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

IN CHAMBERS (X) IN OPEN COURT ( )

SPECIAL MASTER JOHN E. THORSON
Presiding

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

DATE: November 14, 1994

CIVIL NO. W1-11-19
(Consolidated)

MEMORANDUM DECISION, FINDINGS OF FACT, AND CONCLUSIONS OF LAW FOR GROUP 1 CASES INVOLVING STOCKWATERING, STOCKPONDS, AND DOMESTIC USES

CONTESTED CASE NAME: *In re Sands Group of Cases (W1-11-19) and Other Related Cases (Consolidated).*

HSR INVOLVED: San Pedro River Watershed Hydrographic Survey Report.

DESCRIPTIVE SUMMARY: The Special Master issues his memorandum decision, findings of fact, and conclusions of law on matters submitted by stipulation, evidentiary hearing, and legal argument concerning the possible summary adjudication of stockwatering, stockponds, and domestic uses in the San Pedro River watershed (Group 1) based on their *de minimis* impact on the Gila River system.

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I. SUMMARY OF MEMORANDUM DECISION

In this memorandum decision, the Special Master determines that stockwatering and certain stockponds and domestic uses in the San Pedro River watershed constitute *de minimis* uses of water in the Gila River system. Consequently, summary procedures and proposed water right characteristics, which are described in this decision, are justified for completing the adjudication of these uses. This decision initiates the summary adjudication of approximately 5,800 or more stockwatering, stockpond, and domestic water users, or between 80 and 85 percent of all potential water uses in the San Pedro River watershed.

Because the terminology in this case is specialized and important to an understanding of this decision, the following terms are defined:

- "*De minimis* water use" means a water use found to be sufficiently small so that the costs of a detailed adjudication of the use outweigh the benefits that would result.

- "Summary adjudication" means those procedures used by the court to adjudicate *de minimis* water uses in a simplified and expedited manner while safeguarding the statutory and due process rights of the litigants involved.

- "Proposed water right characteristics" are those rules used by the Master to assign attributes to *de minimis* water rights recognized during summary adjudication procedures. Proposed water right characteristics for a *de minimis* right become final upon entry of the final decree unless (1) modified by the court or Master prior to the final decree, or (2) the right is subject to a post-decree severance or transfer proceeding.[1]

In the course of this decision, other definitions are established. While many definitions were offered before or during the trial, the Master defines the following terms for purposes of this decision:

- "Stockwatering" means the instream watering of stock at unimproved or improved locations on a stream, creek, spring, or similar source.

- "Stockpond" means a pond or other artificial facility having a capacity of not more than (≤) 15 acre-feet (ac-ft) that is used solely for stock or wildlife.

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[1] ARIZ. REV. STAT. ANN. § 45-172 (1994).

- "Domestic use" means the use of privately supplied water by persons in a permanent dwelling; the watering of pets and farmyard animals; and the irrigation of lawns, gardens, and orchards on land adjoining the dwelling. However, the domestic uses determined to be *de minimis* in this proceeding are those supplied by the landowner or occupant from a well or surface water source ("self-supplied") providing water for a single family household and associated outdoor activities on adjoining land not exceeding (≤) 0.2 acres (ac).

II. NATURE OF PROCEEDINGS

The Special Master issues this memorandum decision in a consolidated case designated to decide how the adjudication of stockponds, stockwatering, and domestic uses in the San Pedro River watershed should be undertaken. The San Pedro River watershed is the first in the Gila River system to reach active litigation, and this contested case presents the first set of uses to be examined by the court.

After approval by the Superior Court of the case management strategy for the San Pedro River watershed, *see* Minute Entry at 4 (Jan. 22, 1993), the Special Master established the first group of contested cases to be tried. This group initially consisted of six individual contested cases joining six groups of watershed file reports (WFRs) in the San Pedro River watershed. The litigants in these cases consist of the landowners (frequently the United States and the State of Arizona), the lessees of public and trust land, and the objectors to the WFRs. These six cases were later consolidated into the present case for the convenience of both the litigants and the court. Minute Entry at 4 (Dec. 3, 1993).

As a prelude to litigation, the litigants were urged by the Master to meet and discuss whether any of the objections to these watershed file reports could be settled. The litigants met repeatedly from June 10, 1993, to March, 1994. Though successful in settling many objections, the litigants indicated to the court that many issues concerning these uses would have to be tried.

In July 1993, the Arizona Supreme Court issued its opinion on Issue No. 2, which addressed the relationship of groundwater and surface water in the Gila River adjudication. As part of its opinion, the Supreme Court endorsed the possibility of a *de minimis* adjudication of wells in the Gila River adjudication and the use of "reasonable simplifying assumptions" as an effective tool to make progress in the adjudication. *In re General*

Adjudication of all Rights to Use Water in the Gila River System and Source, 857 P.2d 1236 (1993).

In the aftermath of this decision, the Master indicated at the August 18, 1993, status conference that he desired to proceed to an evidentiary hearing on what he considered to be the threshold issue in this consolidated case: Are stockponds, stockwatering, and domestic uses located in the San Pedro River watershed *de minimis* in the context of the Gila River system and should they be adjudicated in an abbreviated or summary fashion?

The Master requested a technical report by the Department of Water Resources (DWR) on the magnitude of these uses in the San Pedro River watershed and adopted a schedule leading to trial. The Department's report, *Technical Report on De Minimis Adjudication of Domestic, Stockpond and Stockwatering Uses in the San Pedro Watershed* (hereinafter "DWR Technical Report"), was filed on November 19, 1993, and was later received into evidence at the trial as Exhibit No. 65. The actual trial commenced on March 22, 1994, and continued for seven days. Thereafter, legal briefing and the submission of proposed findings of fact continued through August 1994. The litigants active in the trial and post-trial briefing were the United States; State of Arizona; Gila River Indian Community; San Carlos Apache Tribe; Tonto Apache Tribe; Yavapai Apache Indian Tribe, Camp Verde Reservation (all Indian groups collectively referred to herein as "the Tribes"); City of Phoenix; Salt River Project; and water users Bayless & Berkalew Co., Joseph L. Goff, Harry T. Hendrickson, Virgil E. Mercer, Ronald Pyeatt, Jeptha O. White, and Anthony Lunt. An *amicus curiae* brief was also filed in behalf of certain Verde Valley claimants.

III. QUESTIONS PRESENTED

The factual and legal questions presented in this phase of this consolidated case are as follows: Are stockwatering, stockponds, or domestic water uses in the San Pedro River watershed *de minimis* in the context of the Gila River adjudication? If these uses are *de minimis*, what are the appropriate summary procedures for adjudicating them? What procedures should be followed to adjudicate any stockwatering, stockponds, or domestic uses not determined in this proceeding to be *de minimis* uses?

IV. CONCEPT OF *DE MINIMIS* WATER RIGHTS

A. General

The concept of *de minimis* water uses has been frequently mentioned in Arizona's general stream adjudication but infrequently defined or discussed at length. *De minimis* is an abbreviation of a longer Latin phrase, *de minimis non curat lex,* which means "the law does not care for, or take notice of, very small or trifling matters." BLACK'S LAW DICTIONARY 431 (6th ed. 1990). The *de minimis* concept has been utilized by American common law courts to resolve disputes pertaining to the adjustment of damage awards, *Buettner v. Polar Bar Ice Cream Co.*, 17 So. 2d 486, 490 (La. App. 1944), and to determine the applicability of the Fair Labor Standards Act to intrastate commerce activities having some degree of effect on interstate commerce, *Hunter v. Madison Ave. Corp.*, 174 F.2d 164 (6th Cir. 1949); *Wiley v. Stewart Sand & Material Co.*, 206 S.W.2d 362 (Mo. App. 1947).

More recently, the *de minimis* concept was embodied in the Comprehensive Environmental Response and Liability Act (CERCLA) which recognizes that contributors of small amounts of material to a hazardous waste site (superfund site) will be considered differently by the regulators in environmental cleanup actions. 42 U.S.C.A. § 9622(g) (1994 Supp.).

De minimis is fundamentally a case management determination by a court that the benefits of resolving certain types of disputes are substantially outweighed by the costs of doing so. There are numerous examples of judicial resources being deployed after comparing the costs of certain procedures with the benefits to be gained. Thus, criminal cases have calendar priority over civil cases, *e.g.*, MARICOPA COUNTY SUPER. CT. LOCAL R. 2.2(a), and smaller money-based lawsuits are submitted to arbitrators in lieu of general jurisdiction judges, *e.g.*, *id.* at 3.10(a); UNIF. R. P. ARB. 1(b).

In many complex civil cases, state and federal courts have faced circumstances similar to this water adjudication where traditional litigation, by exhausting the resources available through attorneys' fees and costs, would produce a result benefiting no one. The parties and the courts have often developed nontraditional means to avoid this result. In the field of mass tort litigation, innovative procedures, commonly called "claims resolution facilities," have been employed to shorten litigation and compensate victims in a summary fashion. If litigation had continued, any assets available to compensate victims would have been dissipated. *See* Symposium, *Claims Resolution Facilities and the Mass Settlement of Mass Torts*, 53 LAW & CONTEMP. PROBS. 1 (1990); *Georgine v. Amchem Products Inc.*, No. 93-CV-0215 (D. Pa. Aug. 16, 1994).

One particularly relevant summary process stems from products liability litigation against A.H. Robins, Co., the sole manufacturer of 2.2 million Dalkon Shield intrauterine devices. In 1974, A.H. Robins filed for protection under chapter 11 of the Bankruptcy Code when present and potential claims against the company exceeded its assets.[2] In an effort to ascertain its ultimate liability, A.H. Robins asked the Bankruptcy Court to determine the aggregate value of all claims, estimates of which ranged from $800 million to $7 billion. It was apparent that the assets available to compensate victims would be exhausted if traditional litigation continued.[3] After receiving the report of a court-appointed expert and holding an evidentiary hearing, the federal district court determined the aggregate value of all claims, and hence the maximum amount of potential recovery against A.H. Robins, to be $2.475 billion. The court then accepted a proposal by A.H. Robins to distribute this money through a trust using a variety of summary procedures to consider claims for injury. These procedures allow prompt payments for many injuries, pursuant to a schedule adopted by the trustees, based only on claimants' affidavits or medical reports.[4]

B. *De Minimis* Determinations in Water Adjudications

Several litigants have argued that the *de minimis* concept should not be utilized in Arizona's general stream adjudication since it is not specifically mentioned in the statute, has never before been used in the adjudication, and has uncertain meaning. The following sections more fully discuss the potential use of the *de minimis* concept in the water adjudication.

1. Arizona's General Stream Adjudications

As previously mentioned, the *de minimis* concept received formal recognition in the Gila River adjudication when the Arizona Supreme Court, as part of its July 27, 1993, opinion on the so-called "subflow" issue, recognized that "the trial court may adopt a rationally-based exclusion for wells having a de minimis effect on the river system. Such a de minimis exclusion effectively allocates to those well owners whatever amount of waters it determined to be de minimis. It is, in effect, a summary adjudication of their rights." 857 P.2d 1236, 1248 (1993). There is nothing in the court's opinion or logic to suggest that wells are the only water uses that may be candidates for *de minimis* treatment in this adjudication.

Certain small uses have already been determined to be *de minimis* in the Silver Creek watershed, part of the Little Colorado River adjudication. In

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[2]In re A.H. Robins, Co., 88 B.R. 742 (E.D. Va. 1988).

[3]Over 300,000 persons filed claims for compensation.

[4]Challenges to the distribution plan were rejected by the Fourth Circuit. In re A.H. Robins, Co., 880 F.2d 694 (4th Cir. 1989), *cert. denied sub nom.*, Menard-Sanford v. A.H. Robins Co., 493 U.S. 959 (1989).

his Apr. 20, 1994, memorandum decision, the Special Master recognized that stockwatering, wildlife, stockponds of a certain size, and water uses in closed basins are *de minimis*. Memorandum Decision, *In re Reporting of Diversion Information and Other Objections*, No. 6417-033-9005 (Apache County Super. Ct. 1994). The Master set forth the procedures for adjudicating these rights in a summary or expeditious fashion. The procedures adopted for small uses in the Little Colorado River system differ from those announced in this decision for the San Pedro River system. These summary procedures must be fashioned to the unique character of each watershed.

2. **Other Western States**

The Department of Water Resources stated in its report that other western states have afforded a *de minimis*-type treatment to certain small water uses. DWR Technical Report at 14-28. In the initial water rights permitting process, some states may not require that certain small uses receive a permit. In Washington, for instance, a permit is not required for groundwater uses commenced after June 6, 1945, if the water is used for stockwatering, the watering of a lawn or noncommercial garden of one-half acre of less, a single or group domestic use of 5,000 gallons per day (gpd), or an industrial use of 5,000 gpd or less. Nevertheless, these uses are recognized as water rights. WASH. REV. CODE ANN. § 90.44.050 (1992). In Wyoming, a permit is still necessary; but appropriations of underground water for stock or domestic uses not exceeding 0.056 cubic feet per second (cfs) or 25 gallons per minute (gpm) "have a preferred right over rights for all other uses, regardless of their dates of priority . . . ." WYO. STAT. §§ 41-3-907 (1977).

Small water uses are sometimes considered *de minimis* under interstate compacts, such as the Yellowstone River Compact among Montana, Wyoming, and North Dakota, where domestic and stockwatering uses with 20 acre-feet or less of storage are excluded from the compact provisions. Art. V(E)(1), MONT. CODE ANN. § 85-20-101 (1993).

Similar approaches have been used for certain small uses in general stream adjudications. In Montana, claims for existing livestock and individual domestic uses based on instream flow or groundwater sources were not required to be filed in the state-wide adjudication. Such claims could be filed voluntarily. MONT. CODE ANN. § 85-2-222 (1993). The Master is not aware of this exclusion of uses producing a serious challenge to the comprehensiveness of the adjudication.

Idaho's Snake River adjudication is using a procedure to defer the final adjudication of most domestic and stockwatering uses. In approving a stipulation entered into between the State of Idaho and the United States, the court ordered that these *de minimis* claimants could "elect to have their claims fully adjudicated now or to postpone the adjudication of their claims

by following [an] alternative procedure . . . ." Findings of Fact, Conclusions of Law, and Order Establishing Procedures for Adjudication of Domestic and Stock Water Uses 5, No. 39576 (Idaho Dist. Ct. Jan. 17, 1989). By deferring the adjudication of their claims, *de minimis* claimants need not file a claim or pay a filing fee. However, these claimants are not entitled to enforcement of their water right or to change their place or manner of diversion unless the right has been finally determined. A motion for determination must be filed with the court, and the amount finally adjudicated must be no more than the amounts provided for those uses in statute. *Id.* at 4-6.

3. Conclusion

As in other complex civil cases, the court in the general stream adjudication must decide the appropriate level of resources to devote to the adjudication of small water uses. This is the same calculus that a court employs when deciding to schedule six months for trial of a nationally significant antitrust case but only a few hours for a small collection case.

The challenge to the adjudication court is to identify the appropriate set of small water uses and determine the amount of litigant and judicial effort that should be expended to decide the ownership, quantity, and other characteristics of these rights. In essence, what the court is attempting to achieve is a balance between the private and public needs for a specification of these rights and the resources appropriate for making this determination.

V. ARE CERTAIN WATER USES *DE MINIMIS* IN THE SAN PEDRO RIVER WATERSHED?

The Special Master has posed the question of whether stockwatering, stockponds, and domestic uses in the San Pedro River watershed are sufficiently small as to justify the conclusions that they are *de minimis* and can be summarily adjudicated.

If a single use, or a category of similar uses, utilizes only small amounts of water, a detailed adjudication of these rights may not be needed. If these uses consume only small amounts of water, or the captured water would otherwise not reach downstream appropriators, these uses do not likely impermissibly interfere with other water users. If these water uses do not interfere with the water available for other users, the amount of judicial resources necessary to determine with exactitude such characteristics as priority date and quantity can be reduced through the use of summary procedures and proposed water right characteristics.

This approach is consistent with the Arizona Supreme Court's endorsement of "reasonable simplifying assumptions" for conducting

Arizona's general stream adjudications. 857 P.2d 1236 (1993). The approach is also similar to the one employed in the previously discussed *Robins* case where an important threshold hearing was held to determine Robins' maximum liability and summary procedures were used later to allocate that fund of money to victims.

In determining whether certain San Pedro River water uses are *de minimis* in the Gila River system, the Master examines these four factors:

- water availability in the watershed;
- the number of stockwatering, stockpond, and domestic uses;
- the extent and impact of these uses; and
- the costs and benefits of a complete, rather than abbreviated, adjudication of these small uses.

Before undertaking this analysis, however, the definitions and legal status of these uses are examined.

A. Definitions

1. Discussion

Stockwatering is a beneficial use of water in Arizona, as recognized by section 45-151(A), ARIZ. REV. STAT. ANN. (1994). Stockwatering can occur at an unimproved location on a stream; at an improved location on a stream; or at a drinker, tank, or stockpond receiving water from a stream, well, runoff, or other source. For purposes of this adjudication, instream stockwatering is distinguished from stockwatering at a stockpond.

A stockpond is statutorily defined as "a pond having a capacity of not more than fifteen acre feet that is used solely for watering livestock or wildlife." *Id.* § 45-271.

Domestic uses of water are also beneficial uses of water. *Id.* § 45-171(A). While not directly taken up in this case, wildlife watering is also a beneficial use of water. *Id.* For purposes of the adjudication, however, more precise definitions of all these uses are necessary in order to distinguish them from similar uses; and these definitions are provided in the following conclusions of law.

2. Conclusions of Law

Conclusion of Law No. 1. Stockwatering, wildlife watering, stockponds, and domestic uses are beneficial uses of water.

Conclusion of Law No. 2. A stockwatering (SW) beneficial use will be adjudicated for unimproved and improved instream watering by stock (without storage).

Conclusion of Law No. 3. A stockpond (SP) beneficial use will be adjudicated for a pond having a capacity of not more than (≤) 15 ac-ft that is used solely for watering livestock or wildlife.

Conclusion of Law No. 4. A stockpond (SP) beneficial use will also be adjudicated for an artificial storage facility where the use is solely for watering livestock or wildlife and the capacity is not more than (≤) 15 ac-ft.

Conclusion of Law No. 5. An appropriation of water may be made for the joint watering of stock and wildlife (WL) at the same pond or instream location. Two beneficial uses, SW or SP and WL, will be assigned for these joint uses.

Conclusion of Law No. 6. A domestic use (DM) will be adjudicated for the use of privately supplied water by persons in a permanent dwelling; the watering of pets and farmyard animals; and the irrigation of lawns, gardens, and orchards on land adjoining the dwelling.

B. Water Availability

1. Discussion

As part of a water budget of watershed supplies and uses, the Department of Water Resources reported the total water supply in the San Pedro River watershed to be 158,610 acre-feet per year (ac-ft/yr). Ex. No. 69 (HSR Table 4-12). This total includes surface and groundwater inflow, tributary surface water, groundwater recharge, and imports. There has been little disagreement with this figure although the State Land Department urged a figure of 159,200 ac-ft/yr (perhaps based on an earlier figure DWR corrected).

The litigants expressed considerably more disagreement about the amount of water that is discharged from the mouth of the San Pedro River near Winkelman after natural and cultural uses upstream. The water available at the San Pedro's mouth is of interest to downstream users such as the Salt River Project and the Tribes who may partially rely on this water and, at least in the case of the Tribes, have limited storage ability. The Tribes

argued that DWR's estimate of the slight magnitude of stockwatering, stockponds, and domestic uses in the watershed results from a flawed methodology that produces exaggerated conclusions about the amount of water usually available at the river's mouth. If less water is normally available at the mouth, then relatively more water is used for stockwatering, stockponds, and households--perhaps disqualifying them as *de minimis* uses.

Unfortunately, the U.S. Geological Survey maintained a gage at the mouth of the San Pedro River near Winkelman (No. 09473500) for only a nine-year period from 1967 to 1975. Ex. No. 68 (streamflow data). Estimates of streamflow before and after that period must be interpolated using data from neighboring gages with longer periods of record. 1 HYDROGRAPHIC SURVEY REPORT FOR THE SAN PEDRO RIVER WATERSHED (hereinafter "HSR") App. F at F-4 to F-8.

U.S. Geological Survey records for the 1967 to 1975 period indicate that the annual surface water flows at the Winkelman gage averaged 35,853 ac-ft but ranged from a high of 87,900 ac-ft in 1971 to a low of 9,380 ac-ft in 1975. In its hydrographic survey report, DWR used data from neighboring gages and estimated statistically that mean (average) surface water flow for the period of 1968 to 1988 was 56,540 ac-ft/yr. Ex. No. 7 at 250 (HSR); 1 HSR App. F at F-7. DWR also estimated that 1,570 ac-ft of groundwater flows out of the watershed each year. *Id.*

In presenting their case, the Tribes argued that the cardinal defect in DWR's methodology is the use of mean (average) values rather than median (middle) values in estimating the volume of water discharged near Winkelman. The Tribes argued that the median annual flow at Winkelman is 4,524 ac-ft. Ex. No. 89; Trial Tr. 1206-15 (Gookin).[5] The witness indicated flood events bring up the average for the period of record; but the average does not provide a reliable indication of how much water can normally be expected in the river. *Id.* at 1207-08. "In hydrology," witness Gookin testified, "it is much more common when you are dealing with stream flows to use the median as a more representative number to reflect what kind of stream flows you would normally expect to see in a river." *Id.*

The Tribes' argument is supported by basic statistics. One commentator has compared the utility of mean and median values as follows:

> If the numbers in a group fall more or less symmetrically to either side of their average value, then the average may be an adequate summary of the group, but if the numbers in a group

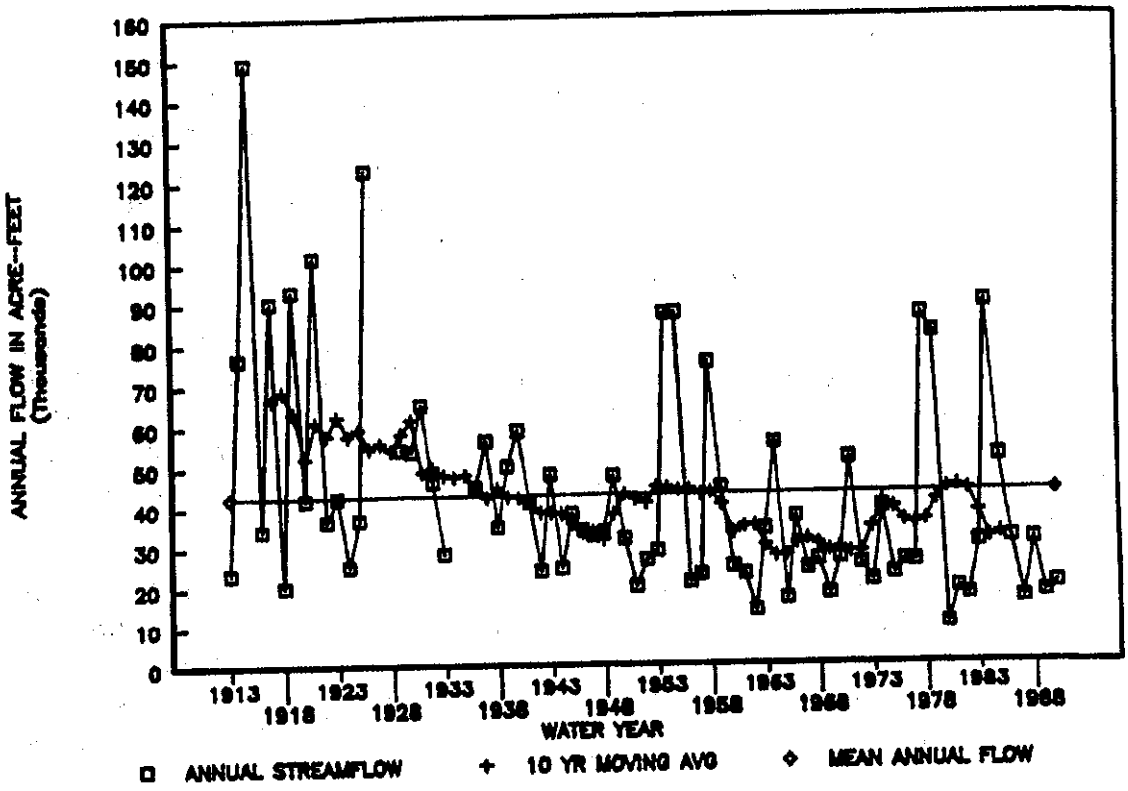
[5]While the Tribes in their brief indicate that Mr. Gookin testified that the median annual flow is 4,524 ac-ft, the Master has been unable to find this exact figure in the record. The values reported in Ex. No. 89 appear to produce a median value in this range.

> are asymmetrical, perhaps with many members being slightly less than the average and a few being substantially more than the average, then a different measure of the center or location of the group may be more informative. One such measure is the *median*, the middle number in the group when its members are arranged in ascending order, or the average of the two middle numbers when the number of numbers in the group is even. In the asymmetrical case mentioned above, the average exceeds most of the numbers in the group, while the median falls squarely in the middle of the group.

DAVID W. BARNES AND JOHN M. CONLEY, STATISTICAL EVIDENCE IN LITIGATION § 2.7.1 (1986) (emphasis in original). *See also* G. M. CLARKE & D. COOKE, A BASIC COURSE IN STATISTICS 17 (1992) ("In general, the median is a better measure than the mean when the population of data has a skew distribution; the mean can be misleading if the distribution is not symmetric or almost symmetric.").

The department's HSR lends support for the argument that the San Pedro is a highly variable river and that average calculations have limited utility. The HSR indicates that "[f]lows in the San Pedro River and its tributaries are variable, fluctuating radically from season-to-season and year-to-year. Longer term variations are also evident." Ex. No. 7 at 88 (HSR). The HSR also presents a graph, Figure 2-15, which depicts the annual streamflow of the San Pedro River at Charleston, a location mid-point in the watershed. The graph, based on data from the gage with the longest period of record (1913-90) in the watershed clearly shows annual flows vary greatly from approximately 15,000 to 150,000 ac-ft "[a]lthough lower than average flows predominate." Ex. No. 7 at 88-89 (HSR).

Figure 2-15, 1 HSR 89



From this discussion, it follows that the amount of water reliably available at the mouth of the San Pedro River watershed is not of the magnitude estimated by DWR in its water budget. While the volume of outflow at the mouth may be in the range of 35,800 ac-ft/yr to 56,540 ac-ft/yr, based on average figures, the flow and amount of water usually in the river is considerably less. The Tribes' witness calculated that, for the period of 1962-77 (years expanded with other U.S. Geological Survey information), the average median streamflow at the watershed mouth was 6.26 cfs or 4,524 ac-ft/yr. Ex. No. 89.[6] The 1967-75 data reported by the U.S. Geological Survey indicates that streamflow at the Winkelman gage was 6.1 cfs or less for 57.2 percent of the days during that nine-year period (a 6.1 cfs flow is equivalent to 4,416 ac-ft/yr). Ex. No. 68.

The amount of water reliably available at the mouth of the river is important in this decision since it is the base against which the impact of stockwatering, stockpond, and domestic uses are compared. Average watershed outflow is exaggerated by flood events. In evaluating the impact of upstream uses, downstream users are more interested in the effect on flows

[6] *See* n. 5, *supra*.

and volumes that can usually be expected. The use of the median figure better achieves this purpose.

2. Findings of Fact

Finding of Fact No. 1. The total water supply of the San Pedro River watershed is 158,610 ac-ft/yr. Ex. No. 69 (HSR Table 4-12).

Finding of Fact No. 2. Average annual surface water outflow from the San Pedro River watershed is between 35,853 ac-ft and 56,540 ac-ft. Ex. No. 68 (Ariz. streamflow data); Ex. No. 69 (HSR Table 4-12).

Finding of Fact No. 3. Average annual groundwater outflow from the San Pedro River watershed is 1,570 ac-ft. Ex. No. 69 (HSR Table 4-12).

Finding of Fact No. 4. The use of median values, rather than mean values, is the preferable statistical technique when estimating water supply and outflow in a watershed, such as the San Pedro, with highly variable water production.

Finding of Fact No. 5. The median surface water flow at the mouth of the San Pedro River, for the period of 1962-77, is approximately 6.2 cfs. This flow produces 4,524 ac-ft/yr. Ex. No. 89 (graph and data).

Finding of Fact No. 6. Based on the nine-year period of record at the U.S. Geological Survey's Winkelman gage at the mouth of the San Pedro River, streamflow could be expected to be 6.1 cfs or less for 57 percent of the time. Ex. No. 68 (Ariz. streamflow data). This flow produces 4,416 ac-ft/yr.

Finding of Fact No. 7. Based on the available period of record, the median flow at the mouth of the San Pedro River is approximately 6.1 cfs yielding approximately 4,500 ac-ft/yr. Ex. No. 89 (graph and data); Ex. No. 68 (Ariz. streamflow data).

C. Number of Small Uses

1. Discussion

Before trial, the litigants reached general agreement on the number of stockwatering uses, stockponds, and domestic uses in the San Pedro River watershed. They identified approximately 1,640 stockwatering uses and between 1,852 and 1,890 stockponds.

The tabulation of domestic uses is more difficult. The department reports approximately 2,889 domestic uses in the San Pedro River watershed although this figure includes uses that were not claimed in the adjudication.

The HSR reports approximately 2,600 of those uses. Approximately 2,250 of these uses appear to be self-supplied domestic uses serving residential purposes. An exact number is unnecessary; what is more important is the cumulative amount of water consumed by these uses and their potential impact on downstream users, a matter discussed in section V(D), *infra*.

2. Findings of Fact

Finding of Fact No. 8. Stockwatering (SW), stockponds (SP), and domestic uses (DM) comprise approximately 23 percent, 26 percent, and 35 percent, respectively, of the total number of potential water rights (PWRs) DWR has reported for the San Pedro River watershed. Ex. No. 65 at 77 (DWR Technical Report).

Finding of Fact No. 9. There are approximately 1,640 stockwatering uses (SW) in the San Pedro River watershed. Uncontested Fact II(1), Joint Pretrial Statement (Mar. 7. 1994); Ex. No. 65 at 63 (DWR Technical Report).

Finding of Fact No. 10. There are 47 stockwatering uses from springs. Ex. No. 65 at 71 (DWR Technical Report).

Finding of Fact No. 11. The majority of these stockwatering uses are from ephemeral tributaries to the perennial or intermittent streams in the San Pedro River watershed. Ex. No. 65 at 71 (DWR Technical Report).

Finding of Fact No. 12. There are approximately 36,000 cattle grazing in the San Pedro River watershed. Ex. No. 25 at 14 (Gookin report).

Finding of Fact No. 13. Rangelands in Arizona are stocked with fewer cattle now than in the past. Trial Tr. at 513 (Brophy).

Finding of Fact No. 14. There are between 1,852 and 1,890 stockpond uses (SP) in the San Pedro River watershed. Uncontested Fact II(6), Joint Pretrial Statement (Mar. 7. 1994); Ex. No. 65 at 63 (DWR Technical Report).

Finding of Fact No. 15. Few stockponds have been constructed in the last decade. Trial Tr. at 480, 486 (Brophy).

Finding of Fact No. 16. Most of the locations suitable for stockponds on rangelands in Arizona have been developed. Trial Tr. at 481 (Brophy).

Finding of Fact No. 17. Approximately 721 stockponds (or 40 percent of all stockponds) in the San Pedro River watershed are located on land owned by the Arizona State Land Department. Uncontested Fact II(10), Joint Pretrial Statement (Mar. 7. 1994).

Finding of Fact No. 18. All stockponds are located on minor ephemeral tributary streams or washes. There are no stockponds located on perennial or intermittent streams in the watershed. Ex. No. 65 at 63 (DWR Technical Report).

Finding of Fact No. 19. There are 2,538 domestic uses (DM) not associated with other irrigation uses (OT) reported in the San Pedro River Watershed HSR. Uncontested Fact II(13), Joint Pretrial Statement (Mar. 7, 1994).

Finding of Fact No. 20. There are 57 domestic uses (DM) reported in the HSR associated with other irrigation (OT) uses. Uncontested Fact II(14), Joint Pretrial Statement (Mar. 7, 1994).

Finding of Fact No. 21. There are 35 nonresidential domestic uses. Ex. No. 65 at 33 (DWR Technical Report).

Finding of Fact No. 22. Approximately three percent (a total of 80) of all domestic uses in the watershed are supplied from surface water and the remaining 97 percent are supplied from wells. Ex. No. 65 at 56 (DWR Technical Report).

Finding of Fact No. 23. Of the 2,538 domestic uses not associated with other irrigation use, 2,249 possess a unique diversion serving residential/household purposes. Uncontested Fact II(13), Joint Pretrial Statement (Mar. 7, 1994).

Finding of Fact No. 24. Of the 2,538 domestic uses not associated with other irrigation use, 289 either possess a diversion that also serves a non-domestic PWR [*e.g.*, a PWR for irrigation (IR), industrial (ID), mining (MI), or storage (SR or PS)], or have other distinctive characteristics (*e.g.*, DM is not self-supplied, serves mobile homes or RV parks). Uncontested Fact II(13), Joint Pretrial Statement (Mar. 7, 1994).

D. Impact of Small Uses

The three types of small uses--stockwatering, stockponds, and domestic uses--are examined for a better understanding of their impact on other water users in the Gila River system. The possible impact on users below the mouth of the San Pedro River is the focus of this inquiry since there have been no objections by users in the San Pedro River watershed to neighboring stockwatering, stockponds, or domestic uses.

1. Stockwatering Uses

Of the three water use types examined in this proceeding, stockwatering has been conceded by all to have virtually no impact on the water supply of the river system. A single animal unit (a cow-calf pair), since it consumes only 0.011 ac-ft/yr of water, is unlikely to have an impact on neighboring or downstream uses. Even if all stockwatering uses in the watershed were considered together, DWR reported that it would require as many as 51,400 animal units to consume one percent of the surface water outflow. As previously determined, there are only approximately 36,000 cattle now grazing in the San Pedro River watershed so the total impact is much less than one percent.

2. Stockponds

The litigants debated at great length the typical size and capacity of stockponds and whether these impoundments also have a *de minimis* impact on the river system. Four sets of data became important for determining the size and capacity of these ponds: 71 stockponds that were in the watershed file reports designated in this contested case; 721 stockponds located on state-owned land that were surveyed by the State Land Department; 1,355 stockponds registered under the Stockpond Registration Act, ARIZ. REV. STAT. ANN. §§ 45-271 to -276 (1994); and 322 stockponds that were surveyed by DWR. Each of these sets of data lends support for certain conclusions about the typical size and capacity of San Pedro River stockponds.

Before trial, the litigants agreed either partially or completely on the characteristics for the 71 stockponds designated for this case. For 67 percent of these ponds, the litigants agreed that the individual capacities were no more than (≤) 4 ac-ft.

After eliminating duplicates, approximately 1,355 stockponds (or approximately 70 percent of the stockponds in the watershed) were matched to previous Stockpond Registration Act filings. Seventy-eight percent of these stockponds were claimed as having a capacity of (≤) 4 ac-ft or less.

In registering its stockponds and preparing for the adjudication, the State Land Department completed on-the-ground surveys of its 721 stockponds (almost 40 percent of all stockponds in the watershed). The State developed a methodology, called the Estimated Maximum Volume (EMV) system of measurement, to reliably estimate the volume of its ponds. Almost 75 percent of these ponds were also found to have a capacity of (≤) 4 ac-ft or less. This data also indicated that the average size of the State Land Department stockponds is 3.1 ac-ft.

Based on this data, three-quarters of all San Pedro River watershed stockponds can be reliably predicted to have individual capacities of no more than (≤) 4 ac-ft. The testimony of DWR also established that these ponds can be expected to fill approximately one time per year (1.12 times). A quantification of 4 ac-ft/yr for stockponds claimed or determined to have a capacity of no more than (≤) 4 ac-ft would be reasonably related to actual use and provide little margin for expansion since, as one rancher testified, there is little economic incentive to enlarge existing ponds. Thus, while the volumes of these smaller stockponds could be more precisely determined, the costs of doing so would outweigh the benefits.

The fourth data set, DWR's survey of 322 stockponds assists in this regard. Using this data set, DWR utilized regression analysis to develop a formula correlating the surface area of individual ponds with anticipated capacity [(capacity=6.03(surface area) + (-2.22)]. The formula predicts that a stockpond of one surface acre will have a capacity of almost 4 ac-ft. Remote imaging techniques, which were described at trial, allow DWR to identify readily stockponds of (≤) 4 ac-ft or less and to monitor unauthorized expansions of ponds beyond that limit. Remote imaging and regression analysis also allow DWR to reliably estimate the size of larger stockponds.

While these four data sets provide reliable indications of the size and volume of stockponds in the San Pedro River watershed, the Master still must evaluate the individual and cumulative impact of these ponds on other water users. In its technical report and again at trial, DWR presented its methodology and findings for estimating the amount of water used or "depleted" by individual stockponds. Arguing that animal watering is nominal and all seepage from a pond eventually returns to the San Pedro River, DWR concluded that the only measurable loss from a typical stockpond is through evaporation. Since the average size of the great majority of stockponds (those less than (<) 2 surface acres) is 0.5 acres, DWR calculated the depletion from a stockpond to be 1.3 ac-ft/yr. While other litigants argued about some of the assumptions, *e.g.*, average size, the evaporation pan coefficient used, losses to evapotranspiration by riparian vegetation, the estimate of 1.3 ac-ft/yr appears to be a reliable estimate of the magnitude of depletion by individual stockponds.

Although individual stockpond uses are small, how much water is used by all the San Pedro River watershed stockponds when considered together? The department estimated the capacity of all San Pedro River watershed stockponds to be approximately 7,200 ac-ft, which is 4.5 percent of the total annual water supply in the watershed.

The more pertinent question, however, is how much of the 7,200 ac-ft/yr would be realistically available for downstream users? How much water would be lost to evapotranspiration, channel infiltration, and other factors if

not captured by the stockponds? Utilizing a technique called "undepleted flow analysis," the Department of Water Resources estimated that, without stockponds, only 2,000 additional ac-ft/yr of water would be available at the mouth of the watershed at Winkelman. When only stockponds having a surface area of less than (<) 2 surface acres are "eliminated," the amount of additional water available at the river's mouth drops to 1,360 ac-ft/yr.

3. Domestic Uses

The same questions must be asked about the domestic uses in the watershed. What is the size of individual domestic uses? What is the cumulative impact of all domestic uses? How much more water would be available if these domestic uses did not exist?

In estimating the size of individual domestic uses, DWR studied the amount of water supplied by small rural water companies in the watershed. The department found that average annual water use per domestic use averaged between 0.3 and 0.4 ac-ft. The department concluded that "self-supplied domestic uses average less than 0.5 acre-feet per year per residence." Ex. No. 65 at 58. This usage, which approximates 150 gallons per day for a typical household of three persons, is "constrained by financial and geographic considerations that usually result in water uses that are less than those found in urban areas supplied by municipal water providers." *Id.*

Another expert reported that a reasonable estimate of individual self-supplied residential uses in the San Pedro River watershed is 1.0 ac-ft/yr which is based on a typical household of three persons and irrigation and the watering of pets and farmyard animals on an adjoining 0.2 ac of land (a parcel of approximately 93' x 93'). Ex. No. 14 at 4 (Ten Eyck report).

The Department of Water Resources further estimated that 80 percent of this water is consumed and only 20 percent returns to the San Pedro River through outdoor watering and the outflow from the septic systems which serve most of these households.

Based on its estimate of 0.5 ac-ft/yr for each domestic use, DWR calculated that total water use by the approximately 3,000 domestic uses in the San Pedro River watershed is 1,500 ac-ft/yr. Applying once again its undepleted flow analysis, DWR concluded that the elimination of all domestic uses would increase the flow of water at the river's mouth by 550 ac-ft/yr.

4. Findings of Fact

Finding of Fact No. 25. Each animal unit (1 cow/calf pair) consumes approximately 0.011 ac-ft of water per year. Ex. No. 65 at 71 (DWR Technical Report).

Finding of Fact No. 26. Approximately 51,400 animal units would have to use a perennial stream as the sole source of water for an entire year in order to consume one percent of the available surface water outflow. Ex. No. 65 at 71 (DWR Technical Report).

Finding of Fact No. 27. Water consumption by the 36,000 animal units now grazing in the San Pedro River watershed is much less than one percent of the available surface water outflow. Ex. No. 25 at 14 (Gookin report); Ex. No. 65 at 71 (DWR Technical Report).

Finding of Fact No. 28. The consumption of water by livestock at instream locations with no physical improvements or at unimproved springs has minimal impact on the water outflow from the San Pedro River watershed. Uncontested Facts II(4 & 5), Joint Pretrial Statement (Mar. 7, 1994); Ex. No. 65 at 71, 83-85 (DWR Technical Report); Trial Tr. at 82 (Erb).

Finding of Fact No. 29. There are 71 stockponds in the lead watershed file reports designated by the Special Master. In reviewing these WFRs, the litigants agreed to a volume capacity for 52 stockponds. Of these, 67 percent (35 ponds) have an agreed-upon capacity of less than or equal to (≤) 4 ac-ft. Uncontested Facts II(11 & 12 & Appendix F), Joint Pretrial Statement (Mar. 7, 1994).

Finding of Fact No. 30. Of the 1,852 stockpond uses reported by DWR in the San Pedro HSR, 1,579 stockponds have associated adjudication and/or pre-adjudication filings. A total of 1,355 stockponds reported in the HSR have Stockpond Registration Act (SPRA) filings, while an additional 224 stockponds have other associated pre-adjudication and/or adjudication filings. Uncontested Fact II(8), Joint Pretrial Statement (Mar. 7, 1994); Appendix A thereto. Of the 1,355 stockponds with applicable SPRA filings, over 77 percent claimed a volume capacity of less than or equal to (≤) 4 acre-feet. Trial Tr. at 261 (Erb); Trial Tr. at 996, 997 (Ten Eyck); Ex. No. 14 at 11, Table 1 & Table 2 (Ten Eyck report).

Finding of Fact No. 31. Forty-four and nine-tenths percent (44.9%) of the acreage in the San Pedro River watershed is owned by the State of Arizona. Trial Tr. at 465 (Laney). Of the 1,852 stockponds identified by DWR in the HSR, approximately 40 percent (721 ponds) are located on state-owned land.

Finding of Fact No. 32. All 721 of the State-owned stockponds have associated statements of claimant and SPRA filings, which list the volume capacity of the pond, as physically measured by State personnel, using the Estimated Maximum Volume (EMV) system of measurement. Trial Tr. at 611 (Young).

Finding of Fact No. 33. The State of Arizona has conducted studies to evaluate the accuracy of the EMV system of measurement. Trial Tr. at 611 (Young). These studies concluded that the method accurately measures the dimensions of the pond, and that the accuracy of the method is not affected by the presence or absence of silt in the pond. Trial Tr. at 618, 620 (Young).

Finding of Fact No. 34. The average capacity of State-owned stockponds in the San Pedro River watershed is 3.1 ac-ft. Trial Tr. at 466 (Laney).

Finding of Fact No. 35. Approximately 75 percent of the stockponds located on State-owned lands in the San Pedro River watershed have a volume capacity of no more than (≤) 4 ac-ft. Trial Tr. at 996 (Ten Eyck); Ex. No. 14 at 9 (Ten Eyck report).

Finding of Fact No. 36. It is unlikely that existing stockponds will be enlarged. Ex. No. 65 at 86 (DWR Technical Report); Trial Tr. at 142, 155-56, 166, 168, 339, 341-42, 388 (Erb); Trial Tr. at 485, 507, 514 (Brophy); Trial Tr. at 531, 534-35 (Young); Trial Tr. at 467-68 (Laney); Trial Tr. at 195 (Lunt).

Finding of Fact No. 37. The size of stockponds can be determined and monitored by satellite imagery that is available to the Department of Water Resources. Data from the Landsat satellite allows surface area to be determined for a parcel as small as 0.22 acres. The SPOT satellite increases the image resolution to 0.02 acres, and a satellite service expected in 1995 will increase image resolution to 0.01 acre. Ex. Nos. 62-64 (diagrams).

Finding of Fact No. 38. DWR has developed a means of reliably estimating capacity of stockponds based on surface acreage using regression analysis. Trial Tr. at 117 (Erb); Ex. No. 61 (diagram).

Finding of Fact No. 39. According to DWR's regression analysis based on field investigation of 322 stockponds in the San Pedro River watershed, a stockpond with a surface area of one acre would have a statistically predicted storage capacity of 3.81 ac-ft. Ex. No. 61 (diagram).

Finding of Fact No. 40. Based on DWR's regression analysis, a stockpond in the San Pedro River watershed with a surface area of two acres would have a statistically predicted storage capacity of 9.8 ac-ft. Ex. No. 61 (diagram). However, 46 percent of the 1,355 stockponds with SPRA filings have been claimed or found to have a capacity of 1 ac-ft or less. More than 90

percent of these ponds have been claimed or found to have a capacity less than 9.8 ac-ft. Ex. No. 14 at 11 (Table 2) (Ten Eyck report).

Finding of Fact No. 41. The typical stockpond in the San Pedro River watershed has a surface area of 0.5 acres and fills approximately one time (1.12) per year. Ex. No. 65 at 63, C-2 (DWR Technical Report); Ex. No. 59 (diagram).

Finding of Fact No. 42. Evaporation is the only measurable loss from a typical stockpond in the San Pedro River watershed. Ex. No. 65 at 67-69 (DWR Technical Report).

Finding of Fact No. 43. All measurable seepage from the typical stockpond in the San Pedro River watershed eventually returns to the San Pedro River. Ex. No. 59 (diagram).

Finding of Fact No. 44. The depletion from the typical San Pedro River watershed stockpond (water that never returns to the system) is 1.3 ac-ft/yr. Ex. No. 59 (diagram).

Finding of Fact No. 45. The figure of 1.3 ac-ft/yr is a reliable estimate of the magnitude of depletion by the great majority of individual stockponds in the San Pedro River watershed. Ex. No. 59 (diagram).

Finding of Fact No. 46. The capacity of all stockponds in the watershed total approximately 7,200 ac-ft, which is 4.5 percent of the total water supply in the watershed. Ex. No. 65 at 63 (Table 3-4) (DWR Technical Report).

Finding of Fact No. 47. Based on undepleted flow analysis, 2,000 additional ac-ft of water would be available at the mouth of the watershed at Winkelman if all stockponds in the watershed did not exist. Ex. No. 65 at 64 (Table 3-5) (DWR Technical Report).

Finding of Fact No. 48. Based on undepleted flow analysis, 1,360 additional ac-ft of water would be available at the mouth of the watershed at Winkelman if all stockponds having a surface acre of less than (<) 2 surface acres did not exist. Ex. No. 65 at 69 (DWR Technical Report).

Finding of Fact No. 49. For the typical household in the San Pedro River watershed, 80 percent of the water is consumed and only 20 percent returns to the San Pedro River through outdoor watering and the outflow from the septic system. Ex. No. 58 (diagram).

Finding of Fact No. 50. Based on the estimate of 0.5 ac-ft/yr for each domestic use, total water use by the approximately 3,000 domestic uses in the

San Pedro River watershed is 1,500 ac-ft/yr. Ex. No. 65 at 59 (Table 3-2) (DWR Technical Report).

Finding of Fact No. 51. Based on undepleted flow analysis, the elimination of all domestic uses would increase the flow of water at the river's mouth by 550 ac-ft. Ex. No. 65 at 59 (Table 3-2) (DWR Technical Report).

Finding of Fact No. 52. Rather than 0.5 ac-ft/yr, a more reasonable estimate of individual self-supplied residential uses throughout the San Pedro River watershed is 1.0 ac-ft/yr which is based on a typical household of three persons and irrigation and the watering of pets and farmyard animals on an adjoining 0.2 ac of land (a parcel of approximately 93' x 93'). Ex. No. 14 at 4 (Ten Eyck report).

E. Costs and Benefits of a Complete Adjudication of Small Uses

1. Discussion

Even if stockwatering, stockponds, and domestic uses are shown to consume small amounts of water, a complete adjudication of even these small uses is required if the public and private benefits of such an adjudication outweigh the costs of doing so.

The costs of a detailed adjudication of these uses includes the time and money spent by the parties and the court as well as the harm to community goodwill that results from protracted litigation. While the diminishment of water user relationships is difficult to quantify, the resource costs of litigation are not. The landowners and lessees joined in this first consolidated case have borne the costs of a detailed adjudication of these small uses. One of their members testified that legal fees in the amount of $42,000 had been expended in settlement discussions and pretrial proceedings leading up to the trial. This estimate does not include the attorneys' fees and costs of the other parties to the case or the expenses of the court. While this first case is precedential, thus warranting a high level of participation by all involved, this figure does provide an indication of the level of expense that will be incurred for the detailed adjudication of the remaining thousands of stockponds, domestic uses, and instream uses.

Also, if just one-half day were required for the court and Master to organize, notice, try, initially decide, hear exceptions, and finally decide each of the approximately 5,800 small uses considered in this decision, then 2,900 days--or more than eleven years--would be required to complete the adjudication of these small uses. Thus, the benefits of a complete adjudication of these small uses must be demonstrably clear.

The private and public benefits of a complete adjudication of a water right may be summarized as ensuring that the proper owner of the right is identified, the owner has a valid legal basis for the right, and the right is sufficiently described to allow the owner to use the right and others to enforce the right if the circumstances warrant.

In the case of stockwatering, stockponds, and most domestic uses, these private and public benefits do not necessitate a detailed adjudication of every water right characteristic. This is due to one important observation: as a practical matter, these rights are not likely to be administered after the final decree. In times of water shortage, individual water uses--not entire categories of uses--will be subject to the call of senior water users. Individual stockponds, stockwatering, and domestic uses, which usually range in size from virtually nothing to three or four ac-ft/yr, will have priority dates interspersed over a 100-year period with larger uses for irrigation, mining, municipal, and other purposes.

The expense and delay of enforcing a call against these small uses would be impractical save for the most adverse drought conditions imaginable. Since most stockponds have no means of releasing water, they would have to be breached; but there would be little assurance that any of the water would benefit the senior. The futile call doctrine[7] would constitute a

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[7]The futile call principle is based on an underlying policy of the prior appropriation doctrine to avoid the waste of useful water. While "first in time is first in right" is the general rule, an exception occurs when water might be wasted or go unused by an appropriator. This means that an upstream junior water user is free to divert water for beneficial use during times that the downstream senior is not using the water. "Consistent with this policy has been the holding that even appropriated water can be used by another, as long as that use does not interfere with the prior appropriation." McClellan v. Jantzen, 26 Ariz. App. 223, 225, 547 P.2d 494, 496 (1976); *see also* Lambeye v. Garcia, 18 Ariz. 178, 157 P. 977 (1916); Santa Cruz Reservoir Co. v. Rameriz, 16 Ariz. 64, 141 P. 120 (1914); Zannaras v. Bagdad Copper Co., 260 F.2d 575 (9th Cir. 1958).

Built upon this need to avoid water waste, the futile call doctrine has developed in the western states. The doctrine is best stated in the Nebraska case of Cary v. Cochran, 292 N.W. 239 (Neb. 1940), where downstream senior water users had nearly the oldest priority date on the Platte River. Upstream junior users were allowed to divert the water when the state administrator determined that a usable quantity of water would not reach the senior users. This ruling was based upon scientific evidence that much of the water available upstream to diverters would not make the more than 100-mile journey to the senior users' point of diversion. In fact, the court's description of the Platte River could well describe portions of the San Pedro River:

> Losses from evaporation and transpiration are heavy, due to the wide and shallow character of the river. Changes of temperature and varying types of wind add to the uncertainty of the losses resulting from these changing conditions. Losses from percolation vary along the various sectors of the river . . . . Experts with experience on the river estimate that the loss in delivering water from North Platte to the headgate of the Kearney canal with a wet river bed amounts to three times the amount of delivery, and with a dry river

successful defense to most of these calls. As a practical matter, when the river is called, the larger water uses will be the ones to relinquish water to senior downstream users.

2. Findings of Fact

Finding of Fact No. 53. Because of their large number and small size, the administration of stockwatering uses is not practical. Ex. No. 65 at 12, 38-39, 82-83 (DWR Technical Report); Ex. No. 14 at 14 (Ten Eyck report).

Finding of Fact No. 54. No stockpond user is known to have filed objections in the adjudication to another stockpond user's water rights. Ex. No. 65 at 2 (DWR Technical Report); Trial Tr. at 169 (Erb); Trial Tr. at 1102, 1103 (Ten Eyck).

Finding of Fact No. 55. Most stockponds have no mechanism for releasing water. Ex. No. 7 at 566 (HSR); Ex. No. 5 at 171 (Milne & Young); Trial Tr. at 1090 (Ten Eyck).

> bed that it is almost impossible to get water through without a flood or a large sustained flow. . . . The underlying sand and gravel beds thicken as the river moves east. With the bed of the river on the surface of these sands and gravel deposits, it requires a huge amount of water to recharge the river channel and surrounding water table after the river bed once becomes dry. Until the water table is built up to the surface of the river bed, the river channel will not support a continuous flow.

292 N.W. at 244-45. It took 700 cfs to deliver the 162 cfs required downstream. 292 N.W. at 245.

The Nebraska court reasoned that "if it appears that all the available water in the stream would be lost before its arrival at the headgate of the Kearney canal, it would, of course, be an unjustified waste of water to attempt delivery." 292 N.W. at 246. The administrator was allowed to permit upstream diversions by juniors when the water would not reach Kearney in usable quantities.

The futile call doctrine has also been incorporated into the administration and enforcement provisions of Colorado water law. The Water Rights Determination and Administration Act of 1969 provides: "No reduction of any lawful diversion because of the operation of the priority system shall be permitted unless such reduction would increase the amount of water available to and required by water rights having senior priorities." COLO. REV. STAT. § 37-92-102(2)(d) (1990).

See also Washington v. Oregon, 297 U.S. 517 (1936) (futile call doctrine recognized and applied on interstate stream); Colorado v. New Mexico, 459 U.S. 176, 196 (1982) ("[T]he rule of priority is not strictly applied [on interstate stream] where it would 'work more hardship' on the junior 'than it would bestow benefits' on the senior user"); Nebraska v. Wyoming, 325 U.S. 589, 624 (1945) (Court upholds special master's refusal to regulate junior tributary users in behalf of senior users on mainstem interstate stream; "There is some out-of-priority diversions as we have noted. But . . . practical difficulties of applying restrictions which would reduce the amount of water used by the hundreds of small irrigators would seem to outweigh any slight benefit which senior appropriators might obtain").

Finding of Fact No. 56. Administration of individual stockponds is generally not feasible in terms of making water available to downstream users. Ex. No. 6 at 89 (Young); Ex. No. 5 at 172 (Milne & Young); Trial Tr. at 1167-68, 1170-71 (Ten Eyck).

Finding of Fact No. 57. Administration of individual domestic uses is generally not feasible in terms of making water available to downstream users. Ex. No. 65 at 79 (DWR Technical Report).

Finding of Fact No. 58. It is unusual in the West to adjudicate or administer all small uses like domestic, stockponds, and stockwatering uses. Ex. No. 65 at 7-28; Trial Tr. at 318 (Erb); Trial Tr. at 1168 (Ten Eyck).

Finding of Fact No. 59. The six water users in this case spent, as a group, $42,000 in legal fees during the pretrial process. Trial Tr. at 199 (Lunt).

Finding of Fact No. 60. It could take the court system as long as eleven years to complete a detailed, individual adjudication of each stockwatering, stockpond, and domestic use in the San Pedro River watershed.

F. Conclusion

1. Discussion

The Master has examined the important factors for determining whether stockwatering, stockponds, and domestic uses are *de minimis* and can be adjudicated in a summary fashion: the number and size of uses, the individual and cumulative impacts of these uses, and the relative costs and benefits of a complete rather than abbreviated adjudication of these uses. The great number of these small uses--totaling more than 5,800--invites summary treatment if their impacts are small.

In the case of stockwatering uses, the large number of uses, the virtually unnoticeable amounts of water consumed by stock animals, and the few benefits that would result from a detailed adjudication all combine to support summary treatment. While stockwatering uses could be virtually excluded from the adjudication, the Master recommends that they be summarily adjudicated so that their owners have documented rights that can be enforced if necessary against other water users.

The case is more difficult for stockponds and domestic uses. While these uses are even more numerous and the individual amounts of water consumed are *de minimis*, the evidence does not support a finding that stockponds as a group or domestic uses as a group have a *de minimis* impact on the Gila River system. If the annual outflow of the San Pedro River is 56,540 ac-ft/yr, based on mean values and as reported by DWR, then depletion

by stockponds in the amount of 2,000 ac-ft/yr or 3.5 percent (based on undepleted flow analysis) would be *de minimis*. Since the Master has determined the more reliable estimate of outflow from the watershed to be approximately 4,500 ac-ft/yr, based on median values, the depletion by stockponds of 2,000 ac-ft/yr results in an impact of 44 percent which is not *de minimis*.

Similarly, the depletion by domestic uses in the amount of 550 ac-ft/yr produces a one percent impact if annual flow is considered to be 56,540 ac-ft/yr. When compared against the more probable watershed outflow of 4,500 ac-ft/yr, the impact is 12 percent--again, not *de minimis*.

Still, when the costs and benefits of a detailed adjudication of stockponds and domestic uses are considered, the summary adjudication of individual uses is warranted. The entire classes of San Pedro stockponds and domestic uses, however, cannot be eliminated from the adjudication--the evidentiary record does not support such a conclusion. Thus, all stockponds and domestic uses must remain subject to seniority calls in times of drought although, as previously shown, a call of any individual right is likely to be futile. Because of the unlikelihood of stockponds or domestic uses being administered to provide water to senior users, summary procedures to adjudicate these uses are justified.

In summary, the Master concludes that stockwatering uses are *de minimis* whether considered individually or cumulatively. Individual stockponds and domestic uses in the San Pedro River watershed are also *de minimis* but the evidence does not support a finding that the total usage by all stockponds or by all domestic uses is also *de minimis*. Still, based on the *de minimis* impact of stockwatering uses, whether considered individually or cumulatively, and the *de minimis* impact of individual stockponds and domestic uses, summary adjudication of all three types of uses is justified.[8]

2. Findings of Fact

Finding of Fact No. 61. Stockwatering directly from river and streams has an imperceptible impact upon the watershed.

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[8]These conclusions do not necessarily support the argument that any use, when considered separately, is *de minimis* in the context of the San Pedro River or Gila River systems and is entitled to summary treatment. Some uses, such as those of larger irrigation companies and municipalities, are very large when compared to water supply, other uses, and watershed outflow. What is important here is the convergence of several key factors: the large number of uses, the small individual amounts of use, and the relatively few benefits that would result from a detailed adjudication of these uses.

Finding of Fact No. 62. It is impractical to quantify stockwatering uses in a precise fashion, which would mean regulating individual gallons of usage. Stockwatering is more practically quantified as "reasonable use."

Finding of Fact No. 63. Depletion by San Pedro River watershed stockponds, based on undepleted flow analysis, is 2,000 ac-ft/yr. When compared to the median annual outflow from the San Pedro River of approximately 4,500 ac-ft/yr, depletion by stockponds is 44 percent of the flow reliably available at the river's mouth.

Finding of Fact No. 64. Depletion by San Pedro River watershed domestic uses, based on undepleted flow analysis, is 550 ac-ft/yr. When compared to the median annual outflow from the San Pedro River of approximately 4,500 ac-ft/yr, depletion by domestic uses is 12 percent of the flow reliably available at the river's mouth.

3. Conclusions of Law

a. General

Conclusion of Law No. 7. The undepleted flow analysis methodology is a reasonable method, based on scientific knowledge, for estimating the amount of water that would be available to downstream users if a particular use of water did not exist.

b. Stockwatering Uses

Conclusion of Law No. 8. Stockwatering uses, whether considered individually or cumulatively in the San Pedro River watershed, are *de minimis* in the Gila River system.

Conclusion of Law No. 9. Individual stockwatering uses will be adjudicated utilizing summary procedures and proposed water right characteristics appropriate for these uses. The characteristics of these uses will be determined in accordance with the procedures set forth in part VII of this decision.

Conclusion of Law No. 10. Each stockwatering use will be adjudicated as "reasonable use."

c. Stockponds

Conclusion of Law No. 11. Stockponds, when considered cumulatively in the San Pedro River watershed, have not been shown to be *de minimis* in the Gila River system.

Conclusion of Law No. 12. Individual stockponds are *de minimis* in the Gila River system. These stockponds will be adjudicated utilizing summary procedures and proposed water right characteristics appropriate for these uses. The characteristics of these uses will be determined in accordance with the procedures set forth in part VII of this decision.

Conclusion of Law No. 13. Volume, based on the maximum storage capacity of the existing structure and expressed in acre-feet, is the appropriate quantification unit for stockponds.

Conclusion of Law No. 14. A uniform volume of "not to exceed (≤) 4 ac-ft with continuous fill" should be adjudicated for all stockponds in the San Pedro River watershed having a capacity of (≤) 4 ac-ft or less.

Conclusion of Law No. 15. The capacities of 721 stockponds claimed by the State of Arizona have been estimated reliably by use of the Estimated Maximum Volume (EMV) system of measurement and set forth in the statements of claimant filed by the State.

Conclusion of Law No. 16. For all State Land Department stockponds claimed or having a capacity in excess of (>) 4 ac-ft, the amount claimed on the statement of claimant should be adjudicated as the volume (with continuous fill).

Conclusion of Law No. 17. The Department of Water Resources may use previously compiled field survey information or regression analysis as the basis for determining those stockponds having a capacity not exceeding (≤) 4 ac-ft. The quantity of these stockponds will be adjudicated as "not to exceed (≤) 4 ac-ft with continuous fill."

Conclusion of Law No. 18. A uniform volume of 4 ac-ft, with continuous fill, will result in a quantification reasonably related to actual beneficial use for approximately three-quarters of the stockponds in the San Pedro River watershed (with quantities to be determined more precisely for the remaining one-quarter of larger ponds). Any benefit resulting from a more exact quantification of these stockponds would be outweighed by the administrative, litigant, and judicial costs of doing so.

Conclusion of Law No. 19. The Department of Water Resources may use previously compiled field survey information or regression analysis as the basis for determining the volume of stockponds larger than (>) 4 ac-ft but no more than (≤) 15 ac-ft. The results of the field survey or regression analysis, in ac-ft with continuous fill, will be adjudicated as the quantity of each of these rights.

Conclusion of Law No. 20. In the case of a stockpond larger than (>) 4 ac-ft claimed by the State of Arizona, the volume claimed on the statement of claimant will be adjudicated as the quantity of the right, with continuous fill.

Conclusion of Law No. 21. The capacity of stockponds can be estimated reliably using regression analysis statistical methods developed by DWR that correlate surface acreage (as determined from field measurements for the HSR, aerial photography, or satellite imagery) with volume.

Conclusion of Law No. 22. Regression analysis is a reasonable method, based on scientific knowledge, for estimating the capacity of stockponds based on surface acreage.

d. Domestic Uses

Conclusion of Law No. 23. Self-supplied domestic uses for single residences, when considered cumulatively in the San Pedro River watershed, have not been shown to be *de minimis* in the Gila River system.

Conclusion of Law No. 24. Individual domestic uses for single residences, when serving household purposes and associated outdoor activities on adjoining land not exceeding (≤) 0.2 acres, are *de minimis* in the Gila River system. These domestic uses will be adjudicated utilizing summary procedures and conditional water right characteristics appropriate for these uses. The characteristics of these uses will be determined in accordance with the procedures set forth in part VII of this decision.

Conclusion of Law No. 25. The quantity of "not to exceed 1 ac-ft/yr" of water will be adjudicated for domestic rights supplied by the landowner or occupant from a well or surface water source providing water for a single family household and associated outdoor activities on adjoining land not exceeding (≤) 0.2 surface acres ("self-supplied residential domestic right").

Conclusion of Law No. 26. A uniform volume of 1 ac-ft will result in a quantification reasonably related to actual beneficial use for self-supplied residential domestic rights in the San Pedro River watershed. Any benefit resulting from a more exact quantification of these domestic rights would be outweighed by the administrative, litigant, and judicial costs of doing so.

Conclusion of Law No. 27. Surface area is an efficient and effective way to monitor stockponds and outdoor watering incidental to self-supplied residential domestic rights for compliance with the adjudication decree.

Conclusion of Law No. 28. All other domestic uses should be adjudicated and quantified in the normal course of the adjudication.

G. New Uses

This decision does not necessarily mean that new stockwatering, stockponds, and domestic uses will be afforded the same *de minimis* treatment as described herein. In the first instance, an application for a new use must be made to the Department of Water Resources, ARIZ. REV. STAT. ANN. § 45-152 (1994), and the department must determine whether the proposed use "conflicts with vested rights, is a menace to public safety, or is against the interests and welfare of the public . . . ." *Id.* § 45-153(A). If new uses are later joined in this adjudication, the Master will then recommend whether they should be adjudicated under the procedures outlined in this decision.

VI. WHAT SUMMARY ADJUDICATION PROCEDURES ARE APPROPRIATE?

A. Overview of Procedures

Based on the findings of fact and conclusions of law presented in the preceding section, stockwatering uses are *de minimis* in all respects and stockponds and self-supplied, single residential domestic uses in the San Pedro River watershed are individually *de minimis*. All should be adjudicated in a summary fashion.

The Master is aware that the results in this consolidated case bind only the litigants in this case and serve only as precedent for other Gila River adjudication proceedings.[9] Still, based on the *de minimis* nature of these uses throughout the watershed, the Master will implement simplified, summary procedures to adjudicate all of these uses in the San Pedro River watershed.

This summary adjudication will be accomplished by preparing abstracts of proposed water right for each of these water uses; applying the rules set forth in part VII to create the proposed water right characteristics for these uses; deciding only specified types of objections, whether made to the original watershed file reports or to the Master's catalog of proposed water right;[10] and finally adjudicating these *de minimis* uses thereby allowing them to be administered along with other decreed rights.[11]

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[9]Thus, the posture of this case is different from No. 6417-033-9005 in the Little Colorado River adjudication where notice of issues to be litigated in the proceeding was given to all claimants in that adjudication allowing them the opportunity to participate and binding them with the results.

[10]RULES FOR PROCEEDINGS BEFORE THE SPECIAL MASTER § 15.00 (1991) (hereinafter "RULES").

[11]Further judicial proceedings will be held in the event a *de minimis* water right owner desires to sever or transfer the right. A severance or transfer proceeding also involves administrative procedures before DWR for permission to move a water right from the land to

These summary procedures are described in more detail below. Because extensive negotiations among the litigants have resulted in agreements on many of the characteristics for water rights involved in case No. W1-11-19, the following also describes how these agreements will be incorporated into the abstracts for these rights.

B. Specific Procedures for *De Minimis* Uses in this Case

For the *de minimis* water rights contained in the watershed file reports designated in this case No. W1-11-19, proposed water rights abstracts will be prepared in accordance with the partial settlement offered by the litigants; the findings of fact and conclusions of law reached in this case; and, where necessary, the proposed water right characteristics described in part VII. These proposed water rights abstracts will be filed as a supplement to this decision, and subsequent proceedings will be held as necessary.

C. Specific Procedures for Other *De Minimis* Uses in San Pedro River Watershed

The following procedures will be used to describe the water right characteristics of other *de minimis* uses in the San Pedro River watershed.

1. Preparation of Abstracts of Proposed Water Right

Abstracts of proposed water right will be prepared for all stockwatering uses; all stockponds (regardless of size); and self-supplied residential domestic rights in the San Pedro River watershed. These abstracts will be prepared based on the findings of fact and conclusions of law reached in this case and the proposed water right characteristics described in part VII of this decision.

2. Incorporation into Catalog of Proposed Water Rights

The abstracts of proposed water right prepared according to step 1, *supra*, will be incorporated into the Master's catalog of proposed water rights for the San Pedro River watershed. An earlier, partial catalog containing only these uses may be filed separately from the catalog for all other uses in the San Pedro River watershed. Generally, no objections to any of these uses will be resolved before the preparation of the abstracts or their incorporation into the catalog of proposed water rights.

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which it is appurtenant or to change the purpose for which the water is used. ARIZ. REV. STAT. ANN. § 45-172 (1994).

3. Opportunity to Review Abstracts During Catalog Objection Period

During the 60-day objection period on the catalog of proposed water rights, *see* RULES § 15.04, water users and other claimants may examine the proposed abstracts of water right. They may also file permissible objections to the catalog--that is, objections that do "not assert objections that reasonably could have been asserted during the original 180-day objection period for that watershed . . . HSR." *Id.*

4. Limited Resolution of Objections

After the 60-day objection period on the catalog of proposed water rights, the Master will resolve objections to the original watershed file reports or permissible objections to the catalog only if the objector can show both of the following:

(a) resolution of the objection will demonstrably protect or improve the objector's own water right; and

(b) resolution of the objection will provide relief that could otherwise not be obtained in a post-final decree enforcement proceeding.[12]

Such a showing may possibly be made if the objector has evidence that a right described in the catalog has no legal basis or was not properly claimed in the adjudication, a right has been omitted from the catalog, or ownership of a right has been improperly assigned. Such a showing probably cannot be made by a senior user arguing that another user's junior priority date is incorrect--the junior right could be called in any event.

No objections concerning quantity--whether filed against the original watershed file reports or against the catalog--will be resolved by the Master. The proceedings in this case have resulted in decisions based on the evidentiary record concerning reasonable quantification methods for these uses.

5. Dismissal of All Other Objections

Except as described in step 4, no other objections to *de minimis* rights, whether filed to the original watershed file report or to the catalog, will be

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[12]"Post-final decree enforcement proceeding" refers to the procedures to be used by the court and DWR to enforce the provisions of the final decree. While the final decree is expected to specify many of these provisions, existing enforcement procedures are set forth in statute at ARIZ. REV. STAT. ANN. §§ 45-109, -110 & -112 (1994).

heard or resolved before the filing of the Master's final report for the watershed. The Master will recommend that, upon entry of the final decree, these remaining objections be dismissed.

6. Post-decree Administration

De minimis water rights incorporated into the final decree will be finally adjudicated and administered along with all other water rights determined for the watershed. As previously discussed, however, the ability of a senior appropriator to assert a priority call of any of these *de minimis* rights may likely be unsuccessful under the futile call doctrine.

The Master will also recommend to the Superior Court that, prior to applying to the Department of Water Resources for severance or transfer[13] of an adjudicated *de minimis* water right, a proceeding be held before the Superior Court to determine the actual priority date and quantity of the right proposed to be transferred.

Finally, many domestic uses are served by wells which may eventually be determined to be outside the jurisdiction of the court. For the moment, all domestic wells will be adjudicated in a summary fashion. After the jurisdiction of the court is determined, individual well owners may request the court or Master to decide that their wells are not subject to adjudication or the court or Master on their own motion may undertake proceedings to exclude these wells from the final decree.

D. Discussion

These summary procedures for *de minimis* uses accomplish the statutory purposes of the general stream adjudication to "[d]etermine the extent and priority date of and adjudicate any interest in or right to use the water of the river system and source . . . ." ARIZ. REV. STAT. ANN. § 45-257 (B)(1) (1994). These rights will be adjudicated, incorporated into the final decree, and represented by water right abstracts describing essential features of the rights. During post-decree administration, these rights can be enforced against other water uses. They may also be the subject of enforcement actions although such actions against *de minimis* rights are likely to prove impractical. The adjudication remains comprehensive.

E. Conclusions of Law

Conclusion of Law No. 29. The summary procedures described in sections VI(C)(1) to (6), *supra*, are appropriate, reasonable, and necessary for the expeditious adjudication of individual stockwatering, stockpond, and

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[13] *See* n. 11, *supra*.

domestic uses found to be *de minimis*. When numerous *de minimis* uses are present, the application of summary adjudication procedures is a necessary case management tool for making progress in the multi-decade general stream adjudication involving thousands of parties and water rights.

Conclusion of Law No. 30. The rules for assigning proposed water right characteristics for individual stockwatering, stockpond, and domestic uses found to be *de minimis*, which rules are described in part VII, *infra*, are appropriate, reasonable, and necessary for the expeditious adjudication of those *de minimis* uses.

Conclusion of Law No. 31. As a precondition for applying to the department for permission to sever or transfer a stockpond or self-supplied residential domestic right under section 45-172, ARIZ. REV. STAT. ANN., the owner must first request the adjudication court or the post-decree Superior Court to adjudicate the actual quantity and priority date of the right.

VII. HOW WILL WATER RIGHT CHARACTERISTICS BE DETERMINED?

The Master proposes to complete expeditiously the adjudication of *de minimis* stockwatering, stockponds, and domestic uses in the San Pedro River watershed. In doing so, he utilizes the rules described in this part VII in order to establish the proposed water right attributes for these uses. After this decision is filed, these rules will be used to create water right abstracts for stockwatering, stockponds, and domestic uses in the San Pedro River watershed. Specifically, abstracts will be prepared for the following uses:

- All stockwatering uses, meaning the instream watering of stock at unimproved or improved locations on a stream, creek, spring, or similar surface source.

- All stockponds, meaning those ponds or other artificial facilities, used solely for the watering of stock or wildlife, that individually have a capacity of no more than (≤) 15 ac-ft. As the following discussion indicates, the method of quantifying stockponds with individual capacities no more than (≤) 4 ac-ft (*i.e.*, assigning a uniform volume) differs from the method of quantifying larger stockponds.

- All domestic uses, as that term is defined in Conclusion of Law No. 6,[14] so long as they are supplied by the landowner or

[14]Conclusion of Law No. 6 defines "domestic use" as the use of privately supplied water by persons in a permanent dwelling, the watering of pets and farmyard animals, and the irrigation of lawns, gardens, and orchards on land adjoining the dwelling.

occupant from a well or surface water source ("self-supplied") and provide water for a single family household and associated outdoor activities on adjoining land not exceeding (≤) 0.2 acres. Remaining domestic uses will be adjudicated during the normal course of the adjudication.

The rules to be used for specifying proposed water right characteristics are based in part on the decisions made by the Special Master in his Memorandum Decision, Findings of Fact, and Conclusions of Law for Group 1 Cases Involving Stockponds, Stockwatering, and Wildlife Uses, *In re Reporting of Diversion Information & Other Objections,* Special Consolidated Case No. 6417-033-9005 (Apache County, Apr. 20, 1994) (Little Colorado River adjudication). Little Colorado River adjudication determinations are certainly not binding in the Gila River adjudication. These determinations do provide a reasonable basis for fashioning proposed water right characteristics since they were reached after extensive briefing and argument by the adverse parties in that adjudication. Some of these rules may be decided differently in future San Pedro River cases when they are addressed on the merits.

The rules for quantifying these stockwatering, stockpond, and domestic uses, however, result from decisions based on the record in this case.

Water right abstracts will also be created for the stockwatering, stockpond, and domestic uses specifically identified in this consolidated contested case. These abstracts will be prepared as a supplement to this decision. In most cases, the characteristics agreed to by the parties in their pretrial statement will be used in the preparation of these abstracts.

It may be impossible to complete abstracts of water right for all these *de minimis* uses since some are supported by incomplete statements of claimant or watershed file reports. In the event necessary information is lacking or missing, the Special Master may require the claimants and objectors to submit sufficient affidavits, testimony, or other evidence upon which to determine the missing characteristics.

A. Characteristics to be Determined

Unless unusual circumstances warrant, the following characteristics and determinations will be made and set forth in the water right abstracts for all above-described stockpond, stockwatering, and domestic uses:

- Proposed water right number;
- Statement of claimant associated with proposed water right;

- Basis of the water right;
- Owner of the water right;
- Beneficial use (type of use);
- Priority date;
- Source of water;
- Place of use; and
- Quantity.

The following optional characteristics will be included in a water right abstract for informational purposes:

- Landowner, if different from water right owner;
- Lessee name, if different from water right owner;
- Lease number;
- Facility name; and
- Lessee's right to reimbursement for improvements (if any).

These optional attributes, however, will be provided for informational purposes and will not be subject to objection in the catalog of proposed water rights or in exceptions to the Master's final report.

B. Proposed Water Right Number

A proposed water right number (PpWR No.) will be created for each water right to be included in the catalog of proposed water rights. For each water right recommended for adjudication, the number will be prepared as follows:

> Watershed file report where the water use is described + abbreviation of the type of beneficial use + unique serial number.

For instance, the first proposed water right for a particular landowner would be numbered as follows:

PpWR No. 114-04-002-SP001.

The proposed water right, which will appear in the abstract, may be the same as the potential water right (PWR) number reported in the watershed file report.

C. Requirement of a Statement of Claimant

In this portion of the water right abstract, the number of the statement of claimant matched to the proposed water right will be listed. Section 45-254(E), ARIZ. REV. STAT. ANN., requires that a statement of claimant be filed in the adjudication. The consequences of not doing so are a forfeiture of the water use and the water right.[15]

Even if no objection was filed to the original watershed file report, a water right abstract will not be prepared for a *de minimis* use unless a statement of claimant has been filed and is matched to the water use. If a statement of claimant is not matched to a water use, the use will be listed in the "no water right awarded" section of the catalog of proposed water rights.

D. Basis of Water Right

The abstract will also match the potential water right with a preadjudication filing or other legal basis for the use. The adjudication is a confirmation of valid pre-existing water rights. ARIZ. REV. STAT. ANN. § 45-254(E) ("Any potential claimant . . . who fails to file a statement of claimant . . . shall be barred and estopped from subsequently asserting any right *theretofore* acquired upon the river system . . . ;" emphasis added). Thus, a water right abstract will be created for a *de minimis* water use so long as a proper prefiling basis is established for the water right.

A non-exclusive list of the possible legal bases for these rights includes:

- Prior judicial decrees, *id.* § 45-257(B)(1);
- Filings pursuant to the Water Rights Registration Act, *id.* §§ 45-181 to -190;

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[15]Section 45-254(E), ARIZ. REV. STAT. ANN. (1994), states as follows:

> Any potential claimant properly served who fails to file a statement of claimant in accordance with the requirements of this article shall be barred and estopped from subsequently asserting any right theretofore acquired upon the river system and source and shall forfeit all rights to the use of water in the river system and source theretofore claimed by him.

See also In re Yellowstone River, 832 P.2d 1210 (Mont. 1992) (upholding forfeiture provision in general stream adjudication statute).

- Filings pursuant to the Stockpond Registration Act, *id.* §§ 45-271 to -276;

- Certificates of water right issued under the Public Water Code, *id.* §§ 45-141 to -167; and

- Notices of appropriation.

Even if no objection was filed to the original watershed file report, a water right abstract will not be prepared for a *de minimis* use unless a preadjudication filing or other legal basis is matched to the water use. If a preadjudication filing or other legal basis is not matched to a water use, the use will be listed in the "no water right awarded" section of the catalog of proposed water rights.

E. Ownership

The name of the landowner as listed in the watershed file report will appear in the abstract to describe the ownership of these *de minimis* uses.

F. Beneficial (Type of) Use

The information contained in the watershed file reports and the definitions set forth in Conclusions of Law Nos. 1 through 6, *supra*, will be used to determine the beneficial (type of) use for each right.

G. Priority Date

The priority dates for these uses will be determined by use of the apparent dates of first use as listed in the potential water right section of the watershed file report. If the watershed file report is incomplete or ambiguous, then the priority date will be determined in the following sequence: (1) the earliest date set forth in a judicial decree or Water Rights Registration Act filing; or (2) the earliest date set forth in any other preadjudication filing, adjudication filing, or other admissible credible evidence.

If the information is available, the priority date will be assigned as the day, month, and year. If the day is not available, the priority date will be the last day of the month and the year. If neither a day nor month is provided, the priority date will be last day of the year.

H. Source of Water

Where the watershed file report indicates that surface water is used for a stockwatering, stockpond, or domestic use, the source of water will be described in the abstract as surface water. Where the watershed file report

indicates that underground water is being used, or the source is uncertain, the abstract will list the source as "not yet determined."

Once the court or Master is able to determine what underground water uses are subject to adjudication, the owner of a water right having underground water as the source may move the court or Master for a determination that the water use is not subject to adjudication. The court or Master may on its own motion seek to identify those rights not subject to adjudication.

I. Place of Use

For stockwatering uses, the information set forth in the watershed file report under the "uses" section will be utilized for determining this characteristic. The place of use will be described to the quarter-quarter (1/4-1/4) section in which the use occurs. In cases of two or more stockwatering uses within the same quarter--quarter section, the rights will be described to the nearest quarter-quarter-quarter section (1/4-1/4-1/4).

For stockponds, the information set forth in the "reservoir" section of the watershed file report will be utilized to provide the legal description for the place of use. The quarter-quarter (1/4-1/4) section in which the surface area of the stockpond extends will be utilized for the legal description. In the case of two or more stockponds in the same quarter-quarter section, each stockpond will be located to the nearest quarter-quarter-quarter (1/4-1/4-1/4) section.

The information set forth in the "use location" portion of the watershed file report will be used to describe the place of use for domestic uses. The quarter-quarter (1/4-1/4) section in which the domestic use occurs will be utilized for the legal description. In the case of two or more domestic uses in the same quarter-quarter section, each domestic use will be located to the nearest quarter-quarter-quarter (1/4-1/4-1/4) section.

J. Quantity

Section V(D) of this decision has discussed the amount of water used for stockwatering and domestic uses and the size and capacity of stockponds in the San Pedro River watershed. Findings of fact have been made about the amount of water used for these purposes. Since the quantity of these uses has been litigated and decided on the record, the quantity set forth in the abstracts will be as described in the Conclusions of Law Nos. 10, 14, 16, 17, 19, 20, and 25, *supra*.

VIII. IMPLEMENTING PROCEDURES AND ORDERS

A. Requested Findings of Fact and Conclusions of Law

All requested findings of fact and conclusions of law, unless incorporated into this decision, are denied.

B. Preparation of Abstracts for this Contested Case

Subsequent to the filing of this memorandum decision, the Special Master will prepare and file proposed water rights abstracts for all *de minimis* uses identified in the watershed file reports that have been the subject of this Case No. W1-11-19. Prior to these abstracts being incorporated into the catalog of proposed water rights, the litigants will be provided an opportunity to suggest the correction of mistakes in the proposed abstracts. These suggestions should not be requests for reconsideration of the basic rulings set forth in this decision. This opportunity to correct mistakes does not limit the right any litigant may have to move for reconsideration of the basic decisions made herein.

C. Preparation of Abstracts for Other *De Minimis* Uses in the San Pedro River Watershed

The Department of Water Resources is requested to assist the Special Master in the preparation of the abstracts of proposed water right for the remaining *de minimis* water rights in the San Pedro River watershed. The abstracts will be prepared in conformity with the determinations set forth in this decision.

D. Further Proceedings

1. As necessary, the Special Master will conduct further proceedings in this Case No. W1-11-19 to address and resolve any remaining issues.

2. In future hydrographic survey reports for the Gila River watersheds, the Department of Water Resources is requested to prepare abstracts of proposed water right for all wildlife watering,[16] stockwatering, stockponds, and self-supplied residential domestic uses in each watershed. These abstracts should be prepared in conformance with the principles established in this decision. These abstracts will be a part of the hydrographic

[16]While wildlife uses were not directly considered in this case, they are beneficial uses of water under Arizona law. ARIZ. REV. STAT. ANN. § 45-151(A) (1994). The Master believes that wildlife watering presents a situation similar to the watering of stock and, for that reason, abstracts should be prepared for these uses in the same manner.

survey report and may be objected to for the limited reasons set forth in section VI(C)(4) of this decision (detailed instructions will be set forth in the objection booklet served by the court at the commencement of the objection period).

DATED this 14th day of November 1994.

JOHN E. THORSON
Special Master

The original of the foregoing mailed this 14th day of November 1994 to the Clerk of the Maricopa County Superior Court for filing; also, copies of the foregoing mailed to those parties who appear on the Court-approved mailing list for Case No. W-1-11-19 (Consolidated) dated March 11, 1994. There is no service by fax of this document.

Kathy Dolge