076.

feet inside of the connecting zone so that the hydrostatic pressure effect of the basin-fill's side discharge is overcome and the predominant direction of flow of all of the "subflow" zone is the same as the stream's directional flow (underlining in original).<sup>20</sup>

The Arizona Supreme Court held that "the court based its ruling on evaluation of the pertinent factors set forth in *Gila River II* for delineating the subflow zone."<sup>21</sup> Judge Goodfarb took those factors into consideration to conclude that the subflow zone is the saturated floodplain Holocene alluvium. The Court affirmed Goodfarb's Order "in all respects."<sup>22</sup>

The Special Master finds that the criteria specified in *Gila IV* to identify or delineate the subflow zone have already been taken into account in the Arizona Supreme Court's holding that the saturated floodplain Holocene alluvium is the subflow zone.

This finding means that ADWR is required to apply the same criteria when it cannot delineate the subflow zone by the methods it proposes. There may be stream segments where maps, aerial photography, and technical reports are insufficient to delineate the subflow zone. In those situations, ADWR must apply the criteria specified in *Gila IV* to delineate the subflow zone.

In difficult areas, ADWR "will determine the specific parameters of [the subflow] zone...by evaluating all of the applicable and measurable criteria set forth in the trial court's order and any other relevant factors."<sup>23</sup> Those other relevant factors are "criteria that are geologically and hydrologically appropriate for the particular location."<sup>24</sup>

This determination accords with Judge Ballinger's order that "ADWR shall use a methodology that addresses the appropriate use, if any, of each of the criterion listed in *Gila IV*, as well as any other relevant factors that will be helpful in insuring that ADWR's subflow zone determination is completed using all reasonable means to arrive at results that are as accurate as possible."<sup>25</sup>

#### Ruling

1. The criteria specified in *Gila IV* to identify or delineate the subflow zone have already been taken into account in the Arizona Supreme Court's holding that the saturated floodplain Holocene alluvium is the subflow zone.

2. If ADWR is unable by using the means it proposes to identify or delineate the subflow zone in a stream segment, ADWR is directed to use the criteria specified in *Gila IV*

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<sup>20</sup> *Id.* 57-58; the Arizona Supreme Court quoted this section in *Gila IV*, 198 Ariz. at 337-338, 9 P.3d at 1076-1077.

<sup>21</sup> *Gila IV*, 198 Ariz. at 337, 9 P.3d at 1076.

<sup>22</sup> *Gila IV*, 198 Ariz. at 344, 9 P.3d at 1083.

<sup>23</sup> *Id.*

<sup>24</sup> *Gila IV*, 198 Ariz. at 342, 9 P.3d at 1081.

<sup>25</sup> Ballinger Order 2.

and any other relevant factors that are appropriate for the particular location to delineate the subflow zone.

### **III. In addition to analyzing a well's drawdown at the subflow zone, should ADWR report the cumulative effect of wells or of groups of wells?**

Judge Goodfarb heard testimony and in his order commented about the potential size, long-term effects even after well shut downs, impacts on stream flow volume and its supporting subflow, and the interconnection of cones of depression. He heard testimony “that various analytical or modeling methods are appropriate to calculate” cones of depression.<sup>26</sup>

Two of the experts had “agreed that individual analysis of wells is the most appropriate method to compute drawdown at the ‘subflow’ zone.”<sup>27</sup> Judge Goodfarb “did not attempt to establish a test for determining a well’s cone of depression because the court lacked pertinent evidence on that issue.”<sup>28</sup> The Arizona Supreme Court held that “the court recognized that each well must be separately evaluated ‘to compute drawdown at the “subflow” zone’.... We agree with the trial court.”<sup>29</sup> Therefore, a well’s impact on the subflow zone must be individually evaluated for each well.

The Special Master inquired if ADWR should go one step further and report the cumulative effect of wells or of groups of wells. It is likely that the issue of cumulative effects will arise in the future. Judge Goodfarb commented on it.

Implicit in this question are two expectations, first, that ADWR will be able to obtain meaningful and useful information from its analyses of cumulative effects, if any, and, second, that ADWR will be able to do so with a test that “is realistically adaptable to the field and...is the least expensive and delay-causing, yet provides a high degree of reliability....”<sup>30</sup> Judge Goodfarb found those to be the requisites for an acceptable test to compute drawdown at the subflow zone, and the Supreme Court agreed with him.

Counsel have pointed out that these expectations present “scientific factual issues”<sup>31</sup> and legal issues related to impermissibly stretching the subflow zone contrary to the holdings of the Arizona Supreme Court and, second, due process concerns. The scientific issues will be part of the other issues set for cross-examination and possible redirect examination of expert witnesses. The answer to this issue may be clearer after the examination of witnesses and consideration of argument.

#### Ruling

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<sup>26</sup> Goodfarb Order 62.

<sup>27</sup> *Id.*

<sup>28</sup> *Gila IV*, 198 Ariz. at 343, 9 P.3d at 1082. Judge Goodfarb had stated, “How this is to be done must be left to the discretion of ADWR as this Court finds there was not testimony of how technically certain determinations were to be made scientifically.” Goodfarb Order 62.

<sup>29</sup> *Id.*

<sup>30</sup> Goodfarb Order 62.

<sup>31</sup> Apache Tribes Opening Memorandum 22 at l. 11 (June 6, 2003).



1. A well's drawdown at the subflow zone shall be analyzed individually for each well.
2. The Special Master will not decide in this order whether ADWR should report the cumulative effect of wells or of groups of wells. A ruling will be made after considering the evidence presented at the October hearing.

**IV. Should ADWR's findings be reported in supplemental contested case hydrographic survey reports (HSRs) ("case-by-case") or in a supplemental San Pedro River Watershed HSR ("the entire watershed"), which identifies the subflow zone, wells reaching and depleting a stream, and *de minimis* water rights?**

The parties who briefed this issue support either approach or suggest alternatives. Some argue that the Superior Court did not refer to the Special Master the issue of whether any of ADWR's findings should be contained in an HSR. Judge Ballinger directed ADWR to include in its supplemental report "[a] timeline for completion of the tasks outlined in the report."<sup>32</sup> A timeline connotes that a schedule for reporting is contemplated. Furthermore, in order to move the adjudication forward, the Special Master wants to look ahead to plan the most judicially efficient ways to mesh ADWR's investigations with the litigation of claims. The Special Master believes that for reasons of judicial efficiency action schedules must be considered at every step.

Because ADWR does not have, and may not in the near future obtain, the staff to undertake adequately and expeditiously such a comprehensive project, an "entire watershed HSR" could delay resolution of the subflow and cone of depression issues for several years. The subflow and cone of depression issues are so significant to the progress of this adjudication that they must be resolved as speedily as this complex case allows.

The "case-by-case HSR" arose from the practicality of dealing with a break of years between the publication of a final HSR and the resumption of contested cases begun years earlier. A case-by-case HSR addresses, and so far has proven best suited for, cases involving groups of claimants or claims which present similar issues. A case-by-case HSR is too restrictive a vehicle to use for the subflow and cone of depression issues.

Two alternatives involve a series of steps leading to a supplemental San Pedro River Watershed HSR. The steps differ in task and duration. A third alternative is the preparation of a supplemental HSR showing the subflow analysis for specific segments of the San Pedro River (dubbed the "segment-by-segment approach").

One party suggests that due to the extensive technical work done in the area, the diversity of well types and water uses, and the active litigation of the contested case *In re Fort Huachuca*, the Sierra Vista subwatershed might be an appropriate area for segmentation. ADWR has reported that "[t]he Sierra Vista subwatershed has been, and continues to be, one of the most studied areas in Arizona by geologists and hydrologists."<sup>33</sup>

*In re Fort Huachuca* has been litigated since February 1995. ADWR's preparation of a supplemental contested case HSR has been pending resolution of the issues related to

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<sup>32</sup> Ballinger Order 3.

<sup>33</sup> Subflow Report 13.

subflow. On January 14, 2002, the United States filed an amendment to one of the two claims it filed for Fort Huachuca. On March 7, 2003, ADWR reported that, subject to other tasks and events, the earliest it could obtain certain modeling information and begin preparing an HSR “would be some time in 2004.”<sup>34</sup> *In re Fort Huachuca* presents the most likely first opportunity to address the subflow and cone of depression issues within the context of a contested case.

Briefing was very helpful for this issue. The efficient and effective way to proceed is to amalgamate the best suggestions that fit with current procedures, including those that the Superior Court may require after considering the Special Master’s report on notice issues in *In re PWR 107 Claims*.<sup>35</sup>

### Ruling

1. The Special Master recommends the following schedule for the San Pedro River Watershed:

A. After the Superior Court adopts or modifies the Special Master’s report recommending the procedures and processes to delineate the subflow zone within the San Pedro River Watershed and a cone of depression test, ADWR is directed to prepare a map delineating the subflow zone for the entire San Pedro River Watershed. ADWR shall submit this map and related information in a technical report and not in any form of HSR. The scope of the technical report shall be limited to delineating the subflow zone.

B. Upon filing its technical report with the Superior Court, ADWR shall send a notice to all claimants in the San Pedro River Watershed and the parties listed in the Gila River Adjudication Court-Approved Mailing List informing them of the scope and availability of the report and of a claimant’s right to file written objections to the report and of the deadline for filing objections.

C. Any claimant in the San Pedro River Watershed may file a written objection to ADWR’s technical report within 120 days of the date on which the report was filed. Objections shall be limited to ADWR’s findings regarding the subflow zone.

D. After considering the objections, the Superior Court will approve the map that delineates and establishes the subflow zone for the San Pedro River Watershed.

E. Using the cone of depression test adopted by the Superior Court, ADWR will analyze wells located outside the lateral limits of the subflow zone to determine if the well’s cone of depression reaches an adjacent subflow zone, and if continuing pumping will cause a loss of such subflow as to affect the quantity of the stream. ADWR will examine the other water right claims to determine *de minimis* water rights in the San Pedro River Watershed in accordance

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<sup>34</sup> ADWR’s Status Report Concerning the Preparation of a Supplemental Contested Case HSR for Fort Huachuca 5 at l. 7 (March 7, 2003).

<sup>35</sup> A copy of the report dated January 24, 2003, is available online at <<http://www.supreme.state.az.us/wm/>> on the page titled *Gila River Adjudication (In re PWR 107 Claims)*.

with the Superior Court's September 26, 2002, order.<sup>36</sup> ADWR will investigate and supplement, as needed, its findings reported in the 1991 Final San Pedro River Watershed HSR.

F. ADWR publishes a Supplemental Final San Pedro River Watershed HSR reporting its findings on a claim by claim basis, in accordance with A.R.S. § 45-256(B), including wells withdrawing subflow, cone of depression analyses, *de minimis* water rights, and all other updated information.

G. ADWR shall send a notice of the filing of the Supplemental Final San Pedro River Watershed HSR to all claimants in the Gila River Adjudication, who may file objections within 180 days of the date on which the report was filed.

2. The Special Master will direct ADWR to file the supplemental contested case HSR for *In re Fort Huachuca* after the Superior Court has approved the map delineating the subflow zone for the San Pedro River Watershed.

3. The Special Master recommends that this schedule be adopted for all the watersheds in the Gila River Adjudication subject to modifications that may be proper as a result of experience with this process.

IT IS ORDERED:

1. Issues 1 through 4 are answered as set forth in the foregoing discussions.
2. These rulings may be modified in accordance with relevant testimony, credible evidence, or persuasive argument presented during the examination of witnesses on October 21 and 22, 2003. The Special Master's rulings will be contained in the report filed with the Superior Court.

DATED: September 8, 2003.

/s/ George A. Schade, Jr.  
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GEORGE A. SCHADE, JR.  
*Special Master*

The foregoing delivered this 8th day of September, 2003, to the Distribution Center, Maricopa County Superior Court Clerk's office, for copying and mailing to those parties who appear on the Court-approved mailing list for Case No. W-1, W-2, W-3, and W-4 (Consolidated) dated May 6, 2003, as modified.

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<sup>36</sup> A copy of the order is available online at <<http://www.supreme.state.az.us/wm/>> on the page titled *Gila River Adjudication (Judge Eddward P. Ballinger, Jr.)*.

/s/ KDolge  
Kathy Dolge

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