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**ORIGINAL**  
BEFORE THE ARIZONA CORPORATION COMMISSION

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**COMMISSIONERS**

Jeff Hatch-Miller, Chairman  
William A. Mundell  
Mike Gleason  
Kristin K. Mayes  
Gary Pierce

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IN THE MATTER OF THE APPLICATION OF  
ARIZONA WATER COMPANY, AN ARIZONA  
CORPORATION, TO EXEND ITS EXISTING  
CERTIFICATE OF CONVENIENCE AND  
NECESSITY IN THE CITY OF CASA GRANDE  
AND IN PINAL COUNTY, ARIZONA

Docket No. W-01445A-06-0199

IN THE MATTER OF THE APPLICATION OF  
PALO VERDE UTILITIES COMPANY FOR AN  
EXTENSION OF ITS EXISTING CERTIFICATE  
OF CONVENIENCE AND NECESSITY.

Docket No. SW-03575A-05-0926

IN THE MATTER OF THE APPLICATION OF  
SANTA CRUZ WATER COMPANY FOR AN  
EXTENSION OF ITS EXISTING CERTIFICATE  
OF CONVENIENCE AND NECESSITY.

Docket No. W-03576A-05-0926

Palo Verde Utilities Company and Santa Cruz Water Company hereby file the Rebuttal  
Testimony of Trevor T. Hill, Rita Maguire, Philip Briggs, Graham Symmonds, and Cindy Liles in  
the above-mentioned docket.

RESPECTFULLY SUBMITTED this 14<sup>th</sup> day of February 2007.

ROSHKA DEWULF & PATTEN, PLC

Arizona Corporation Commission

**DOCKETED**

FEB 14 2007

DOCKETED BY  
KIL NR

By Timothy J. Sabo

Michael W. Patten  
Timothy J. Sabo  
One Arizona Center  
400 East Van Buren Street, Suite 800  
Phoenix, Arizona 85004

**ROSHKA DEWULF & PATTEN, PLC**  
ONE ARIZONA CENTER  
400 EAST VAN BUREN STREET - SUITE 800  
PHOENIX, ARIZONA 85004  
TELEPHONE NO 602-256-6100  
FACSIMILE 602-256-6800

1 Original + 17 copies of the foregoing  
2 filed this 14<sup>th</sup> day of February 2007, with:

3 Docket Control  
4 ARIZONA CORPORATION COMMISSION  
5 1200 West Washington  
6 Phoenix, Arizona 85007

7 Copies of the foregoing hand-delivered/mailed  
8 this 14<sup>th</sup> day of February 2007, to:

9 Yvette B. Kinsey, Esq.  
10 Administrative Law Judge  
11 Hearing Division  
12 Arizona Corporation Commission  
13 1200 West Washington  
14 Phoenix, Arizona 85007

15 Christopher C. Kempley, Esq.  
16 Chief Counsel, Legal Division  
17 Arizona Corporation Commission  
18 1200 West Washington  
19 Phoenix, Arizona 85007

20 Ernest G. Johnson, Esq.  
21 Director, Utilities Division  
22 Arizona Corporation Commission  
23 1200 West Washington  
24 Phoenix, Arizona 85007

25 Robert W. Geake, Esq  
26 Arizona Water Company  
27 3805 North Black Canyon Highway  
Phoenix, Arizona 85015

Steven A. Hirsch, Esq.  
Rodney W. Ott, Esq.  
Bryan Cave LLP  
Two North Central Avenue, Suite 2200  
Phoenix, Arizona 85004

Jeffrey W. Crockett, Esq  
Marcie Montgomery, Esq.  
Snell & Wilmer LLP  
One Arizona Center  
400 East Van Buren Street  
Phoenix, Arizona 85004

**ROSHKA DEWULF & PATTEN, PLC**  
ONE ARIZONA CENTER  
400 EAST VAN BUREN STREET - SUITE 800  
PHOENIX, ARIZONA 85004  
TELEPHONE NO 602-256-6100  
FACSIMILE 602-256-6800

- 1 Kenneth H. Lowman  
Manager
- 2 KEJE Group, LLC  
7854 West Sahara
- 3 Las Vegas, Nevada 89117
  
- 4 Craig Emmerson, Manager  
Anderson & Val Vista 6, LLC  
8501 North Scottsdale Road, Suite 260  
Scottsdale, Arizona 85253
  
- 6 Brad Clough
- 7 Anderson & Barnes 580, LLP  
Anderson & Miller 694, LLP
- 8 8501 North Scottsdale Road, Suite 260  
Scottsdale, Arizona 85253
  
- 9 Phillip J. Polich
- 10 Gallup Financial, LLC  
8501 North Scottsdale, #125  
Scottsdale, Arizona 85253
  
- 11 Ken Frakes, Esq.  
Rose Law Group, PC  
6613 N. Scottsdale Rd, Ste 200  
Scottsdale, Arizona 85250
  
- 14 
  
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**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**

JEFF HATCH-MILLER- CHAIRMAN  
WILLIAM A. MUNDELL  
MIKE GLEASON  
KRISTIN K. MAYES  
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF  
ARIZONA WATER COMPANY, AN ARIZONA  
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IN THE MATTER OF THE APPLICATION OF  
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**Docket No. SW-03575A-05-0926**

IN THE MATTER OF THE APPLICATION OF  
SANTA CRUZ WATER COMPANY FOR AN  
EXTENSION OF ITS EXISTING CERTIFICATE  
OF CONVENIENCE AND NECESSITY.

**Docket No. W-03576A-05-0926**

Rebuttal Testimony of

Trevor T. Hill

on behalf of

Santa Cruz Water Company  
and Palo Verde Utility Company

February 14, 2007

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1 **I. INTRODUCTION.**

2

3 **Q. Please state your name and business address.**

4 A. My name is Trevor T. Hill. My business address is 21410 North 19<sup>th</sup> Avenue, Suite 201,  
5 Phoenix, Arizona 85027.

6

7 **Q. Are you the same Trevor T. Hill that filed Direct Testimony in this case?**

8 A. Yes.

9

10 **Q. What topics will you address in your rebuttal testimony?**

11 A. I will discuss the following topics:

- 12 • I compare our groundwater conservation efforts to those of Arizona Water  
13 Company (“AWC”).
- 14 • I demonstrate that AWC’s claim of “health risks” relating to the use of reclaimed  
15 water is flatly wrong. I explain why making reclaimed water available to  
16 residential customers is not only feasible, but absolutely necessary; and I discuss  
17 specific examples of this being done throughout the world, in fact it is being done  
18 in New Mexico to an extent far, far greater than anything under consideration in  
19 Arizona.
- 20 • I explain why groundwater conservation is much easier for integrated water,  
21 wastewater, and reclaimed water utilities.
- 22 • I explain how Global entities work together with cities, tribes and other  
23 governments to plan sustainable growth. I also demonstrate that the AWC  
24 approach disregards the concerns of cities and tribes.
- 25 • I review the choices that the Commission has before it in this case.

26

27

1 **Q. Does Global Water have other rebuttal witnesses?**

2 A. Yes, all of our direct witnesses will provide rebuttal testimony. They address the  
3 following points:

4

5 **Rita Maguire** will explain the importance of reclaimed water to Arizona's future. She  
6 also explains why it will become increasingly difficult to obtain supplies of surface water.  
7 She explores the limits of the CAGRDR.

8

9 **Phil Briggs** provides an overview of water resources available to the Pinal Active  
10 Management Area ("AMA"). He also discusses the difficulty and importance of  
11 recharging the aquifer, and details why AWC's reliance on discharging effluent into  
12 washes is not aquifer recharge. He explains the meaning and limitations of AWC's  
13 Physical Availability Determination. He also updates his comparison of the groundwater  
14 effects of granting the applications of either AWC or Global Water.

15

16 **Graham Symmonds** critiques AWC's engineering plans, and explains why economies of  
17 scale exist for wastewater operations. He explains that our infrastructure plan is regional,  
18 interconnected, and future-oriented and he also explains some of the cutting edge  
19 technology we are deploying to serve customers.

20

21 **Cindy Liles** agrees that conservation is more expensive in the short run, but explains why  
22 in the long run it is less expensive. She also explains why AWC's rate comparisons are  
23 flawed. She reviews the cost savings enjoyed by integrated utilities, and she discusses  
24 AWC's concerns about Global Water's corporate structure. Finally, she responds to  
25 AWC's attempt to minimize the importance of landowner requests for service.

26

27

1 **II. GROUNDWATER CONSERVATION: OUR RESULTS AND STRATEGY.**

2  
3 **Q. How does Santa Cruz's use of groundwater compare to AWC?**

4 A. We demonstrably use less water. As Mr. Symmonds explains, for each "Equivalent  
5 Dwelling Unit" Santa Cruz uses about 5,500 gallons a month, while AWC uses about  
6 10,000.

7  
8 **Q. How do AWC and Global Water compare on implementing the "triad of  
9 conservation"?**

10 A. We have already demonstrated the capability to implement the triad in full, we have shown  
11 dramatic results in groundwater savings from doing so, and we have explained our plans to  
12 do so in the areas at dispute in this case. AWC has never planned, much less built, a  
13 reclamation system, has never built or operated a recharge facility, and has provided  
14 absolutely no plans to do so in this case. In each element of the triad, our actual experience  
15 and our plans are superior.

16  
17 **Q. Please compare Global Water and AWC with respect to the first element of the triad,  
18 use of reclaimed water.**

19 A. We have led the state in deployment of reclaimed water infrastructure. As Mr. Symmonds  
20 explains, AWC has no plans to deploy reclaimed water in the areas at issue in this case.

21  
22 **Q. What about the second element, surface water?**

23 A. Santa Cruz's first surface water treatment plant will be on-line in 2008, and Mr.  
24 Symmonds explains our plans for deploying further plants. Mr. Symmonds shows that  
25 AWC's proposed plant will be of little benefit to customers in the areas at issue in this  
26 case, a plant which, if built, will not be on-line until 2012.

27

1 **Q. What about the third element, recharge?**

2 A. Mr. Symmonds has explained our extensive recharge planning and he also describes our  
3 fully operational, and actively recharging, 25,000 acre-foot recharge project in western  
4 Maricopa County (which is currently being increased to 50,00 acre-feet). He also shows  
5 that AWC has no plans to construct recharge facilities. Mr. Briggs explains why AWC's  
6 reliance on discharging treated wastewater into open washes is not recharge, and  
7 exacerbates serious public health risks.

8

9 **Q. Mr. Garfield speaks of AWC's commitment to conservation. Do you have a**  
10 **response?**

11 A. Yes. Actions speak louder than words. There is a demonstrable difference in the  
12 approaches of each company, and in the results they have achieved, as shown above.

13

14 **Q. Do you have a response to Mr. Garfield's comments regarding reclaimed water?**

15 A. Yes. Mr. Garfield makes several incorrect statements about reclaimed water on page 24 of  
16 his direct testimony. Most troubling is his implication that there are "health risks" to  
17 reclaimed water. He states that users of reclaimed water need to "employ highly trained  
18 agronomists, soil and water experts, etc., who are in a position to know all the health risks  
19 and precautions needed to safely use reclaimed water." That is patently absurd. Palo  
20 Verde produces "Class A" reclaimed water which is suitable for almost all non-potable  
21 uses.

22

23 I attached to my direct testimony ADEQ regulations concerning the permissible uses of  
24 Class A reclaimed water. These regulations are not new, and AWC is presumably familiar  
25 with them as AWC must comply with them in operating its Gold Canyon effluent  
26 "system."

27

1 Under these regulations, Class A reclaimed water can be used to irrigate residential  
2 landscaping, school-ground landscaping, and “open access” landscaping, such as parks. It  
3 can also be used to irrigate food crops, and as water for dairy animals. Other uses, such as  
4 toilet flushing and fire protection, are also allowed. In short, Class A reclaimed water can  
5 be used for a wide variety of purposes, including many situations involving the general  
6 public. These include residential, school, and park irrigation. There is no need for special  
7 experts, nor are there any “health risks” or special precautions that are needed for these  
8 ADEQ-approved uses.

9  
10 Like so much else, AWC’s thinking on this point is decades out-of-date. There are simply  
11 no health risks to ADEQ-approved non-potable uses of reclaimed water treated to modern  
12 “Class A” levels. That’s why the state agency charged with protecting public health –  
13 ADEQ – approves the use of Class A reclaimed water for a wide array of uses. Reclaimed  
14 water is an essential resource to the future of this state, and we must maximize its use  
15 without regard for unfounded, out-of-date attitudes.

16  
17 **Q. Will the public accept these uses of reclaimed water?**

18 **A.** Yes. In conjunction with our public information campaign, we conducted extensive  
19 polling on public perception. When we asked people whether they were “worried or not  
20 worried about reclaimed water being recycled for use in [their] community”, 71% said they  
21 were not worried. We then focused on the “worried 29%”. We told them, “reclaimed  
22 water goes through various stages of treatment and testing before being recycled for  
23 reuse”. That’s all that we told them about reclamation science – 15 words. And of those  
24 who were “worried”, our “worried 29%”, after hearing those 15 words, 80% of them  
25 supported flushing toilets in their own home with reclaimed water. 89% of previously  
26 “worried” people supported watering plants and grass in parks and golf courses. We did  
27 that with 15 words.

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When we include the 71% that were not worried about reclaimed water, we found that 92% of the public thinks irrigating golf courses with reclaimed water is a 'good idea'. 83% support flushing their own toilet with reclaimed water. In 2005, only 60% of the public supported flushing their toilets with reclaimed water – we've moved that support up 23 points after one year of our public information campaign.

To be blunt, AWC is completely out of touch with the public, with ADEQ, and with science when it comes to reclamation and reuse. It only remains to be seen whether AWC is out of touch with the ACC on this point, or whether Global is.

**Q. Mr. Garfield also claims that is not feasible to deliver reclaimed water to residential customers. Do you agree?**

A. Absolutely not. It's true that extending reclaimed water lines to each new home will be expensive. But there are a number of off-setting cost savings that will result:

1) **Treatment.** Using reclaimed water for non-potable purposes reduces the amount of water that needs to be treated to potable water standards. In short, your Palo Verde tree does not care about the level of arsenic in its water. Moreover, the EPA is required under the Safe Drinking Water Act to promulgate a list of "contaminants" every few years, and in doing so, it frequently imposes more stringent standards on existing contaminants. This is done without cost-benefit analysis – in fact the Safe Drinking Water Act specifically prohibits the EPA from conducting cost-benefit analysis for this program. It is difficult to predict future EPA actions, but it is certain that EPA will comply with the Act's requirement to continually search for new contaminants and to lower the allowable concentrations of known contaminants every few years. Therefore, the best insurance is to always

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seek ways to reduce the amount of water subject to treatment in the first place, i.e., potable drinking water.

2) **Size of mains.** Replacing potable water for many non-potable uses, results in lower demand for potable water. This means that distribution mains and other infrastructure can be smaller, and thus cheaper.

3) **Reduced pumping.** It is much more costly to pump water up from the aquifer than to move it around on the surface. Use of reclaimed water thus reduces pumping costs by reducing the amount of water that needs to be pumped from wells in the first place. Pumping costs can be significant. For example, AWC's 2005 Annual Report shows total pumping costs of almost \$3.5 million,<sup>1</sup> which was one of highest categories of expense. With energy costs increasing across the board, it is only prudent planning to reduce reliance on a very energy-intensive approach, and instead, to rely on pipes and gravity to move water around on the surface for as many uses as possible, before putting it back into an aquifer hundreds of feet below the surface.

4) **The Future Cost of the Resource.** Finally, the future cost of the resource is a critical component to consider in the master planning effort. Currently, the costs of the actual water resources are nearly zero in utility planning and rate making; most rate making is currently established on the cost of conveyance and delivery. There will be a day, and that day has come in California, Colorado and Nevada, where a real and significant cost will be placed on the resource itself. In this context, maximizing every possible and currently supported use of reclaimed water will appear extremely inexpensive by comparison. It would appear from the aggressive nature of the ADEQ regulations in this regard and the experience of neighboring states associated with the cost of acquiring new water resources that the near term

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<sup>1</sup> Amount shown in Account 623, Pumping – Purchased Power.

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planning for the maximization of the use of reclaimed water is in the public interest.

**Q. Why is residential use of reclaimed water important?**

A. Residential use of reclaimed water is the next step in “stretching” the water resource. Santa Cruz has been able to substantially reduce potable water demand through use of reclaimed water to common areas, golf courses, and so forth. But further substantial reductions are available through residential use. Such reductions are possible – about 40% of residential water use is for yard and landscape irrigation. Using reclaimed water for such purposes can dramatically reduce potable water demand, above and beyond the massive reductions we’ve already achieved by doing the same for common irrigation. The water savings are shown on the chart on Page 8 of Mr. Symmonds’ Direct Testimony.

**Q. Are there examples of residential use of reclaimed water?**

A. Yes, there are many examples of residential use of reclaimed water. Contrary to Mr. Garfield’s claims, these examples show that residential use of reclaimed water is feasible. For example there are several communities in Australia, that when faced with severe water shortages, adopted ordinance that required reclaimed water be used to flush toilets in every home. There are two other very recent examples of in Colorado and New Mexico of introducing reclaimed water directly into potable water systems. This so-called “Direct Potable Re-use” is a signal of what is to come, in my opinion. Watering plants outside homes or flushing toilets in commercial buildings seem rather conservative in the context of the experience of our neighboring states, who in two cases will be directly drinking their highly treated effluent in 2007.

1 **Q. What about Arizona Water's remarks concerning surface water and recharge?**

2 A. Mr. Symmonds will address these in his rebuttal testimony.

3

4 **Q. Is the Global strategy of reclamation and reuse invented by Global?**

5 A. No. There are many large cities in the United States and the world that now rely on  
6 reclaimed water as a significant contributor to their water balance. There are countless  
7 examples of proactive policies around managing the scarcity of water and attempting to  
8 stretch the current resources as opposed to developing new ones.

9

10 **Q. Does Global's reuse strategy rely on trade secrets or intellectual property rights?**

11 A. No. There is no intellectual property associated with Global's plan, in fact there is a very  
12 comprehensive body of knowledge on the matter, formal Water Reuse associations, annual  
13 conferences since the early 1990's and dozens of case studies which quantify the results of  
14 Global's proactive measures. The strategy only relies on the will to effect change and the  
15 capital to do so.

16

17 **Q. Why doesn't every water company do the water reuse planning that Global does?**

18 A. As you can see from AWC's testimony, many water professionals, such as Mr. Garfield,  
19 still preach a "doctrine of fear". Despite ADEQ's proactive steps to aggressively promote  
20 all manner of water reuse activities including flushing toilets in homes, Mr. Garfield still  
21 claims that customers are not ready or not sophisticated enough for even the most  
22 rudimentary reuse measures. We live in the desert. I submit that our customers are either  
23 ready now, or through proactive communication, education and continuous outreach, we  
24 need to get them ready for what is certainly a future reality. One only has to look at  
25 California, New Mexico, and Colorado to see into the future.

26

27

1 **III. INTEGRATED UTILITIES.**

2  
3 **Q. Why are integrated utilities important?**

4 A. As I noted in my direct testimony, there are both economic and practical obstacles to non-  
5 integrated utilities implementing the triad or similar measures.<sup>2</sup> One of the basic problems  
6 is that the water company has no incentive to promote the use of reclaimed water, as it  
7 simply cuts into the water company's sales. And on the other hand, the wastewater  
8 company has to emplace much more expensive facilities, and deal with much higher  
9 operation and maintenance costs, than any water company. If the wastewater provider can  
10 offset some of those costs through sales of reclaimed water, it should do so in order to  
11 reduce the rates charged to its customers (this is, in a manner of speaking, sharing the  
12 profits of reclaimed water with the folks who created the resource by taking baths, washing  
13 their clothes, and flushing their toilets). Without integration, the wastewater company  
14 foregoes revenues, and in so doing, its customers don't see any financial benefits from the  
15 resource they helped to create.

16  
17 **Q. What about AWC's argument that the water and wastewater providers can work  
18 together?**

19 A. I have never seen such an arrangement work effectively. Again, it is just not in a water  
20 company's interest to cut into the sales of its primary product. Nor is it helpful to the  
21 wastewater company to be forced into AWC's 'wholesale' agreement, a scheme that  
22 allows the water company to retain nearly all the profits from sales of reclaimed water (at  
23 the cost of the wastewater company), and leaves the wastewater customer completely  
24 without any portion of the financial benefits of reclaimed water sales. Even if AWC  
25 proposed to 'share' with its customers the profits it takes from reselling the product of the  
26 wastewater company, a perversion exists: The wastewater company faces higher capital  
27

---

<sup>2</sup> See pages 11 to 13 of my direct testimony.

1 and operating costs, and must transfer profit opportunity to a lower cost, unaffiliated  
2 company.

3  
4 A good example of the absurdity of AWC's scheme is in the Gold Canyon area. AWC  
5 provides water service to this area, and Gold Canyon Sewer Company ("Gold Canyon")  
6 provides wastewater service (I am a former President of Gold Canyon). AWC asserted  
7 some sort of right to the reclaimed water produced by Gold Canyon, and basically blocked  
8 Gold Canyon from selling the reclaimed water itself. So Gold Canyon sells the reclaimed  
9 water to AWC, which sells it to golf courses which were several hundred feet away.

10  
11 AWC does not own any reclaimed water facilities – the pipes and so forth are all owned by  
12 Gold Canyon or the golf course customers. AWC contributes exactly zero economic  
13 value, yet it takes profits from the scheme. Moreover, AWC has no incentive to promote  
14 use of reclaimed water, it doesn't add to Rate Base, it isn't sold for the same price of  
15 AWC's potable water. So, AWC just sells reclaimed to very big users – like golf courses –  
16 that have the economic leverage to insist on such service. But AWC certainly won't  
17 provide reclaimed water to residential customers.

18  
19 Because AWC has not promoted reclaimed water sales, will not put in any of the  
20 infrastructure necessary to fully utilize the resource, and has forced Gold Canyon to give  
21 up its right to sell its own product, Gold Canyon is left with excess reclaimed water, which  
22 it cannot sell, so it simply discharges into a wash. I understand that these discharges have  
23 resulted in numerous complaints. Mr. Briggs, in his Rebuttal Testimony details the effects  
24 of such discharge points.

25  
26 An even worse example occurs right up the road from Gold Canyon, in the "Entrada Del  
27 Oro" area. In that area, AWC provides water service, and wastewater service is provided

1 by Entrada Del Oro Sewer Company (“Entrada”). Entrada operates a small “package  
2 plant.” The reclaimed water from this plant is not reused or recharged in any way.  
3 Instead, it is simply discharged into a nearby wash. In sum, the combination of AWC and  
4 Entrada results in not one gallon of use for reclaimed water and no recharge. The  
5 combination of AWC and Gold Canyon is only marginally better. As a State, Arizona can  
6 and must do better.

7  
8 **Q. What about AWC’s “partnership” with Southwest Water Company?**

9 A. AWC’s arrangement with Southwest Water Company (“Southwest”) is not a real option  
10 for water conservation. Indeed, it represents something of a “worst case scenario.”  
11 AWC’s contract with Southwest expressly provides that Southwest may not “offer or  
12 provide, sell or deliver any type of water service, including, but not limited to, any effluent  
13 or reclaimed water service of any type (except wholesale service to [AWC]).”<sup>3</sup> Southwest  
14 is therefore forbidden from selling reclaimed water, except to AWC. And, as in Gold  
15 Canyon, AWC has no incentive to promote the use of reclaimed water. Indeed, as Mr.  
16 Symmonds explains, AWC’s engineering plans do not include any plans for reclaimed  
17 water infrastructure. So, if Southwest serves AWC’s extension area, Southwest would be  
18 forbidden from selling reclaimed water – and AWC has no plans to build the facilities to  
19 sell it. In short, a combination of AWC and Southwest would result in no reclaimed water  
20 use in AWC’s requested extension area. That is simply not acceptable.

21  
22 **Q. Do you have further comments on the AWC / Southwest agreement?**

23 A. Yes. It demonstrates AWC’s view of reclaimed water – that reclaimed water is a  
24 competitive threat to AWC. The prohibition on Southwest selling reclaimed water is part  
25 of a “Covenant not to Compete.” Clearly, AWC views reclaimed water as the competition,  
26

27  

---

<sup>3</sup> “Cooperative Service Agreement” between Southwest and AWC, dated November 18, 2002 at ¶  
2(a); attached to Mr. Garfield’s Direct Testimony as Exhibit WMG-3.

1 and thus, a threat. Nothing could better illustrate why non-integrated providers do not  
2 support conservation.

3  
4 **Q. Can Southwest provide wastewater service to AWC's extension area?**

5 A. I don't see how. For one thing, Palo Verde has the only approved "208 Plan" for the area.  
6 Further, Southwest does not appear to be authorized to do business in Arizona<sup>4</sup>, and it does  
7 not appear to have any operations in Arizona.<sup>5</sup>

8  
9 **Q. Has AWC asked Southwest to serve in its extension area in this case?**

10 A. No it has not, and it has never even communicated with Southwest about this area.<sup>6</sup>

11  
12 **Q. Has AWC ever asked Southwest to provide service elsewhere?**

13 A. Yes, twice. The AWC / Southwest agreement is invoked by AWC sending Southwest an  
14 "invitation" to provide wastewater service. Southwest can then accept or decline.<sup>7</sup> AWC  
15 sent Southwest invitations for three developments on April 29, 2004. AWC also sent  
16 Southwest an invitation for the Entrada Del Oro development (mentioned above) on July  
17 15, 2004. Southwest apparently never responded, and AWC's two letters constitute the  
18 only communications between AWC and Southwest since the agreement was signed in  
19 2002.<sup>8</sup> Thus, neither Southwest nor AWC have made much use the agreement, and no  
20 project has ever been undertaken through the agreement.

21  
22  
23  
24  
25  
26 <sup>4</sup> Per the ACC's Corporations Division web-site, visited February 12, 2007.

27 <sup>5</sup> Per Southwest's website, [www.swwc.com/?fa=operations](http://www.swwc.com/?fa=operations); visited February 12, 2007.

<sup>6</sup> AWC response to Global 1.14.

<sup>7</sup> Southwest / AWC agreement at ¶ 1(c).

<sup>8</sup> AWC response to Global 1.14.

1 **IV. PLANNING GROWTH WITH OUR GOVERNMENT PARTNERS.**

2  
3 **Q. Have you worked with the Ak-Chin Indian Community in planning the services to be**  
4 **provided to your requested extension area?**

5 A. Yes. We first became actively involved with the Ak-Chin when they participated in the  
6 process of amending our "Section 208" Plan. After many discussions, we entered into a  
7 landmark agreement with the Ak-Chin Indian Community that provides for cooperation  
8 between the Global Water and the Ak-Chin. The agreement also prohibits discharges into  
9 certain washes of cultural significance to the Ak-Chin. Since we signed the agreement, we  
10 have been in frequent contact with the Ak-Chin.

11  
12 **Q. What concerns did the Ak-Chin express in that Section 208 planning process?**

13 A. The Ak-Chin had the following concerns:

- 14 (1) Discharges into culturally significant washes;  
15 (2) Impacts to their groundwater supply;  
16 (3) Recharge should be done in the same sub-basin;  
17 (4) Subsidence.

18  
19 **Q. Please elaborate.**

20 A. Certain washes have cultural significance to the Ak-Chin. The Ak-Chin do not want  
21 wastewater discharges into these washes – this is an issue that they feel very strongly  
22 about. So Global Water agreed that it would not discharge into these washes. This will  
23 require some of our water reclamation plants to be "zero-discharge." I am not aware of  
24 any other wastewater provider that has made such a commitment. Other options – such as  
25 package plant operations, or septic tanks, will not offer this level of protection to culturally  
26 significant areas.

27

1 The Ak-Chin are also concerned about impacts on their groundwater. They have extensive  
2 agricultural operations that use groundwater as well as surface water. They take a very  
3 long-term view, and their water supplies are very important to them. Thus, they are  
4 concerned about anything that could impact their supplies, such as excessive pumping in  
5 the same sub-basin. Global Water's extensive groundwater conservation programs address  
6 this concern. AWC's groundwater-focused alternative does not.

7  
8 Similar concerns exist regarding the location of recharge. Mr. Briggs explains in his  
9 testimony only recharge within the same sub-basin will replenish the aquifer. In other  
10 words, recharging the aquifer under Phoenix does nothing preserve the Ak-Chin's water  
11 supplies. AWC relies on the CAGR, which does not actively recharge in the Maricopa-  
12 Stanfield sub-basin. In contrast, as Mr. Symmonds explains, we will have multiple  
13 recharge wells within the correct sub-basin.

14  
15 Lastly, the Ak-Chin are concerned with subsidence. Their reservation covers a large area,  
16 and subsidence can directly impact their lands. As Mr. Briggs explains, excessive use of  
17 groundwater will cause subsidence – a process that is already happening.

18  
19 **Q. Have you also kept in contact with the Cities of Casa Grande and Maricopa?**

20 **A.** Yes. Global Water has "Public Private Partnership" agreements with both Casa Grande  
21 and Maricopa. Under these agreements we keep in constant contact, and we coordinate our  
22 planning with the cities.

23  
24 **Q. Do AWC's plans mesh with the cities' plans?**

25 **A.** No. For example, AWC plans do not reflect each city's "municipal planning area" or  
26 "MPA." Casa Grande has entered into intergovernmental agreements with neighboring  
27 cities to establish its MPA boundaries. AWC's proposed extension area does not relate to

1 either city's MPA. In contrast, our planning agreements with each city are based on the  
2 MPAs of Casa Grande and Maricopa.

3

4 **Q. Please describe the location of each city's MPA in relation to the areas in this case.**

5 A. The boundaries of our partnership agreements with Casa Grande and Maricopa are based  
6 on each city's MPA. Our partnership agreement boundaries are shown on Exhibit 1 to Mr.  
7 Symmond's Direct Testimony. These areas include the extension areas requested by  
8 AWC, Santa Cruz, or Palo Verde in this case.

9

10 **Q. Are there other examples of AWC disregarding the cities' plans?**

11 A. Yes, under the "Growing Smarter" legislation, each city has a water resource plan. The  
12 plans for Casa Grande and Maricopa emphasize the use of reclaimed water, recharge of  
13 water, and other water conservation efforts. As Mr. Symmonds shows, AWC's  
14 engineering plans for the extension area do not include facilities for reclaimed water or  
15 recharge.

16

17 **Q. Why are the cities concerned with such matters?**

18 A. Each city faces massive growth. Done right, it can be a great benefit to the community and  
19 the local economy. But done wrong, it can be a disaster. Without groundwater  
20 conservation, sustainable growth will not be possible on a large scale. In short, the very  
21 future of each city depends on it.

22

23 **Q. Do the cities have other concerns?**

24 A. Yes. They share many of the same concerns as the Ak-Chin. In particular, they have  
25 similar concerns about groundwater supplies, sub-basin specific recharge, and subsidence.

26

27

1 **V. CONCLUSION.**

2  
3 **Q. Can you summarize the choice the Commission faces in this case?**

4 A. Yes. The Commission must recognize the inevitability of growth in Arizona and the  
5 broader role it will play in the determination of conservation policy in the large areas  
6 which are now or will be controlled by private utilities directly in the path of this growth.  
7 Growth forecasts from the University of Arizona and the Department of Economic  
8 Security indicate that the Greater Phoenix area will add more than half a million new  
9 housing units in the next decade.<sup>9</sup> These forecasts also show that the Greater Phoenix area  
10 will add more than 50,000 new housing units each year through 2020.<sup>10</sup>

11  
12 This growth is inevitable. The only question is will growth be sustainable in the long term,  
13 or will we squander the resources and opportunities we have. The Commission must  
14 decide whether the new public interest in the 21<sup>st</sup> century will be defined by “Scarcity  
15 Management”, the thoughtful, proactive, conscientious planning process that, while  
16 expensive, will lead to deliberate and significant reductions in water consumption  
17 generally and a marked and predicable reduction in groundwater consumption specifically,  
18 or will it emphasize short term rates, without regard for the consequences.. Our polling  
19 indicates that the vast majority of our customers are currently ready to pay more for water  
20 if they know that their utility is doing everything it can to conserve and protect this  
21 valuable resource. The Commission must chose between a provider that uses 5,500  
22 gallons per EDU and one that uses 10,000 per EDU. It must chose between a provider that  
23 has plans for reclaimed water and recharge infrastructure, and one that does not, one that  
24 relies on its own sub-basin-specific recharge, and one that relies on the CAGR, one that  
25 has gone to extensive efforts to partner with the municipalities within which it serves and  
26

27 <sup>9</sup> “Slower Growth Ahead”, Westmarc presentation, Elliot D. Pollack & Company, January 31, 2007.

<sup>10</sup> Id.

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one that has not and one that has taken the time to learn and embrace the cultural significance of water to the Ak-Chin Community and one that has not. In the end, Global Water's business model is focused on providing groundwater conservation and a sustainable, self-reliant utility service. AWC's model is focused on selling as much water as possible. The choice is clear.

**Q. Does this conclude your prepared rebuttal testimony?**

**A. Yes.**

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**

JEFF HATCH-MILLER- CHAIRMAN  
WILLIAM A. MUNDELL  
MIKE GLEASON  
KRISTIN K. MAYES  
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. W-01445A-06-0199  
ARIZONA WATER COMPANY FOR AN )  
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) DOCKET NO. W-03576A-05-0926  
IN THE MATTER OF THE APPLICATION OF )  
SANTA CRUZ WATER COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY )

Rebuttal Testimony of

Rita Maguire  
Maguire & Pearce, PLLC

on Behalf of

Palo Verde Utilities Company and  
Santa Cruz Water Company

February 14, 2007

1 **Q. Please state your name and employer.**

2 A. My name is Rita Maguire. I am a Member of the law firm of Maguire & Pearce, PLLC.

3

4 **Q. Did you file Direct Testimony in this case?**

5 A. Yes.

6

7 **Q. Please explain why the use of reclaimed water is important.**

8 A. The ever-increasing demand for potable water in Pinal County and across Arizona requires  
9 maximizing the use of all types of water. Among the most innovative uses of our water  
10 supplies is the treatment and delivery of reclaimed water. Reclaiming wastewater and  
11 making it available for outdoor use, reduces the demand for potable water supplies and  
12 postpones the day when additional drinking water supplies must be acquired to meet  
13 residential demand. Municipalities across the country have for some time successfully  
14 delivered non-potable water to parks, golf courses, athletic fields and industrial customers.  
15 Los Angeles, for example, has adopted a goal of recycling 40% of the city's wastewater by  
16 2010. Unfortunately, the use of effluent in Arizona represents only about 2% of the state's  
17 water budget. The percentage increases to 10 % within the Phoenix and Tucson AMAs but  
18 in Pinal County, effluent represents less than 1% of its water budget according to ADWR's  
19 Third Management Plan. Given the dramatic growth taking place in that AMA, every  
20 effort should be made by state agencies to promote the use of reclaimed water.

21

22 **Q. Are there any other reasons for replacing potable water with reclaimed water**  
23 **whenever possible?**

24 A. Reclaimed water is an extremely reliable source of water. In fact, it is often said that  
25 reclaimed water is the only water supply that grows with the population. In the 2004  
26 Arizona Town Hall Report on "Arizona's Water Future" it was noted that "[w]hile

27

1 groundwater and surface water availability depends to a considerable extent on geography,  
2 effluent is a growing resource in all of the AMAs.” (Town Hall Report at p. 82)

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**Q. Why aren't we seeing greater utilization of reclaimed water in our communities?**

A. One of the challenges to increasing the use of reclaimed water is the cost to build the non-potable delivery systems in existing residential areas. The expense of tearing-up streets and curbing, rerouting existing utility infrastructure and most importantly, interfering with access to and use of private property, causes municipalities to shy away from initiating these projects after the fact. Tucson city representatives cite all of the above as reasons why they are not retrofitting existing subdivisions with non-potable water systems although they actively support the installation of these systems in new communities. Other cities in the state have no choice but to retrofit their water systems due to limited water budgets. For example, because Flagstaff's water supply is extremely vulnerable to drought, city officials have gone to extraordinary lengths to replace potable drinking water supplies with reclaimed water wherever possible. Flagstaff's efforts have been undertaken at a considerable cost to the city and has resulted in significant inconvenience to homeowners and businesses during the installation process. Today, that city requires.....

**Q. What is ADWR's view toward the use of reclaimed water?**

A. Wastewater is viewed by ADWR as a resource rather than a problematic by-product of water use.<sup>1</sup> The right to recharge effluent for groundwater storage credits is recognized under Arizona law, and ADWR regulatory policies give owners of effluent an incentive to put it to use. For example, when effluent is recharged in a *managed* Underground Storage Facility (USF) for the purpose of earning credits to pump groundwater, the recharging entity receives long-term storage credits for 50% of the water recharged. But if the effluent is recharged at a *constructed* USF, the recharging entity receives full credit for the

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<sup>1</sup> For example, the Tucson AMA has identified recharged effluent as a significant factor in determining whether the AMA achieves Safe Yield in 2025 see, [www.azwater.gov/WaterManagement/Content/AMA](http://www.azwater.gov/WaterManagement/Content/AMA).

1 water stored. The difference in the percentage of long-term storage credits issued by  
2 ADWR is a reflection of the value the Department places on efficient utilization of effluent  
3 and the investments required from water providers to make this possible.  
4

5 Beginning in 2005, ADWR began a stakeholder's process to evaluate ADWR's existing  
6 regulatory program for large municipal providers in Active Management Areas under the  
7 Third Management Plan. As part of this process, ADWR issued two survey reports about  
8 local and regional conservation programs.<sup>2</sup> Among the water supplies under evaluation is  
9 the use of reclaimed water. Because of the scarcity of available supplies, the Department  
10 views effluent as a valuable resource that can be used as to enhance the water resources in  
11 a providers' overall water supply portfolio; and therefore, the Department encourages its  
12 efficient use. In addition, to encourage the use of effluent for assured water supply  
13 purposes the Department, as part of its recent Pinal AMA Assured Water Supply  
14 rulemaking process, issued a policy statement clarifying the ability and regulatory  
15 requirements criteria for utilizing effluent as a 100 year assured supply. This will enable  
16 designated providers, like Global, to more easily demonstrate that reclaimed water supplies  
17 are available to support new growth in their service areas.  
18

19 **Q. Why has Arizona Water Company Prepared a CAP Water Use Plan but Global**  
20 **Water has not?**

21 **A.** William Garfield's Direct Testimony before the ACC<sup>3</sup> states that Arizona Water Company  
22 has prepared a detailed, long-term water use plan discussing "all existing water supplies  
23 and demand patterns, how and when CAP water will be used through the year 2025, all  
24 future water sources that the Company plans to use, all major infrastructure components  
25 required to use CAP water, projected capital and operating and maintenance costs for

26 <sup>2</sup> A Summary of Water Conservation Programs in Active Management Areas, available at  
27 [www.azwater.gov/conservation](http://www.azwater.gov/conservation), and A Web-based Summary of Conservation Programs in Arizona,  
California, Colorado, Nevada, New Mexico, and Utah, available at *Id.*

<sup>3</sup> Pre-filed Direct Testimony of William M. Garfield on Behalf of Arizona Water Company dated January 29,  
2007, pgs. 18-19.

1 future water supplies and numerous other matters.” While this is an impressive list of  
2 information, it is a reflection of the limited oversight that ADWR has over an un-  
3 Designated water providers like AWC rather than a testament to its long-term planning  
4 activities. State law was amended in 2005 to require Community Water Systems to submit  
5 a System Water Plan to the Director of ADWR.<sup>4</sup> This requirement did not go into effect  
6 until January 1, 2007.<sup>5</sup> Designated water providers like Global are subject to rigorous and  
7 on-going evaluations of their municipal water supplies by ADWR and as a consequence,  
8 are exempt from these new requirements.<sup>6</sup>  
9

10 **Q. Does AWC’s exclusive reliance on the CAGR D to replenish its excessive groundwater**  
11 **pumping from the Pinal AMA concern you?**

12 A. Yes. As I stated in my Direct Testimony to the Commission, there are three key concerns  
13 about the ability of the CAGR D to perform in the future. First, many more entities have  
14 joined the CAGR D than was originally anticipated. Not only have private developers  
15 enrolled their subdivisions, entire cities and towns have enrolled.<sup>7</sup> This has dramatically  
16 increased the future liabilities of the CAGR D. Second, because the CAGR D is required to  
17 replenish in perpetuity all groundwater that is pumped by its members in excess of the  
18 allowances established under ADWR’s Assured Water Supply Rules, they will have to find  
19 large amounts of renewable water supplies to meet these obligations. As the population  
20 grows, so does the demand for renewable supplies, not only within the AMAs, but  
21 throughout the state and entire southwestern United States. And finally, the increased  
22 competition for renewable water supplies will inevitably drive up its cost, which in turn  
23 directly impacts the property owners within the Member Areas of the CAGR D. Maricopa  
24 County Treasurer, David Schweikert, reports that his office has already received numerous  
25

26 <sup>4</sup> A.R.S. Title 45, Chapter 1, Article 14 (Laws 2005, Ch. 223, § 1). Note, the specific statutory citation for  
Community Water Systems is A.R.S. § 45-341 et. seq., not § 45-330 et. seq. as cited in Mr. Garfield’s  
testimony.

27 <sup>5</sup> A.R.S. § 45-342.

<sup>6</sup> A.R.S. § 45-342 (E).

<sup>7</sup> See Maguire Direct Testimony at p. 14.

1 complaints from homeowners' associations that are surprised to see this annual fee attached  
2 to their property taxes. In order to avoid the imposition of a tax lien on their property, they  
3 are required to impose a special assessment to cover the unexpected cost. Because a  
4 number of factors outside the control of water managers determine how much renewable  
5 water will be available each year, its price is impossible to predict and could fluctuate  
6 dramatically from year to year, making it very hard to adequately budget for.

7  
8 There is no doubt that the CAGR D provides a critical service within the CAP service area.  
9 But because of the many risks associated with it, enrollment should be a choice of last  
10 resort. Responsible water providers should make every effort to minimize dependency  
11 upon the CAGR D to meet the water demands that growth brings and look to other sources  
12 like CAP and reclaimed water to serve their customers. Despite the fact that since 1985,  
13 AWC has held CAP subcontracts for almost 11,000 acre feet of CAP water to be delivered  
14 through its Casa Grande and Coolidge water systems, the most water AWC has delivered to  
15 date is 2,554 acre-feet in 2005.<sup>8</sup>

16  
17 **Q. Is there anything more you would like to add to your testimony?**

18 **A.** Yes. The three Lower Basin States (Arizona, California and Nevada) are experiencing  
19 unprecedented growth. This growth is taxing water managers' ability to provide long-term  
20 reliable, high quality, affordable water supplies to their customers. One of the recent  
21 responses in the Lower Basin is to move outside traditional political boundaries to find  
22 additional resources. For example, an application to export 14,000 acre-feet of  
23 groundwater from the Beaver Dam Wash area in northeastern Mohave County on behalf of  
24 the residents in Mesquite, Nevada is currently before the Director of ADWR.

25  
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27  

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<sup>8</sup> CAWCD 2005 Calendar Use CAP Use Report.

1 Not surprisingly, the proposal to export groundwater from Arizona to Nevada has caused  
2 a great uproar among the residents of the Beaver Dam Wash area. They are expressing  
3 concerns about the prospect of dry wells and subsidence due to groundwater overdraft.  
4 And, they are objecting to pure Arizona groundwater being transferred to Nevada,  
5 blended with arsenic-laden groundwater, and transported back. "They can't take this  
6 water into Nevada without having a negative impact on Arizona. There's just no way,"  
7 Bob Frisby, Manager of the Beaver Dam Water Company, told the *Las Vegas Review-*  
8 *Journal* in December 2006. "It will dry us up." But there is a way, federal case law  
9 clearly recognizes the ability to export groundwater across state lines; the only issue is  
10 to what extent the source state may limit the circumstances of the transfer.

11  
12 The U.S. Supreme Court in *Sporhase v. Nebraska*,<sup>9</sup> identified several key factors for  
13 determining whether a groundwater supply could be exported including the degree to  
14 which the source state imposes restrictions on access to groundwater to pumpers within  
15 their state. The Arizona Groundwater Management Act is a significant shield against  
16 outside attempts to gain access to the state's groundwater supplies within the AMA's. It  
17 is unfortunate that a similar program does not exist outside the AMA's as well.  
18 However, even within the AMA's it is extremely important that every state agency with  
19 regulatory responsibility over the state's water supplies consistently act to protect  
20 groundwater. The best way to accomplish this is to adopt and enforce water management  
21 policies that promote the utilization of renewable water supplies and protect finite  
22 groundwater supplies even if in the short-term, the result is increased costs for water.

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<sup>9</sup> 458 U.S. 941, 102 S.Ct. 3456, 73 L.Ed. 2<sup>d</sup> 1254 (1982).

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**

JEFF HATCH-MILLER- CHAIRMAN  
WILLIAM A. MUNDELL  
MIKE GLEASON  
KRISTIN K. MAYES  
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. W-01445A-06-0199  
ARIZONA WATER COMPANY FOR AN )  
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IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. SW-03575A-05-0926  
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OF CONVENIENCE AND NECESSITY )

) DOCKET NO. W-03576A-05-0926  
IN THE MATTER OF THE APPLICATION OF )  
SANTA CRUZ WATER COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY )

Rebuttal Testimony of

Philip Briggs  
Water Resources Consulting SW, LLC

on Behalf of

Palo Verde Utilities Company and  
Santa Cruz Water Company

February 14, 2007

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I. Introduction..... 1

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1 I. INTRODUCTION.

2

3 Q. Please state your name and employer.

4 A. Philip Briggs. I am the manager of Water Resources Consulting Southwest, LLC.

5

6 Q. Did you file Direct Testimony in this case?

7 A. Yes I did.

8

9 Q. Mr. Briggs, have you reviewed the pre-filed testimony of Mr. Garfield and Mr.  
10 Whitehead?

11 A. Yes I have.

12

13 Q. What is your general reaction to that testimony?

14 A. Overall, I was struck by the complete lack of any discussion about the groundwater  
15 resources available for the use in the Pinal AMA. What I found especially surprising was  
16 the lack of analysis of the impacts of historic, and proposed future water use. AWC fails to  
17 describe water use, and system development and long-term water resource planning within  
18 their expansion area; instead, AWC witness testimonies merely present general platitudes  
19 regarding an undefined part of an ambiguously large area. For instance, AWC has  
20 delineated a planning area in Exhibit MJW 1, dubbed the "Pinal Valley Water System"  
21 ("PVWS"), that includes their current CC&N areas, the requested expansion area, and  
22 other areas of the Pinal AMA that are outside AWC's CC&Ns. AWC witnesses then make  
23 generalized comments about the importance of renewable resources, yet offer no plan to  
24 provide for reclamation and reuse. Lastly, they state AWC's intent to build a surface water  
25 plant but not until 2012.

26

27

1 **II. GROUNDWATER RESOURCES AVAILABLE IN THE PINAL AMA ARE**  
2 **LIMITED.**

3  
4 **Q. Are resource availability and potential future impacts of water use of concern in this**  
5 **matter?**

6 A. Yes. These factors are key in meeting the Pinal AMA management goal to “.. preserve  
7 future water supplies for non-irrigation use ...”. The Pinal AMA has noted the need for  
8 management “... to ensure a reliable and sustainable supply of water for municipal and  
9 industrial users. ...”<sup>1</sup>

10  
11 This concern lead to the Pinal AMA GWUAC developing a policy statement that focuses  
12 on increasing the use of renewable supplies by municipal and industrial users, and  
13 encouraging replenishment activities within critical areas. The ADWR has begun  
14 implementation of these policies through a rulemaking package that modifies the AWS  
15 rules in the Pinal AMA. Mr. Garfield participated in these discussions, so I’m sure he is  
16 aware of the issues.

17  
18 Furthermore, the natural recharge to the groundwater system – in the entire Pinal AMA has  
19 been estimated to be only 82,500 acre-feet/year. This is far less than the projected  
20 demands in AWC’s so-called PVWS by 2025.<sup>2</sup> Because these are future management  
21 directions in the Pinal AMA that will shape future municipal development, they should be  
22 considered in this matter.

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<sup>1</sup> See Exhibit 2 to my direct testimony.

<sup>2</sup> See Garfield Direct Testimony Exhibit WMG-2, Table 2.5 at page 16.

1 **Q. Your direct testimony includes considerable discussion of resource availability and**  
2 **use – could you highlight key conclusions from that testimony?**

3 A. My key conclusions are as follows:

- 4 • The groundwater resources of the Pinal AMA have been and will continue to be  
5 severely overdrawn.
- 6 • Current and committed municipal demands exceed the amount of renewable  
7 groundwater supplies (82,500 a-f/year). This means that additional municipal supplies  
8 must be drawn from other renewable sources, including effluent and CAP water.
- 9 • Municipal and industrial uses will increase beyond the renewable groundwater supply,  
10 with almost total reliance on groundwater for the “wet” water without extra efforts by  
11 water providers to use renewable supplies.
- 12 • Future reductions in the use of CAP water supplies by non-Indian agriculture in the  
13 Pinal AMA are expected because of higher priority municipal and industrial CAP  
14 allocations becoming fully utilized.
- 15 • CAP water supplies for non-Indian agricultural uses will likely end in 2030.
- 16 • The Pinal AMA does not have a regional reclaimed water system, which constrains the  
17 availability of effluent for turf or other direct use facilities.

18  
19 **Q. What are the problems caused by describing the resources available for use in the**  
20 **expansion area as part of the larger PVWS?**

21 A. The testimony of Mr. Garfield<sup>3</sup> and the attached CAP water use plan<sup>4</sup> create the impression  
22 that surface water and the AWC CAP allocations can be used to meet the demands  
23 anywhere within the PVWS. This is not the case for surface water and ignores the intent  
24 of CAP allocations.

25  
26  
27 <sup>3</sup> See Garfield Direct Testimony at page 15, line 4 and page 28, line 21.

<sup>4</sup> See Exhibit WMG-2, at page 7.

1 AWC is shifting – through the proposed delivery system – renewable water supplies that  
2 are intended for established communities and existing demands. Apparently, this is in  
3 order to fuel additional development elsewhere in the Pinal AMA and is not long-term  
4 resource management. It is very unlikely that the mayors of those established communities  
5 would go along with AWC’s scheme to send their renewable water supply to AWC’s  
6 “PVWS”.

7  
8 The surface water available from the Gila River is restricted to use only on lands within the  
9 San Carlos Irrigation and Drainage District (“SCIDD”), which is correctly described in  
10 Exhibit WMG-2 at page 8. But there is no map, nor is there any analysis attached to Mr.  
11 Garfield’s testimony. In fact, AWC’s requested expansion area lies outside of the SCIDD.  
12 The SCIDD lands, as shown in my Exhibit 42, actually lie to the east of AWC’s requested  
13 extension area. Thus, Gila River water will not be available for use in AWC’s requested  
14 extension area.

15  
16 I was involved in developing those allocations when I was at ADWR in the early 1970s.  
17 Those allocations were made to specific entities to meet current and projected municipal  
18 demands for their designated service areas, as shown by Mr. Garfield in his Exhibit MJG 2  
19 (page 7).

20  
21 **III. RESPONSE TO AWC’S TESTIMONY ABOUT REUSE AND RECHARGE.**

22  
23 **Q. You mentioned constraints on the availability of effluent for turf or other direct use**  
24 **facilities. Did Mr. Garfield describe effluent use and recharge?**

25 **A.** Yes he did. AWC indicates it is supportive of both, but Mr. Garfield does not propose any  
26 actual reclaimed water use or recharge within AWC’s PVWS.  
27

1 Exhibit WMG-2, Section 6.5 at page 43 describes AWC's plan for direct and indirect use  
2 of reclaimed water. The report notes that AWC does not provide wastewater treatment  
3 services in the so-called PVWS planning area, and merely states its intent to provide for  
4 future direct and indirect use of reclaimed water through cooperative agreements with the  
5 entities that operate wastewater facilities (e.g., the cities of Casa Grande, Eloy, and  
6 Coolidge.) The report notes that "... future use of reclaimed water will play an important  
7 role in the overall water supply portfolio of the PVWS planning area. ...". An example  
8 calculation is provided that, given the assumptions used there could be 40,267 a-f/year of  
9 reclaimed water available for use in 2025. The report notes the AWC intent to meet with  
10 the facility operators in 2007 "... to maximize the beneficial use of reclaimed water. ...".

11  
12 Clearly the AWC recognizes the benefits of using reclaimed water.<sup>5</sup> But AWC does not  
13 propose to collect wastewater, treat it, and deliver reclaimed water to potential users. It is  
14 also clear AWC does not intend to build the infrastructure necessary to deliver reclaimed  
15 water to potential users, as this plan shows. There were no plans or costs provided in  
16 Chapter 6 for reclaimed water systems, as was done for AWC's other future water  
17 supplies.

18  
19 AWC's plan to recharge is equally non-existent. Exhibit WMG-2, at page 8, states that  
20 "[another] feasible reuse alternative for wastewater providers is to construct ... facilities  
21 for the recharge of effluent for long-term storage credits ...". After the wastewater  
22 providers have designed, permitted, built and successfully operated these facilities, AWC  
23 could buy these credits "... for beneficial use by AWC customers. AWC's plan is for  
24 another entity to spend tens of millions of dollars building an advanced wastewater  
25 reclamation system; to site, permit, and construct a recharge facility, and then this  
26  
27

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<sup>5</sup> See Garfield Direct Testimony at page 18, lines 7 through 9.

1 unidentified company would sell the recharge credits to AWC. No mention is made of the  
2 likely cost to AWC for those credits.

3  
4 Clearly AWC also recognizes the benefits of recharging reclaimed water.<sup>6</sup> But the plan  
5 shows they just don't intend to do it.

6  
7 **Q. If AWC recognizes the benefits of reuse and recharge of effluent, but doesn't have**  
8 **plans to do it themselves, do you think it will happen?**

9 A. Certainly not effectively in the expansion area. This area is far removed from current  
10 wastewater operations. Casa Grande appears to have no plans to serve the area. Palo  
11 Verde has plans for only part of AWC's very large area. More importantly, Palo Verde has  
12 stated that its plans do not include providing service in AWC areas. Thus, if AWC gets its  
13 requested CC&N, the major regional providers, Casa Grande and Palo Verde, will not be  
14 available. There will be some sort of wastewater plans as developments come to AWC for  
15 service, but they will very likely be fragmented and built development by development.  
16 The wastewater will be treated somehow, but the opportunities to build the regional reuse  
17 and recharge facilities are significantly limited under this un-planned approach.

18  
19 By choosing not to take the lead by building those treatment plants and systems, AWC  
20 loses any leverage it may otherwise have had to make developers provide for wastewater  
21 reuse in their communities.

22  
23 **Q. Does Mr. Garfield address wastewater reuse and recharge in his testimony?**

24 A. Not really. Mr. Garfield's statements are broad, general, and vague. And Mr. Garfield  
25 makes one statement that is just incorrect. Let me explain by providing some additional  
26 background information.

27  

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<sup>6</sup> *Id.*

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Recharge of any type of water is simple in concept, but difficult in execution. Recharge of effluent is further complicated by water quality, even after extensive treatment.

Recharge projects, which I would define as those facilities where recharge is the primary purpose, generally use two different approaches. The most popular are those that spread the water at or near the land surface, in basins, trenches, or natural streams. The other approach is direct injection by well, below the surface, either above or below the ambient groundwater level.

In Arizona recharge projects must be designed, permitted, usually pilot tested, and built at full scale before they can operate. Once all those hurdles are cleared, success requires constant maintenance. Surface spreading projects lose capacity over time due to physical, biological, and chemical clogging of the soil surface. Inject wells can suffer the same sort of clogging of the borehole or within the formation. And otherwise successful projects have failed to meet their design capacity because the aquifer doesn't have the capacity to move the recharged water away from the facility as fast as it was initially recharged.

Given this brief introduction, I think it is clear that recharge project don't just happen because they are good water management practice. The history of recharge projects in the Pinal AMA also supports this conclusion. ADWR recharge project permit records show that of the cities AWC offers as potential operators of recharge projects, only Eloy has a permit for recharge of reclaimed water – and that is for 2,240 a-f/year.

So, Mr. Garfield is unequivocally wrong when he broadly claims – on page 25, at line 1 of his testimony – that "... water discharged from a wastewater treatment plant is recharged into the region's aquifer and can be retained for future use and is not wasted ...".

1 There are a couple of assertions in this one statement that are both wrong. In the first  
2 place, discharge to a wash or detention pond is not recharge. Secondly, most of the water  
3 will likely be wasted, lost from the system, and not retained for future use. Think about  
4 what happens with such a discharge.

5  
6 Continual discharges to a dry wash or a detention pond will create a surface water feature,  
7 with a volume and area sufficient to balance inflow and outflow. Inflow is the effluent  
8 volume released over time. Outflow is infiltration through the bottom of the wash/pond  
9 and evaporation from the water surface. Infiltration decreases over time, partly due to  
10 physical processes, mostly due to the clogging of the soil/water interface due to  
11 sedimentation and biological films (*i.e.* slime). By way of example, remember how long  
12 water stands in a mud puddle, especially in the summer when the puddle turns green with  
13 algae; the same thing happens on a larger scale with uncontrolled discharge points.

14  
15 Evaporation continues apace, and can actually increase as the discharged water gathers in  
16 ponds and gets even murkier from sediment and algae. The darker water absorbs more  
17 solar energy; water temperatures and hence evaporation increase. The continual source of  
18 soil moisture under and near the ponded water creates over time its own riparian zone,  
19 which leads to ever increasing water use by transpiration from the surrounding vegetation.  
20 And brings in very significant vector issues (*e.g.*, mosquitoes) – which with West Nile's  
21 arrival in Arizona, has become a major public health issue.

22  
23 The only 'debate' on discharge points is whether the water lost from the region by  
24 discharge's increased evaporation and transpiration is a waste? If the water feature  
25 becomes a prime birding spot, there could be an argument by some that discharges are  
26 'better for the environment'. But if our goal is the conservation of resources leading to  
27 sustainability and long-term reliability of water systems, then, discharges are a waste.

1 **Q. Is the location of the recharge facility of importance in meeting the water needs of an**  
2 **area in the Pinal AMA?**

3 A. Yes. As I described in my direct testimony, the Pinal AMA Staff has noted the “need for  
4 regional recharge and recovery planning in the Pinal AMA to minimize the impacts of  
5 critical area programs that may develop in the future, including lack of physical availability  
6 of groundwater, excessive water level decline rates, land subsidence, and earth fissuring.”<sup>7</sup>  
7 Developers might attempt to address this by enrolling lands in the CAGRDR, even though  
8 the replenishment (recharge) will occur at a recharge facility in another AMA – the  
9 Phoenix AMA – where the CAGRDR is conducting replenishment.

10  
11 But even replenishment or natural recharge elsewhere in the Pinal AMA will not address  
12 the critical area problems in the Maricopa-Stanfield sub-basin of the Pinal AMA due to  
13 current and likely future groundwater flow regimes.

14  
15 Due to substantial overdraft of the groundwater resources in the Pinal AMA, groundwater  
16 flows generally had been captured by the separate cones of depression formed in the  
17 middle of each sub-basin.<sup>8</sup> This capture means, for example, that only that portion of the  
18 natural, incidental, and artificial recharge that occurs in the Maricopa-Stanfield sub-basin  
19 would be available for groundwater users in the sub-basin. Recharge in other parts of the  
20 Pinal AMA, such as along the Gila River, or near the Casa Grande and Coolidge municipal  
21 wastewater treatment plants, should such facilities ever be built as suggested by AWC,  
22 would not be available for use in the Maricopa-Stanfield sub-basin.

23  
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27 <sup>7</sup> See my direct testimony at page 7, lines 14-17.

<sup>8</sup> See my direct testimony at page 18, and Exhibit 31.

1 IV. COMMENTS ON AWC'S DEPENDENCE ON AN APPROVED PHYSICAL  
2 AVAILABILITY DEMONSTRATION.

3  
4 Q. Mr. Garfield refers to an approved Physical Availability Demonstration ("PAD") as  
5 evidence of groundwater supplies for development in their PVWS. What is a PAD  
6 and can that be used in evaluating the water resources available in the expansion  
7 area?

8 A. Certainly. A PAD is defined in A.C.C. R12-15-716 as is the method of analysis to be used  
9 in preparing a demonstration of physical availability. Briefly, the applicant has to  
10 demonstrate that – in the Pinal AMA – the 100 year water level decline projected for the  
11 proposed development, when added to the existing or expected rates of decline will not  
12 exceed a depth to water of 1,100 feet or the bottom of the aquifer, whichever comes first.

13  
14 It is not a measure of a renewable resource, nor an evaluation of sustainability, but more  
15 akin to a hunting license for groundwater. In other words, a PAD is merely a confirmation  
16 that the applicants planned depletion of the groundwater resource has been demonstrated to  
17 lie within the parameters ADWR has set by the rule – depletion to less than 1,100 foot  
18 depth to water in 100 years. No planning is involved – where and when and what  
19 development should proceed is lost in the first come, first served regulatory approach. My  
20 intent is not to criticize ADWR or its current staff; this is just how the program has  
21 evolved, and as noted previously, I was the one that set the parameters for the predecessor  
22 to this program over 30 years ago. It is not 'blame' to say that the system I helped develop  
23 did not envision the scenarios Arizona now faces, and faces directly in this very case. The  
24 ACC should not rely on a system never intended to address this set of events.

25  
26 The AWC submitted the required hydrologic study to ADWR for a PAD. The ADWR, in  
27 a letter to AWC dated April 24, 2002 advised of approval of the PAD in the amounts of

1 57,507 a-f/year, 13,510 a-f/year, and 4,786 for the Casa Grande, Coolidge, and Tierra  
2 Grande service areas, respectively. The letter states “These quantities represent the amount  
3 of groundwater available for new demands *within the service areas of each system...*  
4 (*emphasis added*)”. Notably, the sum of these amounts, 75,803 a-f/year, nearly exceeds  
5 the ADWR’s identified renewable groundwater supply of 82,500 a-f/year for the entire  
6 Pinal AMA – without considering the 2005 municipal demand of 14, 618 a-f /year within  
7 the existing AWC service areas.<sup>9</sup> I also note that this approval does not include potential  
8 demands in AWC’s 70,000-acre requested expansion area.

9  
10 Were the planned depletion under the existing PAD not enough, Mr. Garfield states that  
11 the AWC wants even more of the pie – he states that the AWC plans to file an updated  
12 PAD (page 20, line 8) “ ... the initial results of which show considerably more  
13 groundwater available than the previous demonstration.” In other words, AWC was  
14 mistaken in its original request for overdraft, and now AWC wants to overdraft even more  
15 and create more damage.

16  
17 Clearly, a PAD is not the best a measure of a renewable resource, nor is it an accurate  
18 evaluation of sustainability. Further, a PAD is merely a finding of compliance by ADWR  
19 with one of a myriad of regulations. It is only a finding by ADWR to the instant issue and  
20 is severely conditioned by the prominently displayed out clause, (*i.e.*, “If the Department  
21 finds that the groundwater supply is not available because the assumptions and information  
22 used in determining the physical availability under the current criteria prove incorrect, the  
23 Department will modify the availability of groundwater accordingly. ...”) And ADWR can  
24 change its mind if, for example, the Pinal AMA groundwater monitoring program finds  
25 that the rates of water level decline projected in 2002 have been exceeded at any future  
26 date.

27  

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<sup>9</sup> See Exhibit WMG-2 Table 2.5 at page 16.

1 **V. LAND SUBSIDENCE.**

2  
3 **Q. Your direct testimony includes considerable discussion of land subsidence in the Pinal**  
4 **AMA. Could you highlight key conclusions from that testimony?**

5 A. Certainly. The term "land subsidence" refers to the vertical downward movement of the  
6 earth's surface. Land subsidence occurs where extensive groundwater withdrawal has  
7 significantly lowered water tables, several hundred feet in the case of the Pinal AMA.<sup>10</sup>  
8 Lowering of the water table causes dewatered aquifer materials to compact, resulting in  
9 overall subsidence. This has both surface and subsurface effects. Surface effects include  
10 fissuring, damage to roads, buildings and infrastructure, and changes to stream flows.  
11 Subsurface effects include a reduction in the aquifer's ability to recharge and to retain  
12 groundwater.

13  
14 Earth fissuring follows in areas where land subsidence occurs. Earth fissures tend to occur  
15 generally on the periphery of the alluvial basins, where buried ridges and fault scarps along  
16 mountain fronts act as a hinge point for the subsiding basin sediments. Where there is earth  
17 fissuring, large linear cracks break the land surface. At first, this fissuring may be no more  
18 than an inch or two wide, but then the fissures gradually increase to tens of feet in width  
19 and significantly altering surface flow patterns as erosion proceeds.

20  
21 **Q. What land subsidence has occurred within the Pinal AMA?**

22 A. As shown in Exhibit 34 to my direct testimony, significant subsidence has occurred in the  
23 Pinal AMA. In a series of baseline elevation surveys conducted by the U.S. Geological  
24 Survey and other agencies, documented subsidence of up to 11 feet has occurred near  
25 Picacho, with even greater subsidence observed elsewhere (up to 17 feet near Eloy). The  
26 distribution of known earth fissures in and around the Pinal AMA is shown in Exhibit 35  
27

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<sup>10</sup> See Exhibit 33 to my direct testimony.

1 to my direct testimony. Fissuring has also been observed along the Estrella, Sacaton,  
2 Santan, Picacho, and Tabletop Mountains.

3  
4 **Q. Why is land subsidence a concern in the Pinal AMA?**

5 A. The Pinal AMA has been, and will be severely overdrafted by agricultural pumpage. As a  
6 result of the end of renewable supply alternatives and the continuation of agricultural uses,  
7 water level declines can be expected to resume. Given that future declines will be similar  
8 to historic declines, land subsidence can be expected to continue at historic levels.

9  
10 Substantial impacts of this subsidence can be expected, especially alterations to regional  
11 streamflow patterns and flows in sewer collection systems. In addition, impacts can be  
12 expected in infrastructure installed in and upon the land surface as surface elevations  
13 decrease and earth fissures rupture portions of the infrastructure. Importantly, as incidental  
14 recharge from non-Indian agricultural activity using CAP water disappears, the increase in  
15 groundwater mining will simultaneously increase aquifer compaction from subsidence.  
16 This further limits the area's ability to recharge.

17  
18 **VI. COMPARING IMPACTS OF AWC'S PROPOSAL TO THAT OF GLOBAL AND**  
19 **SANTA CRUZ WATER COMPANY.**

20  
21 **Q. Your direct testimony provided a comparison of potential water use scenarios for**  
22 **Global and AWC proposals in the expansion area. Have you made any comparisons**  
23 **using actual Global and AWC water use numbers?**

24 A. Yes, I have. I have attached Exhibit 41, which is a revised version of Exhibit 40 using  
25 actual Global and AWC water use numbers. I also provide an additional scenario in this  
26 exhibit using potential demands for Global.

27

1 The AWC projected demands for their PVWS are based on their recent experience in the  
2 Pinal AMA and are shown in Table 2.5 of Exhibit WMG 2. The Table lists an estimated  
3 21,483 residential dwelling units ("DU") in 2005, and a calculated total water requirement  
4 at 14,618 a-f /yr.. Doing the conversions gives 18,466 gallons per DU per month, which  
5 equates to an annual amount of 0.68 a-f per DU. (In the first scenarios in Exhibit 40, I  
6 used 0.4 a-f per DU per year for each company based on water demand estimates used by  
7 ADWR in its analyses.)

8  
9 Global's staff has a similar estimate for projected demands based on their experience in the  
10 Pinal AMA. As Mr. Symmonds testified, their demand estimate is 5700 gal per DU per  
11 month, which is an annual amount of 0.2 a-f per DU

12  
13 The new scenarios shown in Exhibit 41, use projected demands developed by the  
14 respective parties. Exhibit 41 shows that if the Commission grants AWC the CC&N its  
15 requests, the use of groundwater in the area will potentially increase by over 135,300 a-  
16 f/year above and beyond current uses. This is especially significant given that the total  
17 renewable groundwater supply for the entire AMA is only 82,500 a-f per year. In contrast,  
18 granting the CCN to Global will have little impact on groundwater compared to existing  
19 uses. If Global achieves their projected demand of 0.2 a-f per DU per year (that requires  
20 meeting 50% of demand with reclaimed water), granting the area to Global will actually  
21 reduce groundwater demand as the area is urbanized.

22  
23 **Q. Given this significant difference in future demands did you look at what the potential**  
24 **differences would be in groundwater impacts?**

25 **A.** Yes, but only by borrowing some preliminary figures from an ongoing project being  
26 conducted for Global. These figures do show the projected depths to groundwater in the  
27 Maricopa-Stanfield Sub-Basin of the Pinal AMA for Global's proposed expansion of their

1 CC&N for two assumed water demand rates. Because AWC is apparently planning to  
2 provide an updated PAD not available until at least April of 2007, I cannot compare these  
3 figures to similar projections for the AWC proposal. Instead, I offer the following  
4 comparison to compare the impacts of implementing reclaimed water and reuse to a  
5 conventional water/wastewater system.

6  
7 The projected depths to groundwater resulting after a 100 year period as a result of  
8 withdrawals for all current and committed groundwater demands in the area with the  
9 addition of service by Global in the expansion area are shown in Exhibits 43 and 44.

10  
11 The scenario used for the runs shown in Exhibit 43 assumes that Global is able to meet  
12 their target of recovering 50% of residential demands and making the reclaimed water  
13 available to meet other community demands. This results in the net demand for  
14 groundwater of 0.2 a-f/DU as I used in Exhibit 41.

15  
16 The modeling staff working on this project advises that there were 69,414 DUs projected  
17 for the area, and that the demands were modeled assuming that irrigated lands in the  
18 developed areas were urbanized in year 1, with agricultural demands replaced by  
19 residential demands (the locations of wells used to meet these demands are shown on the  
20 exhibits).

21  
22 Current and committed demands include current municipal and agricultural pumpage and  
23 the associated incidental return flows. Of interest in this case, committed demands  
24 included those for the approved AWC PAD. Agricultural pumpage tracked historic uses  
25 and projected remaining lands, as the Pinal AMA urbanized, with CAP water assumed to  
26 be available until 2030, and groundwater used to meet demands for the rest of the 100 year  
27

1 projection period. A 20 year lag in the interim from infiltration of excess irrigation  
2 applications till recharge of that water was used in these runs

3  
4 The scenario used for the runs shown in Exhibit 44 assumes Global operated a  
5 conventional water/wastewater system for it's requested expansion area more akin to what  
6 AWC is proposing. This tracks a conventional water/waste water system such as proposed  
7 by AWC with all demands met by groundwater. For this run it was assumed that the net  
8 demand for groundwater was 0.5 a-f/DU, which is still less than the AWC projected  
9 demand for the area which is an annual amount of 0.68 a-f/DU.

10  
11 The remainder of the assumptions and demands for Exhibit 44 are the same as for the run  
12 shown in Exhibit 43.

13  
14 Projected depths to water after 100 years exceed 700 feet in much of the sub-basin with  
15 reclamation and reuse of waste water, as shown in Exhibit 43. The impacts are greater  
16 without reuse as one would expect, and projected depths to water after 100 years exceed  
17 800 feet in much of the sub-basin, as shown in Exhibit 44. These differences are shown  
18 directly in Exhibit 45, and exceed 100 feet in much of the sub-basin.

19 Considering that the AWC proposal includes a larger area, with more development, and a  
20 higher water use per DU, the projected depths to groundwater would be even greater than  
21 shown in Exhibit 44 for their proposal. In other words, AWC's proposal will have a much  
22 greater impact on the groundwater resources than Global's proposal.

23  
24 **Q. Would you provide a brief summary of your testimony and the key considerations for**  
25 **the Commission?**

26 **A.** Yes. And I will also recap some of my direct testimony.  
27

- 1 • There can be no doubt that the Pinal AMA has been severely overdrafted. Water level  
2 declines have been as much as 400 feet in portions of the sub-basins within the Pinal  
3 AMA. Although CAP usage has reduced groundwater pumping, this will end by 2030.  
4 Higher priority municipal and industrial uses for CAP will likely lead to future increases in  
5 groundwater pumping for non-Indian agricultural uses. As a result, water level declines  
6 will resume to historic rates, leading to land subsidence and other adverse effects within  
7 the Pinal AMA.
- 8 • AWC's proposal is to provide water supplies for its requested service area through using  
9 groundwater as needed to meet expected demand. AWC does not indicate any plans to  
10 reuse or recharge treated in the expansion area.
- 11 • The Pinal AMA recommends use of renewable supplies and the replenishment of the  
12 aquifer in critical areas to address problems that may develop in the future, including lack  
13 of physical availability of groundwater, excessive water level decline rates, land  
14 subsidence and earth fissuring, such as what can be expected in the Maricopa-Stanfield  
15 sub-basin under future water uses.
- 16 • AWC's proposed approach is not in conformance with the current efforts and management  
17 approach of the Pinal AMA.
- 18 • AWC's proposed approach does not provide for sustainable management of groundwater  
19 resources.
- 20 • Santa Cruz intends to employ Global's business model in serving the area. This means  
21 using groundwater from wells for potable supplies, but also the collection and treatment of  
22 effluent to supply turf and other common area water uses. This could reduce demand for  
23 groundwater in the developments Santa Cruz and Global would serve by 30% to 50%.
- 24 • Santa Cruz and Global intend to provide renewable supplies to meet the needs of  
25 developments and future industrial uses in Santa Cruz's service territory. They have  
26 demonstrated this by their history of reclamation and reuse with the reduced groundwater  
27 demands they have already achieved, and through their current construction of plants and

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infrastructure to treat and deliver CAP water to their service area. (This is described in Mr. Symmonds testimony). Santa Cruz and Global's proposal is less risky, in that it does not create a long-term management problem for a large area. Santa Cruz and Palo Verde's proposal focuses on near-term development needs, by including only areas where service has been requested. If they achieve even a 30% rate of reuse, the potential increase in demands for mined groundwater (beyond what already exists for local agriculture) are small and could be met, by even higher rates of reuse.

- The Santa Cruz and Global proposal uses a water management approach that is in conformance with the current efforts and management of the Pinal AMA. Better yet, it provides the potential to realize sustainable management of our groundwater resources.

**Q. Does that conclude your rebuttal testimony?**

**A. Yes.**

**EXHIBIT 41**  
**Estimate of Future Water Use for CC&N Expansion Areas**

Entity	Acreage of Requested CC&N Expansion Contested Area (acres)	Total Buildout Water Demand (acre-feet) <sup>1</sup>	Portion of Total Demand Met by Direct Use of Effluent	Total Buildout Water Demand Potentially Supplied by Groundwater (acre-feet)	Current Irrigated Acreage within CC&N Expansion Area	Irrigation Withdrawals (2.8 a-f/acre)	Incidental Recharge (30%)	Irrigation Consumptive Use	Change in water Demand with Urbanization
Arizona Water Company <sup>2</sup>	73,000	173,740	0.0	173,740	19,578	54,818	16,446	38,373	-135,367
Global Water Company <sup>3</sup>	17,600	30,800	0.0	30,800	8,079	22,621	6,786	15,835	-14,965
Global Water Company <sup>4</sup>	17,600	24,640	0.5	12,320	8,079	22,621	6,786	15,835	3,515

<sup>1</sup> All are based on 3.5 DU/ac

<sup>2</sup> Based on 0.68 a-f/DU (Table 2.5 of Exhibit WMG 2)

<sup>3</sup> Based on 0.50 a-f/DU

<sup>4</sup> Based on 0.40 a-f/DU

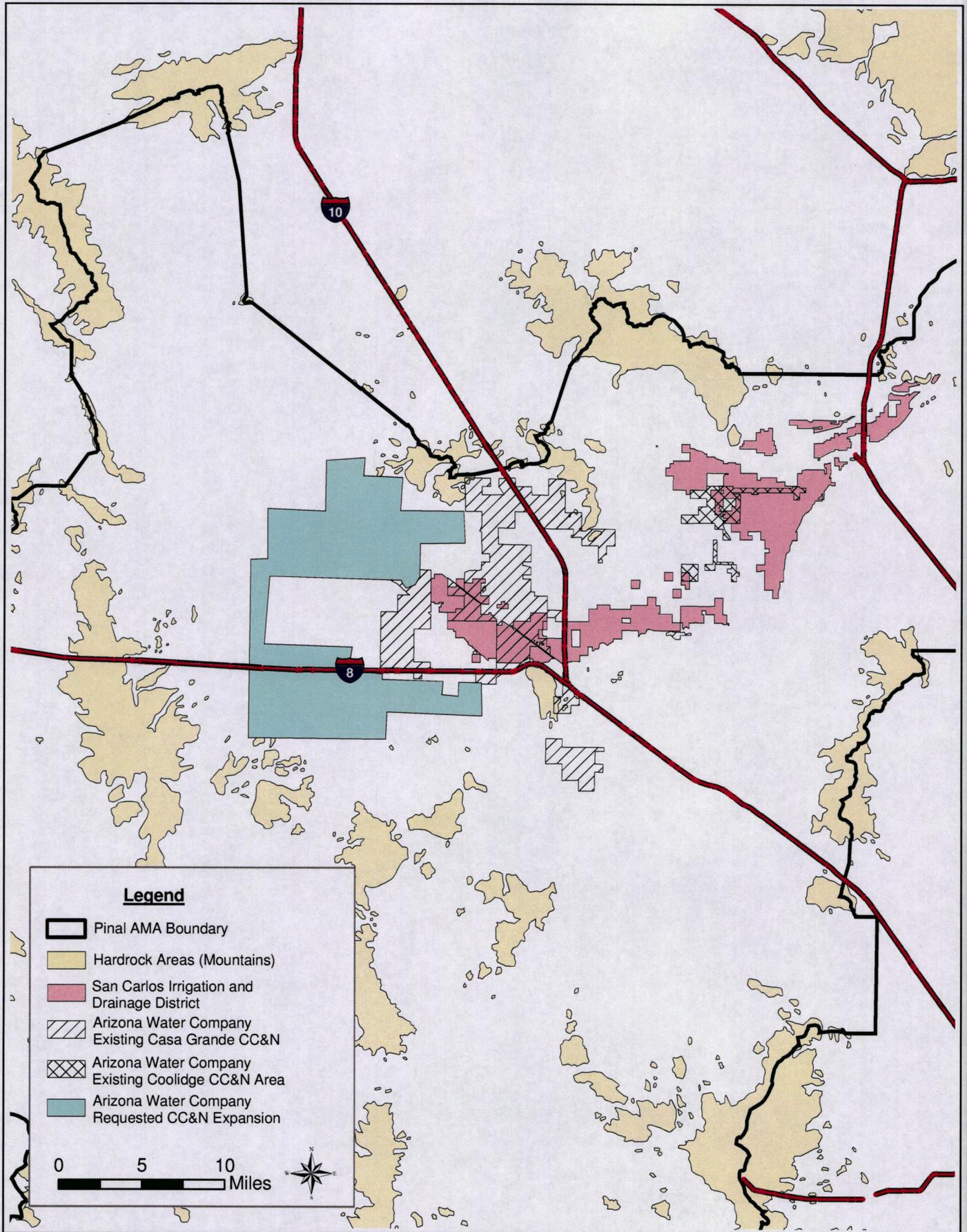
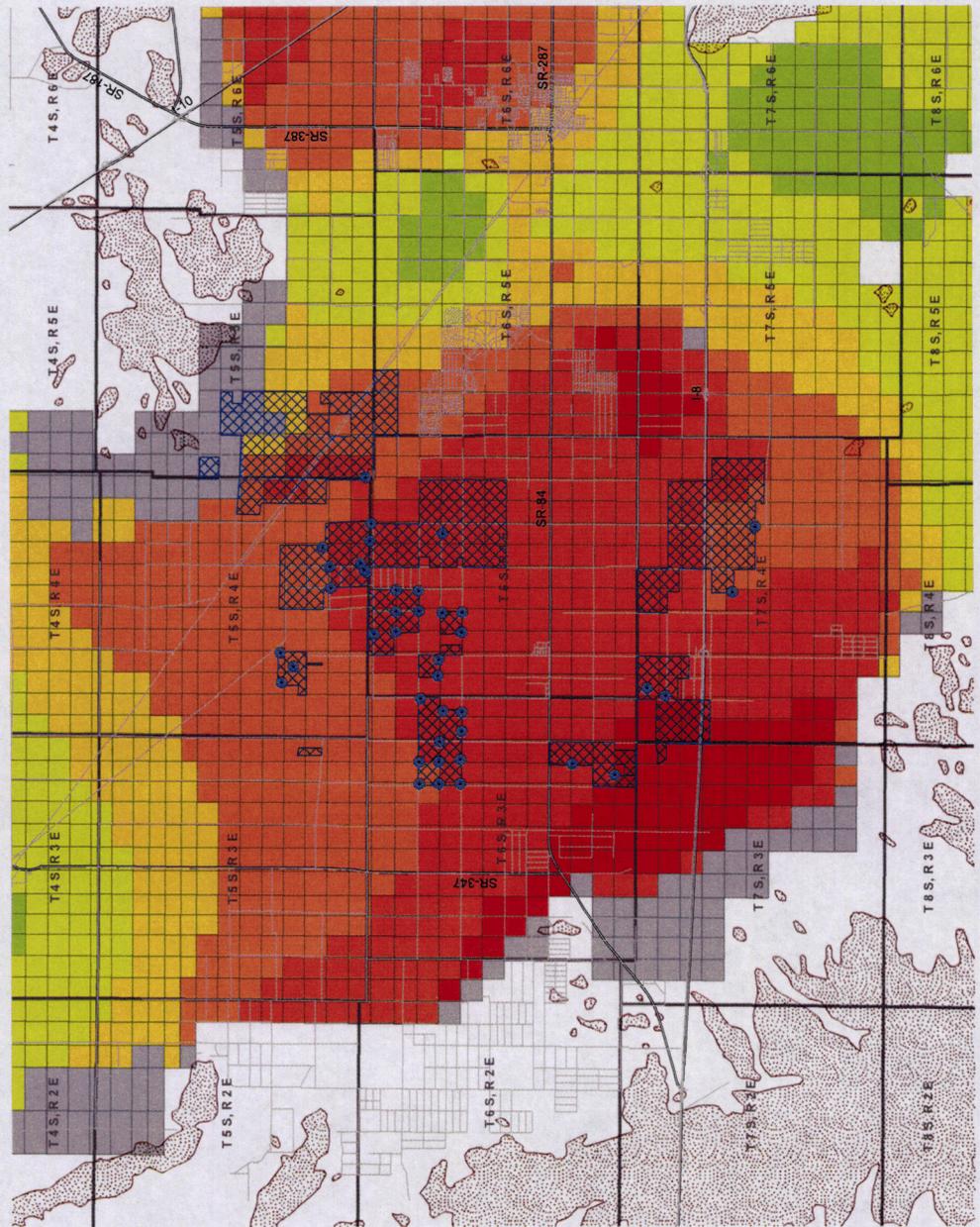


Figure X. Location of SCIDD and Arizona Water Company CC&Ns

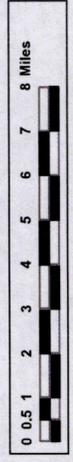


**EXPLANATION**

- Simulated Well Locations
- Hardrock Outcrops
- SE Service Area

**Scenario A Model Results**  
100-year Depth to Water (feet)

0 - 100
101 - 200
201 - 300
301 - 400
401 - 500
501 - 600
601 - 700
701 - 800
801 - 900
901 - 923
Dry Cells



Base Model: Clear Creek Associates (October 2006)  
Base Map: ADWR GIS Data, ATIS GIS Data

### SOUTHEAST CC&N MODEL SCENARIO A: 0.2 AF/DU/YR

Santa Cruz Water Company, Pinal County, Arizona

**Southwest Ground-water  
Consultants, Inc.**

Figure  
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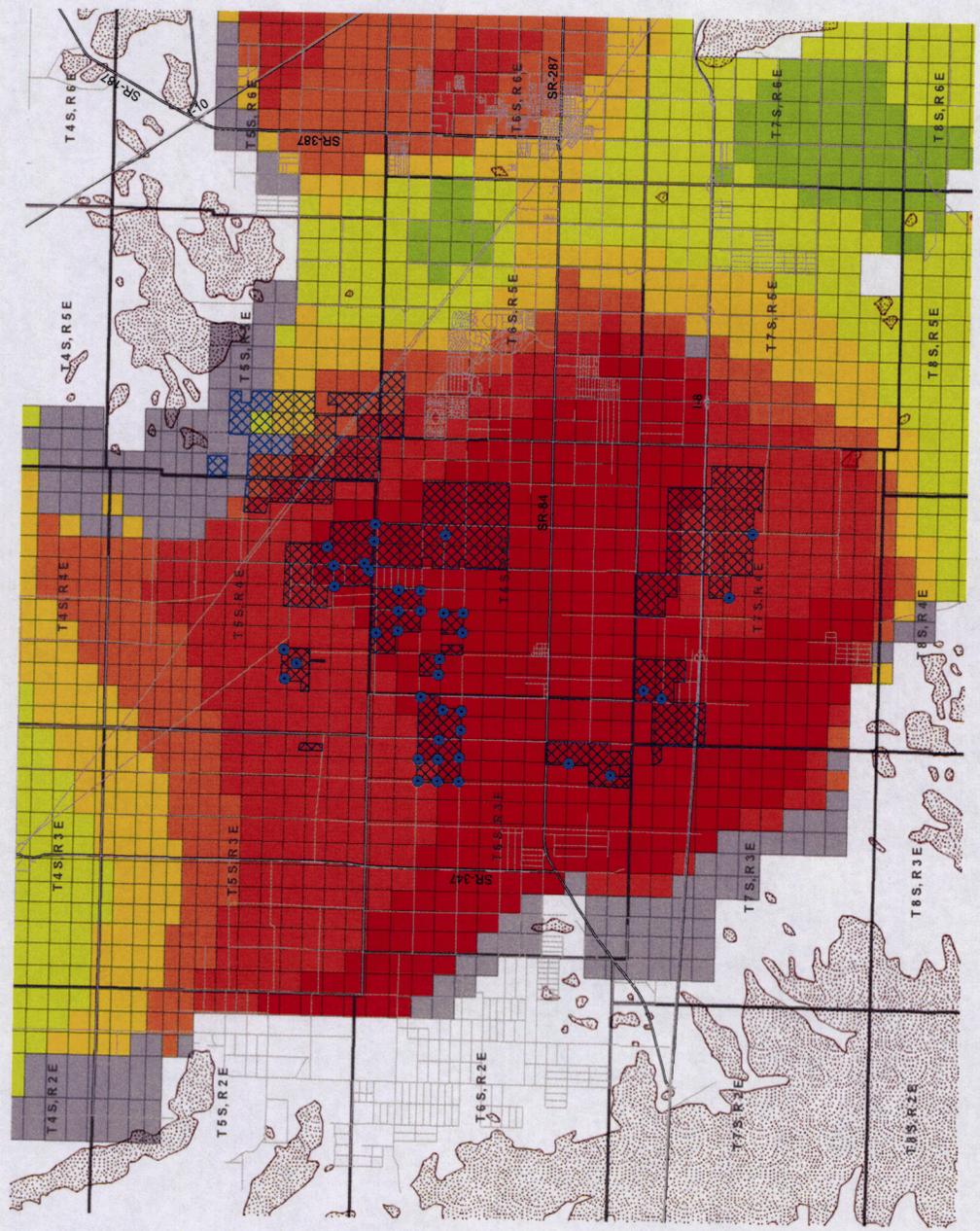
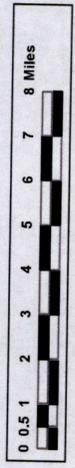
January 25, 2007      Project B.1287

**EXPLANATION**

- Simulated Well Locations
- ▨ Hardrock Outcrops
- ▤ SE Service Area

**Scenario B Model Results**  
**100-year Depth to Water (feet)**

0 - 100
101 - 200
201 - 300
301 - 400
401 - 500
501 - 600
601 - 700
701 - 800
801 - 900
901 - 1032
Dry Cells



Base Model: Clear Creek Associates (October 2006)  
 Base Map: ADWR GIS Data, ATIS GIS Data

**SOUTHEAST CC&N MODEL**  
**SCENARIO B: 0.5 AF/DU/YR**

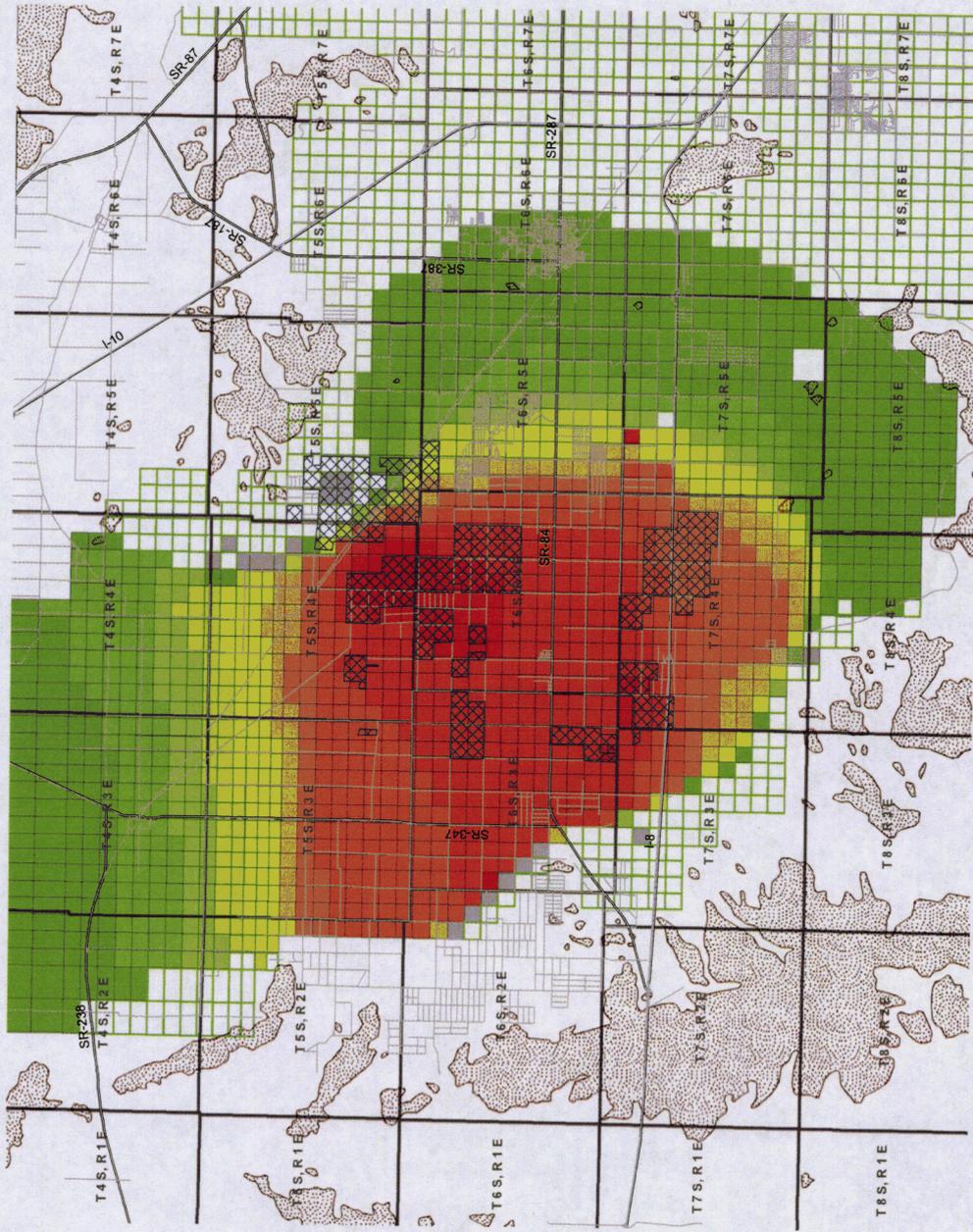
Santa Cruz Water Company, Pinal County, Arizona

**Southwest Ground-water Consultants, Inc.**

Figure  
 1

January 25, 2007

Project B.1287



**EXPLANATION**

Hardrock Outcrops  
 SE Service Area

**Scenario A minus Scenario B**  
**100-Year Layer 3 Head Difference (feet)**

-32 - -20
-19 - -10
-9 - -1
0 - 1
2 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 - 60
61 - 70
71 - 80
81 - 90
91 - 100
101 - 110
111 - 120
121 - 130
131 - 146
Dry Cells



Base Model: Clear Creek Associates (October 2006)  
 Base Map: ADWR GIS Data, ATIS GIS Data

**SOUTHEAST CC&N MODEL**  
**SCENARIO A & B 100-YEAR HEAD**  
**DIFFERENCE MAP**

Santa Cruz Water Company, Pinal County, Arizona

**Southwest Ground-water Consultants, Inc.**

February 12, 2007      Project B.1287

Figure 1

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**

JEFF HATCH-MILLER- CHAIRMAN  
WILLIAM A. MUNDELL  
MIKE GLEASON  
KRISTIN K. MAYES  
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. W-01445A-06-0199  
ARIZONA WATER COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY. )  
IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. SW-03575A-05-0926  
PALO VERDE UTILITIES COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY )  
IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. W-03576A-05-0926  
SANTA CRUZ WATER COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY )

Rebuttal Testimony of

Graham Symmonds

on Behalf of

Palo Verde Utilities Company and  
Santa Cruz Water Company

February 14, 2007

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**I. INTRODUCTION.**

**Q. Please state your name and business address.**

A. My name is Graham Symmonds. My business address is 21410 North 19<sup>th</sup> Avenue, Suite 201, Phoenix, Arizona 85027.

**Q. Did you file Direct Testimony in this case?**

A. Yes. I am the same Graham Symmonds who filed direct testimony in this case.

**Q. What is the purpose of your rebuttal testimony?**

A. My rebuttal testimony will address the following:

- I highlight how the average Arizona Water Company (“AWC”) customer will use substantially more water than the average Santa Cruz Water Company (“Santa Cruz”) customer.
- I critique AWC’s lack of planning to use reclaimed water and to recharge, and I comment on its plans to use surface water, including Central Arizona Project (“CAP”) water.
- I discuss how Palo Verde, as a wastewater utility, will achieve economies of scale.
- I describe how regional planning is leading to an interconnected grid for Santa Cruz and Palo Verde, thus rebutting AWC’s unfounded assertion that Santa Cruz growth is a “patchwork” pattern.
- I explain how Global Water uses advanced technology to better serve our customers.

1 **II. COMPARING AWC AND SANTA CRUZ GROUNDWATER CONSUMPTION.**

2  
3 **Q. Based on the information available, is it fair to say AWC will use substantially more**  
4 **groundwater than Santa Cruz to serve residential customers?**

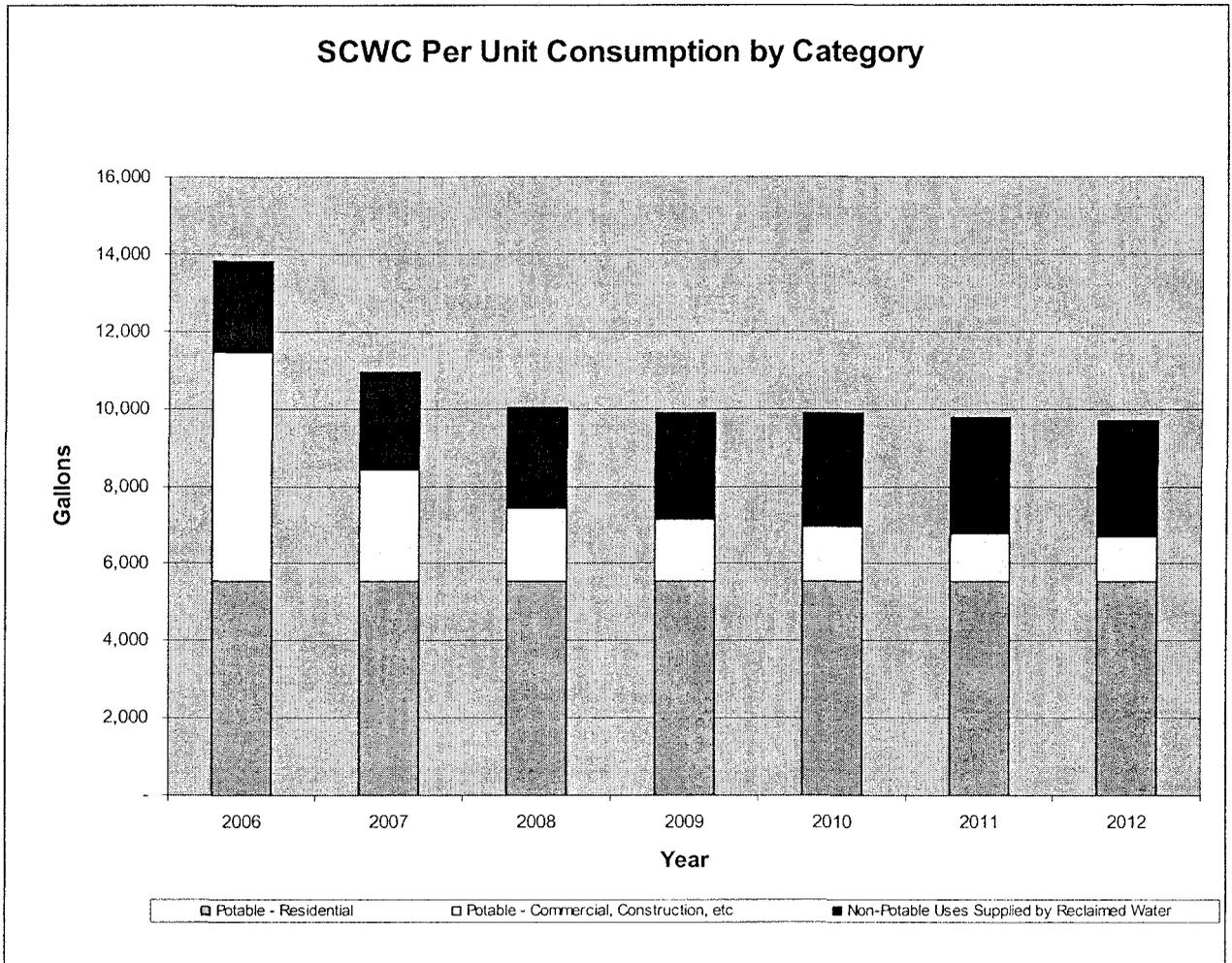
5 A. Most definitely. Mr. Kennedy states in his direct testimony that the average consumption  
6 level for residential customers is 10,700 gallons. For Santa Cruz customers, the average  
7 consumption level is only 5,500 gallons. In other words, the average consumption for a  
8 Santa Cruz customer is *only 51.4% what* the average consumption for AWC per customer  
9 is.

10  
11 **Q. What about total groundwater use?**

12 A. Again, AWC uses more. Looking at AWC's most recent water use data sheet from its  
13 2005 Annual Report, for its Casa Grande Division, the overall average consumption equals  
14 about 17,509 gallons per month per customer. In comparison, in 2005 the comparable  
15 number for Santa Cruz is only 12,286. And that's before some of our newer, most efficient  
16 areas came on-line. So again, we use much less. In 2006, Santa Cruz averaged 11,493  
17 gallons per month per dwelling unit (GPM/DU) – and that includes apportioning HOA and  
18 construction water usage to the households. When those are factored out, the actual water  
19 consumption in the Santa Cruz service area is in the order of 5500 GPM/DU. This lower  
20 per DU consumption is a direct result of the ability to employ reclaimed water in lieu of  
21 groundwater. In 2006, the integrated utility model saved 329,432,000 gallons of water  
22 through water reclamation and re-use – that's a staggering 1,011 acre-feet of water. That's  
23 enough water to produce potable water for 3,888 homes. Without reclaimed water  
24 available, that volume would have had to be drawn from the aquifer. Alternatively, one  
25 could consider that Global has retired the 100-year demand obligation of 39 homes from  
26 its system in one year of operation.

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**Q. What are the implications of this phenomenon?**

A. As shown above, the impact of reclaimed water on the overall demand is dramatic. In this case, I am showing only the impact of employing reclaimed water as golf course, boulevard, HOA and other common area irrigation – this is the “low-hanging” fruit associated with reclaimed water. As you can see, there is a finite amount of groundwater that needs to be supplied for residential use, but as we go further the ability of reclaimed water to supplant traditional groundwater usage increases.

1 This graph also shows a unique perspective on the timeliness of reclaimed water  
2 infrastructure deployment. This graph is based on Santa Cruz's service area – in the very  
3 early developments, before Global purchased Santa Cruz, reclaimed water was not  
4 contemplated as a source. So, the common area irrigation is fed by potable water.  
5 Because that infrastructure is already built, there is no ability to use reclaimed water in  
6 those areas. Consequently, one cannot get water from a non-reclaimed turnip. There will  
7 always be a hard-bottom capability for use of reclaimed water at this development. While  
8 the percentage reduces with time, the fact remains that a decision made in 1997 results in  
9 the continuous withdrawal of groundwater for non-potable use.

10  
11 **III. RESPONSE TO AWC'S TESTIMONY**

12  
13 **Q. Have you reviewed Arizona Water Company's ("AWC's") direct testimony filed in  
14 this case?**

15 A. Yes. I have reviewed AWC's testimony and the exhibits attached to the testimonies. I  
16 specifically focused on AWC's Master Plan and Design Report – attached as Exhibits  
17 MJW-1 and MJW-2 to Mr. Whitehead's direct testimony. I also focused on AWC's CAP  
18 Water Use Plan attached as Exhibit WMG-2 to Mr. William Garfield's Direct Testimony.

19  
20 **Q. Do you have any comments regarding AWC's testimony?**

21 A. Yes. Generally-speaking, AWC has no plans in either its Master Plan or Design Report  
22 about using reclaimed water. Indeed, the testimony focuses almost exclusively on the  
23 provision of potable water and the requirements for treatment. To be honest, water  
24 treatment is a science – that means that given the resources a technical solution will exist to  
25 treat the water. That is true for TDS, arsenic, fluoride, nitrate or any constituent. Cost of  
26 treatment and infrastructure will always be a factor, but there is always a treatment  
27 solution. The real issue here is water availability and scarcity. The only time science and

1 engineering cannot come up with a water treatment and distribution solution is when there  
2 is no water to treat. This is why Global focuses on integration, renewable supplies,  
3 reclamation, re-use and recharge. It is only through those activities that enough water will  
4 be available for us to argue over whether a design report is sufficient to deliver water.

5  
6 There is no recognition of the scarcity of the resource we are discussing. Nothing in these  
7 documents indicates that AWC has any specific plans to recharge. In addition, while  
8 AWC indicates that there is some plan to use surface water, AWC's efforts pale in  
9 comparison to what is being undertaken by Santa Cruz and Global. While AWC may now  
10 trumpet Global's "Triad of Conservation", AWC's actual implementation of the Triad is  
11 close to non-existent.

12  
13 **Q. Did you find *any* details about reusing reclaimed water in AWC's testimony?**

14 **A.** No, I did not. As I stated above, neither Exhibit MJW-1 – AWC's Master Plan – nor  
15 Exhibit MJW-2 – AWC's Design Report – speaks to reclaimed water. In addition, we  
16 asked for AWC's plans in a data request, but they did not provide use with any plans.<sup>1</sup> I  
17 can only surmise that they have no plans to construct facilities to reuse water. By contrast,  
18 I detailed in my direct testimony how Santa Cruz and Palo Verde will implement this  
19 element of the Triad. Specifically, I discussed our existing "Campus 1" water reclamation  
20 facility in Palo Verde's existing certificated area, and how the South East Service Area will  
21 interconnect with this facility. As growth occurs in this area, we will introduce additional  
22 water reclamation facilities. We already are planning for a water reclamation facility at the  
23 Campus #3 location for the South East Service Area.

24  
25  
26  
27  

---

<sup>1</sup> AWC Response to Global 1.17.

1 **Q. Did AWC have any plans to recharge?**

2 A. While AWC's president, Mr. Garfield, said that it is "prudent to plan for the recharge of  
3 reclaimed water,"<sup>2</sup> the actual plans submitted by AWC do not include recharge facilities.  
4 Further, Garfield admits that AWC "does not currently own or operate any direct recharge  
5 projects."<sup>3</sup> And they did not give us any plans when we asked for them.<sup>4</sup> By contrast,  
6 Global is taking steps to evaluate the South East Service Area for recharge wells, as well as  
7 our expectations about where recharge will be located and what kinds of wells are  
8 contemplated. We have experience with recharge, and are actively recharging in western  
9 Maricopa County. AWC has no experience and does not appear to have any plans to  
10 recharge.

11  
12 **Q. Finally, with regards to surface water, how do AWC's engineering plans compare  
13 with Global's?**

14 A. As I discussed in my direct testimony, it appears that AWC is now planning for a CAP  
15 water treatment plant near its Casa Grande and Coolidge systems. This plant will be built  
16 with an initial capacity of 10 million gallons per day ("MGD"), and will not be operational  
17 until 2012. AWC's direct testimony in this case confirms that this is the entirety of AWC's  
18 plans to deploy surface water in its proposed extension areas. Given the rapid growth  
19 within AWC's current CC&N areas for Casa Grande and Coolidge, the demand from  
20 AWC's existing areas will far outstrip the capacity of this plant. It is thus unlikely that  
21 their new plant will provide much benefit to the extension areas in this case. In short,  
22 AWC will not deploy surface water for five years, and even then, it will be of little benefit  
23 to the contested areas in this case.

24  
25  
26  
27 <sup>2</sup> Garfield Direct, p. 18, lines 9-10.

<sup>3</sup> Garfield Direct, p. 15, lines 15-16; see also AWC Response to Global 1.23, 1.24, and 1.25.

<sup>4</sup> AWC Response to Global 1.23.

1 In my direct testimony, I discussed our new surface water treatment facilities and how they  
2 will be interconnected throughout Santa Cruz's service territory. Our first surface water  
3 facility is the former 387 Wastewater Improvement District Water Reclamation Facility  
4 which will be converted to a surface water treatment facility by the first quarter of 2008.  
5

6 **Q. Do you have any other comments about AWC's engineering documents submitted in**  
7 **its direct testimony?**

8 A. AWC estimates that it expects 8,600 customers will be added to its Casa Grande system  
9 every decade from 2005 through 2055.<sup>5</sup> These estimates seem quite low. In AWC's  
10 proposed extension area, at build-out there may be around a quarter million customers.<sup>6</sup>  
11 AWC's low estimates appear to be based on historical figures.<sup>7</sup> However, since Arizona  
12 recently became the fastest-growing state, and since much of that growth will occur in  
13 Pinal County, AWC's estimates may be far too low.<sup>8</sup> Thus, AWC's projected costs may  
14 be too low as well.  
15

16 Under any set of estimates, though, there will be a large number of customers in AWC's  
17 vast extension area. This only highlights the need for conservation measures. Ms. Maguire  
18 and Mr. Biggs provide ample evidence about the limitations of groundwater availability in  
19 the Pinal AMA, the shortcomings of AWC's reliance on PADs and the CAGR, and/or  
20 the need to start maximizing the use of reclaimed water. But Mr. Whitehead says next to  
21 nothing about actually planning for reclaimed water and AWC appears to depend almost  
22 entirely on drilling 29 new groundwater wells to serve future customers. Mr. Whitehead  
23 only talks in limited terms about the one surface water treatment plant to use CAP water.  
24 Even so, compared to the projected customer base, the amount of surface water treatment  
25

---

26 <sup>5</sup> See Whitehead Direct, Exhibit MJW-2, projected customer summaries for each decade.

27 <sup>6</sup> 70,494 acres times 4 customers / acre = 281,976 potential customers.

<sup>7</sup> See Whitehead Direct, Exhibit MJW-2, projected customer summaries for each decade, at footnote 3.

<sup>8</sup> See Rita Maguire's Direct Testimony for a discussion of the growth issues facing Arizona.

1 planned is not very significant. Integrated service and water conservation are principal  
2 reasons why landowners and developers want service from Global's regulated utilities –  
3 Santa Cruz and Palo Verde. AWC plans show that it is not planning to provide the variety  
4 of services needed to sustain the onslaught of growth we will face in coming years.

5  
6 We should also remember that surface water is not the panacea of development pressures  
7 in Arizona. Surface water is renewable but also subject to dwindling supply. As such it is  
8 absolutely imperative that utilities actively reduce demand of both surface and ground  
9 water – through the implementation and deployment of the only source of water that is  
10 increasing in the state – reclaimed water.

11  
12 **Q. Please comment on AWC's CAP Water Use Plan (Garfield Exhibit WMG-2).**

13 A. While the plan details the potential use of CAP water in the AWC various service areas, I  
14 find it interesting that the genesis of the plan is really a rate application that seeks to  
15 recover costs associated with maintaining the CAP allocation and establishing a CAP  
16 Hook Up Fee (Decision 68302). Conversely, Global and Santa Cruz are moving forward  
17 with deployment of CAP treatment facilities in the absence of an allocation – not for cost  
18 recovery purposes, but for scarcity issues.

19  
20 **IV. ECONOMIES OF SCALE.**

21  
22 **Q. Do you believe Palo Verde will achieve economies of scale for wastewater service?**

23 A. Yes I do. As I stated in my direct testimony, building water reclamation facilities requires a  
24 lot of up-front capital costs. But by planning and deploying these types of facilities on a  
25 regional basis, costs are shared with multiple developments for these facilities. Even more  
26 importantly, optimum treatment plant sizes and configurations can be deployed. This  
27 includes savings on design costs, equipment procurement, construction, spares, operations

1 training, power costs, operations, chemicals etc. In addition to water reclamation facilities,  
2 larger sewer transmission mains can be installed to incorporate all of the planned  
3 developments within an area. This avoids the need to duplicate or retrofit existing pipeline  
4 infrastructure – which I explained was the key way to substantially save costs over the  
5 long-term. We can also take advantage of gravity for these wastewater collection systems  
6 and minimize the need for lift stations in Palo Verde’s proposed extension area.  
7 Operational efficiencies will also be achieved through how Global plans for treating  
8 wastewater. So, I do not agree with any implication that somehow it is impossible to  
9 achieve economies of scale with wastewater facilities.

10  
11 Also, I do not agree with Mr. Garfield’s assertion that operations staff cannot provide  
12 economies of scale in an integrated utility and that staff are typically assigned singular  
13 roles in one organization or the other. At the lowest to the highest levels, there are  
14 economies to be won. Our operations staff can support both systems simultaneously from  
15 the perspective of: on-call services, bluestake services, maintenance services, inspection  
16 services, engineering services, project management services, compliance services,  
17 customer service activities, accounting services, management services. This list goes on.  
18 While it may be true that at a single point in time one operator may be tasked directly to  
19 one specific utility, this limited view of what utility operations is belies the significant  
20 opportunities for economies and efficiencies to be realized from integrated utility  
21 management.

1 V. SANTA CRUZ, PALO VERDE, AND OUR CUSTOMERS BENEFIT FROM  
2 GLOBAL'S REGIONAL PLANNING.

3  
4 Q. Mr. Whitehead accuses Global and specifically, Santa Cruz, of having a “leap-frog’  
5 and resulting patchwork pattern of growth.”<sup>9</sup> Do you have any response to that?

6 A. We plan and deploy infrastructure on a regional basis. Regional planning has led to Global  
7 acquiring Francisco Grande Utility Company and CP Water Company. These systems will  
8 be integrated with Santa Cruz and Palo Verde. Far from being a “patchwork,” Global’s  
9 regulated utilities will be an interconnected grid of water, wastewater *and* reclaimed water.  
10 As development fills in, Global’s facilities will be in place to provide water, wastewater  
11 and reclaimed water services. AWC, on the other hand, will leave it to other entities to  
12 attempt to provide wastewater service. That service, however, will not be integrated and  
13 will not include reclaimed water – at least not as the Global integration provides. And the  
14 opportunities for conservation will be far less prevalent if AWC is awarded the proposed  
15 extension areas Santa Cruz and Palo Verde have applied for.

16  
17 It is true that our CC&N may look like a “patchwork” because we respect the wishes of  
18 landowners. But we still plan on a regional scale, design for inclusion of all land, deploy  
19 infrastructure so that all potential developments are included without the necessity to re-  
20 design or install additional main lines. And of course we interconnect our service areas.

21  
22 I find it interesting that AWC refers to our planned growth as patchwork, because it is  
23 AWC that has a multitude of systems that are not interconnected to one another. AWC’s  
24 Stanfield system is a classic example of a ‘stand-alone’ system. Further, AWC has  
25 discussed interconnecting its Casa Grande and Coolidge systems for years, and yet has not  
26 done so. Also, while Global respects landowner rights to choose who they want service  
27

---

<sup>9</sup> Whitehead Direct at page 4, lines 12-13.

1 from, AWC has chosen to ignore landowner rights for almost the entire 70,494 acres it  
2 requests in this case, simply for the sake of interconnecting its systems and being a “logical  
3 extension of growth.” The fact that AWC also foregoes providing wastewater service – and  
4 because only integrated water and wastewater providers can truly provide needed  
5 reclaimed water service – it is clear that AWC is the entity promoting a “patchwork”  
6 system of isolated wastewater systems while trying to force the hands of developers and  
7 landowners. The fact that Francisco Grande and CP are now part of the Global family  
8 makes it more apparent that Santa Cruz and Palo Verde will create a region-wide  
9 interconnected grid.

10  
11 **Q. Will granting a CC&N extension to Santa Cruz “cut-off” AWC’s Stanfield system, so  
12 that AWC will not be able to interconnect it to its Casa Grande system?**

13 A. Certainly not. For example, there are several routes to the south that they could use to  
14 interconnect. In addition, our new acquisition, Francisco Grande, is located directly in-  
15 between AWC’s Casa Grande and Stanfield system. We would be happy to see if we  
16 could reach some agreement to allow them to run mains through this area, provided they  
17 obtain the necessary franchises to maintain systems in the public right of way. We would,  
18 of course, expect AWC to grant similar rights to us.

19  
20 **Q. Do you have additional exhibits that show the interconnected nature of Global’s  
21 systems?**

22 A. Yes. Attached as Exhibit 10 is a Map showing the proposed wastewater facilities and  
23 mains for all of Palo Verde’s certificated and proposed extension areas. This map shows  
24 how Palo Verde’s North Service Area will be interconnected with the South East Service  
25 Area. Exhibit 11 shows the proposed water facilities and mains for Santa Cruz’s  
26 certificated and proposed extension areas. Like with Palo Verde, Santa Cruz’s North  
27 Service Area will interconnect with its South East Service Area. This map also shows the

1 surface water treatment facilities that will be constructed with Santa Cruz's service areas.  
2 Especially with the acquisition of Francisco Grande and CP, Global will have a highly  
3 reliable interconnected grid, thanks to the regional planning we have employed for our  
4 entire service territory.

5  
6 **Q. Do you have an additional exhibit that shows all of the planned facilities for Santa  
7 Cruz and Palo Verde?**

8 A. Yes. I have attached Exhibit 12 that shows water reclamation facilities, surface water  
9 treatment facilities, water distribution centers, production wells and other facilities in place  
10 or planned for Santa Cruz and Palo Verde. For facilities currently planned, Santa Cruz and  
11 Palo Verde will have the following capacity:

- 12 • Surface water facilities totaling 25 MGD capacity, 4.5 mg storage and 16,000 gpm  
13 pumping capacity.
- 14 • Water distribution centers totaling 6 MGal of storage and 18,500 gpm pumping  
15 capacity.
- 16 • Water reclamation facilities totaling 4 MGD capacity but permitted for 18 MGD.

17 As I stated in my direct testimony, more facilities are planned for the South East Service  
18 Area, including a water distribution center replicating its existing Rancho El Dorado  
19 facility and water reclamation facility at its Campus #3 location, as growth occurs in those  
20 areas. This information supplies much of what would be included in any design report for  
21 Santa Cruz. In short, Exhibits 12 through 14 show that Santa Cruz will not be a series of  
22 isolated fragments, but will be a fully-interconnected grid.

23  
24 **Q. Do you have a response to Mr. Whitehead's remarks about fire flow?**

25 A. Yes. Mr. Whitehead states that "small systems often lack the ability to provide water in  
26 sufficient quantities and rates of flow for fire protection."<sup>10</sup> That's true, as far as it goes.  
27

---

<sup>10</sup> Whitehead Direct at page 10, lines 25-27.

1 Indeed, it is yet another reason to support consolidation of small utilities. But combined  
2 with his comments about our “patchwork” system, I am concerned that someone may  
3 conclude we will lack sufficient fire flow. Nothing could be further from the truth. The  
4 Santa Cruz System is almost as large as AWC’s Casa Grande System.<sup>11</sup> As explained  
5 above, our system will not be a patchwork, but rather an integrated, interconnected,  
6 regional system. That system will meet or exceed all requirements for fire flow. And of  
7 course we are required to demonstrate fire flows routinely for developments and the fire  
8 department.

9  
10 **VI. USING TECHNOLOGY TO BETTER SERVE OUR CUSTOMERS.**

11  
12 **Q. Please describe some of the technology used by Global Water.**

13 A. We have a commitment to use advanced information technology to provide a high level of  
14 service to our customers. This is possible because through Global Water Management we  
15 are able develop technology programs for use in all of our regulated affiliates. Some  
16 examples include our remote meter reading program, our common SCADA system and our  
17 common GIS system.

18  
19 **Q. Please describe the remote meter reading system.**

20 A. The traditional way of reading meters was for a meter-reader to drive to each customer, get  
21 out of the truck, walk up to the meter and manually record the usage. More recently, some  
22 utilities have installed AMR or Automated Meter Reading systems, or “drive by” meters.  
23 Under this system, the meter reader still drives around. However, the meter reader does  
24 not stop. Instead, he or she has equipment that communicates electronically with the  
25 meter, and automatically records the data in a computer.

26 <sup>11</sup> Mr. Whitehead states in July 2006, AWC’s Casa Grande system had 18,006 connections.  
27 Extrapolated at their 8600 units per decade, one can reasonably expect that at 31 December 2006,  
the AWC Casa Grande system had 18,436 connections. At 31 December 2006, Santa Cruz had  
12,744 connections.

1 We are now installing the most advanced type of meter reading system – Itron’s Fixed  
2 Network system. Under this system, there is no need for a meter-reader to roam the  
3 streets. Instead, the meter wirelessly communicates with a tower, and the data is then  
4 transferred to our billing computer system. This eliminates the cost of the meter-reader,  
5 truck, gas, and so forth. Even better, we get data from the meter much more often. Instead  
6 of recording usage once a month, we are able to see usage in almost real time. This  
7 information is very useful. For example, if a customer has a water line break, but is not  
8 home, we can see the unusual spike in usage, and send service technician to the home.  
9 This limits the waste of water, and it also saves the customer further water charges and  
10 potentially limits the damage to their homes. We have assisted our customers in this way  
11 on several occasions.

12  
13 In addition, this data allows us to give the customer better information on their usage. For  
14 example, we can notify a customer that they are the highest user on their street, and point  
15 out the savings if they cut back.

16  
17 **Q. Please describe Global Water’s common SCADA system.**

18 **A.** This system allows us to remotely monitor and control all of our facilities. This allows us  
19 to reduce staffing costs, and also allows us to use the best qualified personnel for each  
20 situation. Further, we are able to operate our facilities very efficiently because we can  
21 directly compare results from multiple facilities, which share the same design.

22  
23 SCADA is much more than an operator view to the world. It is a management system –  
24 built to drive efficiencies into the operations. We must consider each of our plants (water  
25 or water reclamation) as production facilities. They are systems designed to make product  
26 from raw materials. In the case of our systems, these plants must take raw materials of  
27 varying quality and produce a product of impeccable quality 100% of the time. Statistical

1 process controls, batch monitoring, equipment health monitoring techniques, reliability  
2 analyses – these are the fundamental aspects of control engineering and we are driving  
3 these into our designs. Without these higher level architectures, plants operate as very  
4 expensive switches – either on or off. With integrated controls, they become factories  
5 which produce product for use by our customers. Direct reliable control of quality in these  
6 applications will not only enhance the marketability of our products but will ensure success  
7 in the deployment of our products into unfamiliar markets – such as residential reclaimed  
8 water use.

9  
10 **Q. Please describe Global Water’s common GIS system.**

11 A. Our GIS or “Geographical Information System” includes electronic data on the location of  
12 all of our plants and mains, as well as our CC&N boundaries, town limits, and other  
13 pertinent data. This allows us to rapidly create high-quality maps, which facilitates efficient  
14 planning and operations.

15  
16 The GIS system allows us to bluestake more efficiently. It allows for rapid triangulation  
17 and identification of trouble areas (eg breaks). It provides our customer service staff with  
18 graphical representations of our service area. It allows for rapid modeling of the effect of  
19 the new developments or new operational profiles on the distribution and collections  
20 systems. It adds geo-referenced capability for our CMMS system. Indeed, the GIS system  
21 acts as a hub around which other systems orbit – billing, CMMS, SCADA, CAD etc.

22  
23 **VII. CONCLUSION.**

24  
25 **Q. Please summarize your findings.**

26 A. My findings are:  
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- Water is scarce – minimizing its consumption is the prelude to all sustainability in the State.
- Santa Cruz Water Company uses less water per customer than Arizona Water Company.
- AWC’s engineering plans do not include plans for reclaimed water and recharge of water. They do have plans for surface water, but those plans do not go far enough, and their treatment plant will be online several years later than ours.
- Wastewater utilities benefit from economies of scale.
- We are planning a regional, interconnected system which will provide highly reliable and efficient service.
- Our structure allows us to deploy advanced information technology to better serve our customers.

**Q. Does that conclude your rebuttal testimony?**

A. Yes.

EXHIBIT

"12"

WASTE WATER COLLECTION AND TREATMENT INFRASTRUCTURE

**Water Reclamation Facilities**

- Installed Sewer
- Permitted Sewer
- Wastewater Master Plan
- Fitted CC&N
- Palo Verde Utilities Co
- Santa Rosa
- Francisco Grande
- 387 District
- Ak Chin

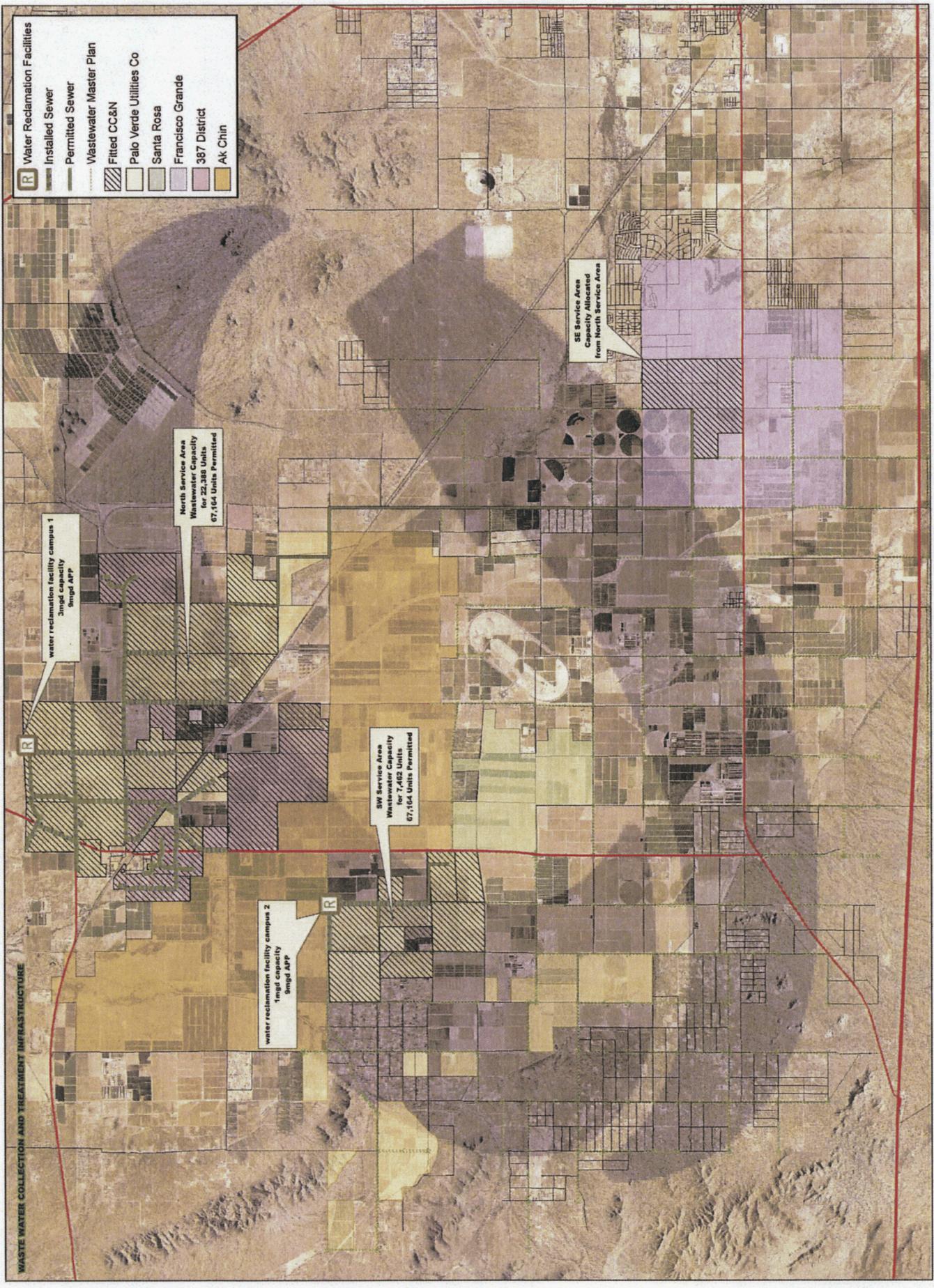
water reclamation facility campus 1  
3mgd capacity  
9mgd APP

North Service Area  
Wastewater Capacity  
for 7,412 Units  
67,164 Units Permitted

SW Service Area  
Wastewater Capacity  
for 7,412 Units  
67,164 Units Permitted

water reclamation facility campus 2  
1mgd capacity  
9mgd APP

SE Service Area  
Capacity Allocated  
From North Service Area

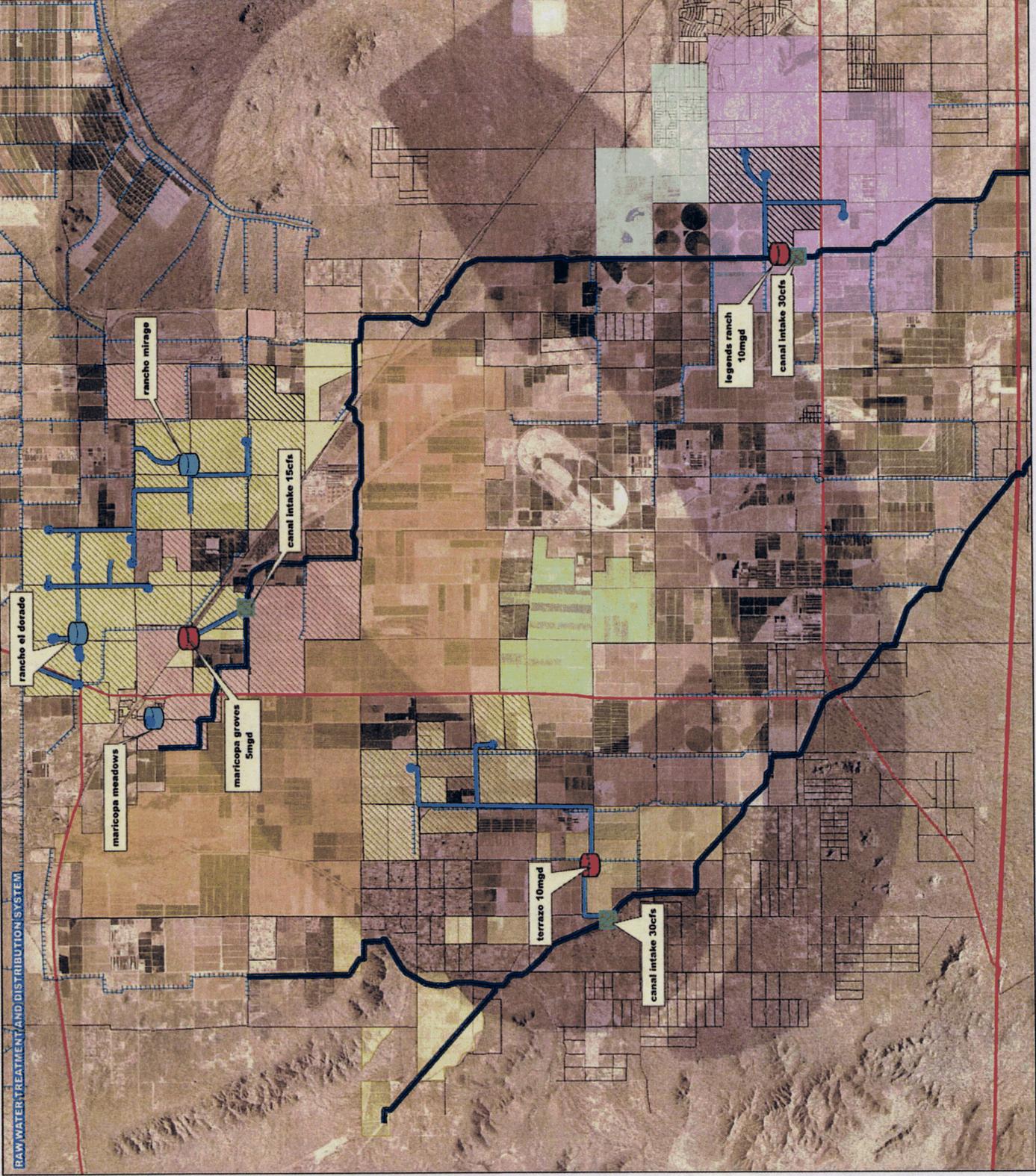


EXHIBIT

"13"

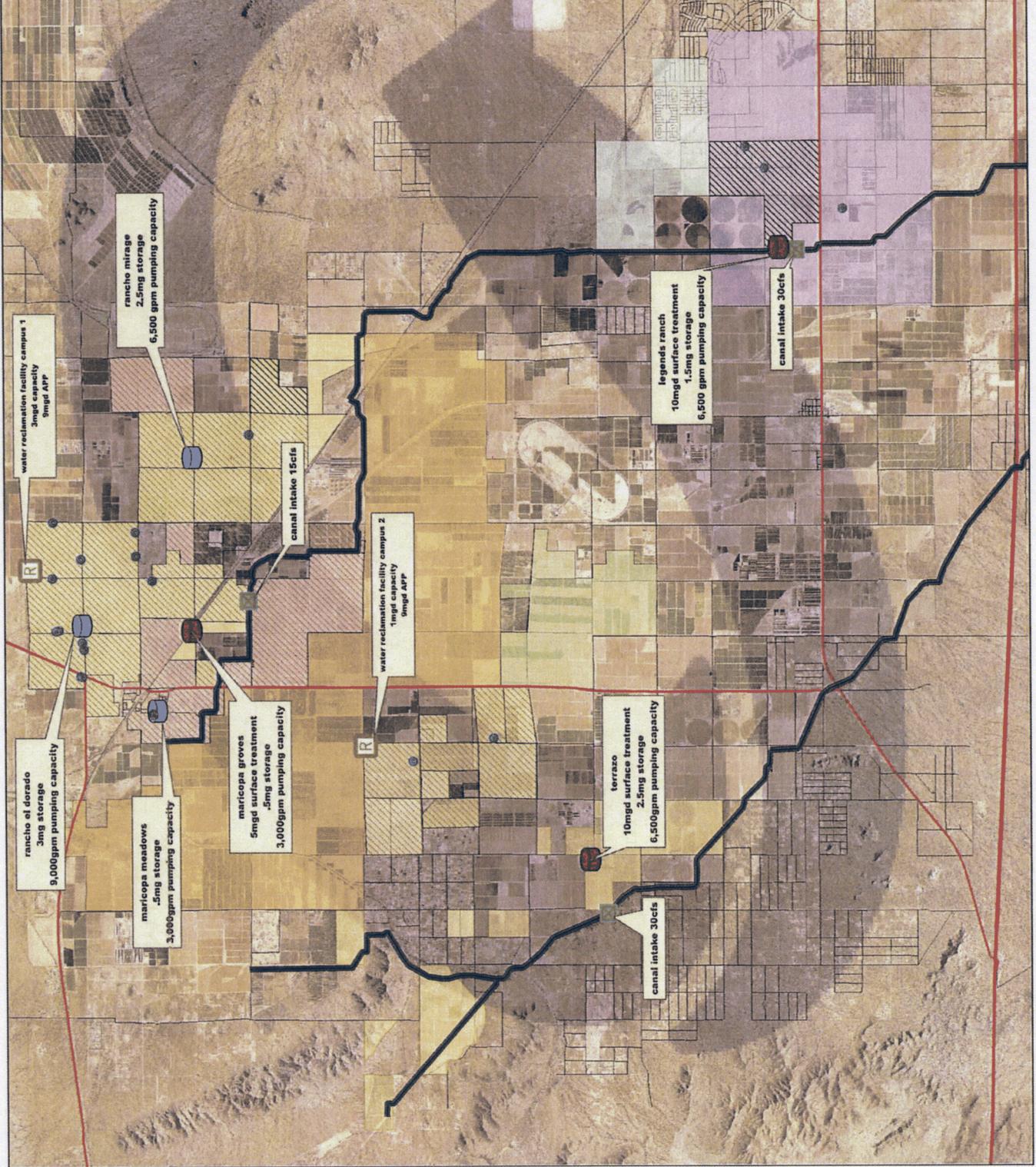
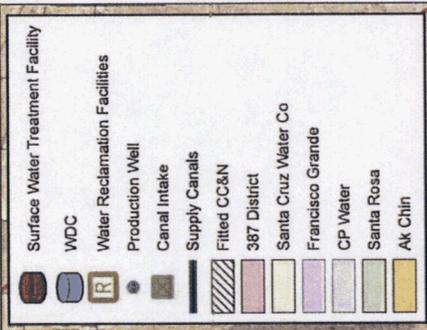
**RAW WATER TREATMENT AND DISTRIBUTION SYSTEM**

	Surface Water Treatment Facility
	WDC
	Production Well
	Canal Intake
	Raw Water Line
	Supply Canals
	Canals
	Fitted CC&N
	387 District
	Santa Cruz Water Co
	Francisco Grande
	CP Water
	Santa Rosa
	Ak Chin



EXHIBIT

"14"



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**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**

JEFF HATCH-MILLER- CHAIRMAN  
WILLIAM A. MUNDELL  
MIKE GLEASON  
KRISTIN K. MAYES  
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. W-01445A-06-0199  
ARIZONA WATER COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY. )

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. SW-03575A-05-0926  
PALO VERDE UTILITIES COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY )

) DOCKET NO. W-03576A-05-0926  
IN THE MATTER OF THE APPLICATION OF )  
SANTA CRUZ WATER COMPANY FOR AN )  
EXTENSION OF ITS EXISTING CERTIFICATE )  
OF CONVENIENCE AND NECESSITY )

Rebuttal Testimony of

Cindy Liles

on Behalf of

Palo Verde Utilities Company and  
Santa Cruz Water Company

February 14, 2007

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1 **I. INTRODUCTION.**

2

3 **Q. Please state your name and business address.**

4 A. My name is Cindy Liles. My business address is 21410 North 19<sup>th</sup> Avenue, Suite 201,  
5 Phoenix, Arizona 85027.

6

7 **Q. Are you the same Cindy Liles that filed Direct Testimony in this case?**

8 A. Yes.

9

10 **Q. What topics will you cover in this Rebuttal Testimony?**

11 A. I will address the following topics:

12 • I will explain that sustainable development using the triad of conservation costs  
13 more in this short run, but is less expensive in the long run. I will also explain why higher  
14 costs in the short run are appropriate.

15 • I rebut Arizona Water Company's ("AWC's") rate analysis. I show that AWC did  
16 not consider large "hidden costs" such as CAGR fees and recharge expenses. I also  
17 demonstrate the flaws in the four rate comparisons prepared by AWC witness Kennedy.

18 • I discuss the cost savings available to integrated utilities.

19 • I address the affiliate issues raised by AWC. I provide a current chart of all of  
20 Global's affiliates. I also compare Global's corporate structure to AWC, and I  
21 show that serious concerns exist about AWC's affiliate structure. I also explain the  
22 relationship between our regulated affiliates and Global Water Management, LLC.

23 • I respond to AWC's comments concerning Global's Infrastructure Coordination  
24 and Financing Agreements ("ICFA"). I explain how ICFA's enable Global to  
25 pursue the triad of conservation. I also show how ICFA's enable Global to pursue  
26 the Commission's goal of consolidation of small utilities.

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- I explain that many of the issues raised by AWC are better addressed in a rate case. I also suggest that the Commission order Santa Cruz and Palo Verde to file rate cases using a test year five years from now (i.e. filing by June 2013 using a test year ending December 2012)
- I explain why AWC’s proposal to disregard landowner requests for service is not appropriate.

**II. RATES.**

**Q. AWC argues that integration and conservation cost more. Do you have a response?**

A. Yes. In the short run, it is definitely more expensive to construct and operate a conservation-focused, integrated water, wastewater, and reclaimed water system. There is no question that building reclaimed water infrastructure is expensive. There is no question that building surface water treatment plants is expensive. There is no question that building recharge is expensive. These things are all expensive – but they are all necessary.

**Q. You indicate there are short-term costs. Are there also long-term costs?**

A. Yes. As Ms. Maguire and Mr. Briggs explain, Arizona’s water supply has limits. Sooner or later, Arizona will have to embrace conservation measures such as widespread use of reclaimed water. It is much cheaper to put that infrastructure in now, rather than try to retro-fit existing infrastructure. For example, ripping up the streets to put in new reclaimed water lines would be very expensive. Ms. Maguire discusses the difficulties Tucson and Flagstaff have had in this regard.

More fundamentally, how much does water cost when you run out? The scarcity of a resource is obviously related to its price. By taking measures today to maximize our water resources, we increase the available supply. In the future, water will become more scarce,

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and thus more expensive. But without taking water conservation measures today, the level of scarcity will be greater, and thus future prices will be comparatively greater.

**Q. Should the Commission look only at short-term costs?**

A. No. This is a situation where cheaper is not better. As explained above, the long-term cost of a “cheap” no-conservation, groundwater-focused approach will be great.

**Q. Is the public willing to pay more for conservation?**

A. Yes. There is strong public support for groundwater conservation measures, even when those measures result in higher bills. But we didn’t just ‘walk into’ this level of public support. In 2005, we asked people how willing they were to “pay higher rates for water if it helps conserve water in the community” – 42% said they were “not very willing” and 30% said they were only “somewhat willing”. We put together an aggressive public information campaign that involved advertising, community event sponsorships, public speaking, and numerous meetings with community leaders at the City, County, and Tribal levels. We explained the Triad of Conservation, the need for recharge, the many uses of reclaimed water, and we worked with local leaders to explain this vision and gather their support, those leaders then served as ambassadors to the public, explaining the benefits of reclamation and reuse and how it can protect Pinal County’s water resources.

We conducted a ‘follow-up’ poll last month, and the results are very positive. We asked people if they would be “willing or not willing to pay the following amounts” on their bill if it meant we could “reclaim and recycle” water, and increase our water supply.

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	Willing	Not Willing
@ \$20/month	48%	52%
@ \$15/month	55%	45%
@ \$10/month	69%	31%
@ \$5/month	90%	10%

**Q. You mentioned scarcity. How does scarcity impact prices?**

A. In economic terms, the greater the scarcity, the higher the price. The higher price sends a signal to consume less. Thus, the price of water should reflect its scarcity. Otherwise, customers will use water for comparatively wasteful purposes. In other words, appropriate pricing is a conservation measure.

**Q. Has the Commission used conservation-based pricing before?**

A. Yes. The best example is “inverted block” rates for water. In recent years, the Commission has usually approved three-tiered, inverted block rates for water. The typical approach is for the first tier to have a low price, recognizing that a certain minimum level consumption is needed for essential uses. Such essential uses tend to not respond to price signals. The third tier typically targets high users with a high price. The goal of the third tier is to signal those users to use less. Notably, AWC opposed this three-tiered conservation system at every opportunity.

Another example is the “High Block Surcharge” adopted in the Arizona-American’s recent Paradise Valley rate case. The High Block Surcharge imposes an additional surcharge (on top of the higher third tier rates) for customers that use more than 80,000 gallons a month.<sup>1</sup> The Commission specifically found that this would “encourage conservation” given the high consumption levels in Paradise Valley.<sup>2</sup>

<sup>1</sup> See Decision No. 68858 (July 28, 2006) at pages 30-33.  
<sup>2</sup> *Id.* at 32:18.

1 Other examples include DSM programs for electric and gas companies, and the  
2 Commissions "Renewable Energy Standard" to promote renewable energy. Thus, it is  
3 clear that Commission often promotes conservation through pricing.  
4

5 **Q. Do you have a response to the rate comparisons prepared by Mr. Kennedy?**

6 A. Yes. Mr. Kennedy argues that AWC's rates are lower than Santa Cruz's. His analysis  
7 omits what can be called "hidden costs." For example, residents in new AWC areas will  
8 be enrolled in the Central Arizona Groundwater Replenishment District ("CAGR") in  
9 order for the developers to obtain a Certificate of Assured Water Supply ("CAWS").  
10 AWC's customers will have to pay these annual CAGR fees. Since Santa Cruz has a  
11 Designation of Assured Water Supply, developers in Santa Cruz areas do not have to enroll  
12 in the CAGR. Our customers therefore do not have to pay CAGR fees. As Ms.  
13 Maguire explains, CAGR fees may be even higher in the future.  
14

15 Another example is recharge. The combined Santa Cruz and Palo Verde rates include the  
16 cost of recharge. The combined AWC and Casa Grande rates do not, because Casa Grande  
17 does not recharge. As Mr. Briggs explains, recharge is vitally important, and even AWC  
18 admits it is "prudent."  
19

20 Future water treatment is another hidden cost. We do not know what EPA will require in  
21 the future, or how much it will cost. As Mr. Hill explains, the best insurance policy against  
22 future regulatory mandates is to reduce the amount of water that is treated, by using  
23 reclaimed water for non-potable uses. AWC does not use this insurance policy, and its  
24 rates are therefore more exposed to future regulatory initiatives.  
25

26 I have further responses to each of the four comparisons Mr. Kennedy prepared.  
27

1 **Q. Please discuss Mr. Kennedy's first comparison.**

2 A. Mr. Kennedy compared a combination of Casa Grande's wastewater rates and AWC's  
3 "average water consumption" level at Casa Grande to the combined rates of Palo Verde  
4 and Santa Cruz. Mr. Kennedy makes several critical errors. He ignores the fact that our  
5 customers use much less water. He disregards hidden costs such as recharge. In addition,  
6 it is very unlikely that Casa Grande could serve the extension area at its current, low rates.  
7 Lastly, AWC's own rates would likely increase to serve the extension area. Thus, Mr.  
8 Kennedy's comparison of AWC's and Casa Grande's rates to Palo Verde's and Santa  
9 Cruz's rates is not valid.

10

11 **Q. Please discuss Mr. Kennedy's first error, regarding average water use.**

12 A. Our average water consumption is much less than AWC's. It would be more accurate to  
13 compare our rates, at our average consumption level, to AWC's rates at AWC's average  
14 consumption level. Mr. Kennedy states AWC's average consumption in Casa Grande is  
15 10,700 gallons per month, while Santa Cruz's is 5,500 gallons per month. A basic tenant  
16 of ratemaking is that as usage drops the volumetric rate will rise, assuming a constant level  
17 of costs. Lower usage is a positive – Santa Cruz should not be penalized because its lower  
18 usage results in a higher volume rate.

19

20 A simple hypothetical proves this point: Utility A's customers consume 5,000 gallons a  
21 month, while Utility B's customers consume 10,000 gallons per month. Assuming the  
22 companies have the same rate base, expenses, and so forth, Utility A's volume rate will be  
23 twice that of Utility B. Yet customers of both utilities have the same bottom line on their  
24 bill. Utility B does not really have lower rates than Utility A, and from a conservation  
25 standpoint, Utility A is clearly preferable.

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**Q. Please explain Mr. Kennedy's second error.**

A. He does not include hidden costs such as CAGR D fees and recharge. Casa Grande does not recharge its wastewater. As I have explained, while recharge is expensive, it is worth the cost. Indeed, even AWC concedes that recharge is "prudent" in this area. Thus, recharge is one of the "hidden costs" that AWC ignores. He also ignores the costs of CAGR D fees, which AWC's customers will have to pay, and which our customers will not pay.

**Q. Please explain Mr. Kennedy's third error.**

A. His comparison is flawed because Casa Grande's wastewater rates are very low, and likely represents highly depreciated old plant. It is doubtful that, even if Casa Grande wanted to serve the AWC extension area, that it could do so using its existing rates. The Commission has recently approved new wastewater rates of \$50, \$60, and even \$70 dollars a month. As I explained in my Direct Testimony, wastewater service is highly-capital intensive. Serving the vast AWC extension area would require massive investment in new facilities. There is no reason to think that any provider, including Casa Grande, could serve that area at Casa Grande's existing rates of \$11.68 per month<sup>3</sup>.

In short, existing Casa Grande rates do not reflect the costs of serving new areas. A better comparison would involve a wastewater provider serving a new area. A good example of this is the Entrada Del Oro area. This area gets water service from AWC's Apache Junction system and wastewater service from Entrada Del Oro Sewer Company. A customer that uses 10,000 gallons would pay about \$32.33 for water and \$70 for wastewater, for a combined bill of \$ 102.22. That compares to a combined Palo Verde and Santa Cruz bill of about \$83. And in reality our customers pay much less, because their

---

<sup>3</sup> As reported in Exhibit RJK-1 to Mr. Kennedy's testimony.

1 usage is much lower. Mr. Kennedy's claim that integrated water and wastewater providers  
2 are more expensive simply has no merit.

3  
4 **Q. What is Mr. Kennedy's fourth error?**

5 A. He erroneously assumes that AWC's rates would stay the same if it gets the extension area  
6 in this case. AWC's own Casa Grande costs reflect the costs of an older system. Like  
7 Casa Grande's wastewater costs, it is likely that rates would increase as new investment is  
8 made to serve the vast AWC extension area.

9  
10 **Q. What about Mr. Kennedy's second comparison?**

11 A. Mr. Kennedy compares Santa Cruz's rates directly to AWC's Casa Grande rates. This  
12 comparison has many of the same flaws as his first comparison.

13  
14 **Q. What about Mr. Kennedy's third comparison?**

15 A. Mr. Kennedy compares Santa Cruz's and Palo Verde's combined rates to the rates of a  
16 sample group of 19 integrated water and wastewater utilities. He claims that his  
17 comparison shows that Global's rates are higher. This analysis is flawed because Mr.  
18 Kennedy does not consider the age of the systems. Again, it costs more to serve new areas  
19 than to serve old areas with depreciated old plant. This is clearly shown by Mr. Kennedy's  
20 own figures. Older systems – such as Sun City (Arizona-American), Ajo, and Litchfield  
21 Park have low rates. New systems – such as Santa Cruz, Johnson, and Anthem (Arizona-  
22 American) have higher rates. Mr. Kennedy has simply “proved” that older systems have  
23 lower rates – hardly surprising to anyone familiar with utility rates.

24  
25 **Q. Do you have an example?**

26 A. Yes. Arizona-American provides a good example. Their Sun City system typifies an old  
27 system – it uses primarily groundwater, has high usage, and it has low rates. In contrast,

1 their Anthem system is newer, and it uses a triad-like strategy – they use primarily surface  
2 water, they have recharge wells, and they have some use of reclaimed water. But Anthem  
3 has some of the highest rates in Mr. Kennedy’s table, and they are asking for a substantial  
4 increase.

5  
6 **Q. Do all of the companies in Mr. Kennedy’s sample group provide the “triad of  
7 conservation”?**

8 A. No. Some of the companies are quite old, and their systems likely do not include triad-  
9 type strategies, which have only become possible in recent years. Integration alone does  
10 not result in conservation – in other words, integration is necessary but not sufficient for  
11 conservation. This is another reason Mr. Kennedy’s comparison is invalid – he should  
12 only compare companies that have gone through the expense of installing triad-type  
13 conservation measures.

14  
15 **Q. What about Mr. Kennedy’s fourth comparison?**

16 A. In that comparison Mr. Kennedy models the impact of adding \$ 20 million in equity to  
17 AWC’s Casa Grande rate base. However, that is not nearly enough. Mr. Whitehead  
18 estimates that new facilities for AWC’s extension area will cost at least \$ 140 million.<sup>4</sup>  
19 Mr. Kennedy reported that the projected AWC rate increased \$10 per month due to adding  
20 the \$ 20 million in equity, bringing AWC’s average rate much closer to Santa Cruz’s  
21 rates.<sup>5</sup> Obviously, adding a significant portion of the \$140 million in equity will have a  
22 substantial effect on AWC’s rates.

23  
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25  
26 <sup>4</sup> Whitehead Direct, page 7, lines 21 to 26 (\$ 23 million for new wells plus \$ 77 million for surface  
27 water treatment plus \$12 million for tanks plus “expanded grid system” of \$ 28 million equals  
\$140 million.

<sup>5</sup> Kennedy Direct, Exhibit RJK-10, line 20.

1 **Q. But could much of that investment be funded through advances?**

2 A. No, it would not be prudent to fund that much investment through advances in aid of  
3 construction (“AIAC”). Staff has clearly warned against the dangers of excessive use of  
4 AIAC. According to Staff, excessive use of AIAC leads to undercapitalized utilities.<sup>6</sup>  
5 Staff thus recommends that AIAC and CIAC not exceed 30 percent of total capital.<sup>7</sup> AWC  
6 has only \$69 million in equity for all 18 of its systems.<sup>8</sup> Adding \$ 140 million in AIAC to  
7 its Casa Grande system alone would obviously result in an unbalanced, undercapitalized  
8 company, contrary to Staff’s warnings.

9  
10 **III. INTEGRATION.**

11  
12 **Q. Are integrated utilities more efficient?**

13 A. Yes, there are a number of efficiencies. For example, they can share billing costs. Why  
14 send two bills when you can send one? Customer service costs can also be reduced – why  
15 call two people to set up service – a single point of contact is cheaper and more convenient.  
16 Likewise, management and finance can be combined, achieving economies of scale. In  
17 addition, there are operational efficiencies – for example both water and wastewater  
18 services can use the same field personnel. There is no need for two sets of workers to  
19 drive around in the typical “white utility pickup” – one will do just fine.

20  
21 A major source of savings comes from the ability to coordinate emplacement of  
22 infrastructure. For example, the utilities can coordinate trenching of mains. Why rip the  
23 streets up twice?

24  
25  
26 \_\_\_\_\_  
27 <sup>6</sup> Staff Report dated October 6, 2006, at page 6, Generic Financing Docket, Docket No. W-  
00000C-06-0149.

<sup>7</sup> *Id.*

<sup>8</sup> AWC 2005 Annual Report, page 7.

1 **Q. Does integration also allow Global to offer a high level of service?**

2 A. Yes. Because of economies of scale realized through integration of water and wastewater  
3 providers we are able to offer numerous benefits, such as “tower read” meters, advanced  
4 billing options (such as kiosks and web-based payment), as well as common SCADA and  
5 GIS systems. Mr. Symmonds explains the benefits of these systems.

6  
7 **IV. AFFILIATE ISSUES.**

8  
9 **Q. Please review Global’s corporate structure.**

10 A. Attached as Exhibit 2 is a current organizational chart of Global Water Resources and all  
11 related companies. This chart also shows the ownership of Global Water Resources, and  
12 its relationship to Global Water Management, LLC.

13  
14 **Q. Does AWC have affiliates?**

15 A. Yes. Although Mr. Kennedy criticizes the “complexity” of our corporate structure, our  
16 research indicates that AWC has a similarly complex structure with several affiliates and  
17 related holding companies. An organizational chart showing AWC’s corporate structure,  
18 as revealed by our research, is attached as Exhibit 3.

19  
20 **Q. Does AWC have transactions with its affiliates?**

21 A. Yes. AWC’s annual reports for the last six years show entries for “interest on debt to  
22 associated companies.” These charges are summarized in the chart below:

23

24 2000	\$352,121
25 2001	\$125,732
26 2002	\$104,283
27 2003	\$101,085

1	2004	\$164
2	2005	\$87,039

3  
4 Although the amount for 2004 is low, the reports for that year also show “interest expense”  
5 to a “parent company” in the amount of \$101,085.

6  
7 **Q. Are there other transactions between AWC and its affiliates?**

8 A. Yes. AWC has an affiliate named “Rosemead Properties, Inc.” that appears to be some  
9 sort of development or property company. Our research shows there have been several  
10 real property transactions between AWC and Rosemead.

11  
12 **Q. Has the California Public Utilities Commission examined Rosemead’s conduct?**

13 A. Yes. The California Public Utilities Commission (“CPUC”) recently investigated the  
14 relationship between AWC’s sister company, San Gabriel Valley Water Company, and  
15 Rosemead. According to the CPUC ALJ, Rosemead purchased property while San Gabriel  
16 was looking for a new office site.<sup>9</sup> Rosemead turned around and sold the sold property to  
17 San Gabriel at 185% of the original price.<sup>10</sup> The ALJ’s Proposed Decision concludes that  
18 the transaction between San Gabriel and AWC is a “violation of the affiliate transaction”  
19 standards and “is particularly egregious.”<sup>11</sup>

20  
21 The ALJ recommends disallowing a substantial portion of the price. But in addition, the  
22 ALJ recommends a fine of \$40,000 dollars (the maximum of \$20,000 each for two  
23 violations).<sup>12</sup> The ALJ noted that “[m]anagment’s involvement in this breach of trust was  
24

25  
26 <sup>9</sup> Proposed Decision of ALJ Barnett (mailed January 29, 2007) at pages 45-46 in CPUC docket  
A.05-08-021.

27 <sup>10</sup> *Id.*.

<sup>11</sup> *Id.*.

<sup>12</sup> *Id.* at 104-108.

1 100%; at the very top level of the utility and the holding company.”<sup>13</sup> The ALJ also noted  
2 that AWC’s affiliate was “no stranger to failing to provide complete information to the  
3 Commission” and that the CPUC dismissed a San Gabriel rate application on that  
4 ground.<sup>14</sup> The ALJ further stated that “San Gabriel knowingly provided misleading  
5 information to the Commission regarding issues that are material to this proceeding.”<sup>15</sup>  
6 CPUC Commissioner Bohn then filed an “Alternative Proposed Decision” finding a third  
7 violation and recommending a fine of \$60,000.<sup>16</sup>

8  
9 Given that AWC also has transactions with Rosemead, this should be a matter of concern.

10  
11 **Q. Has AWC disclosed the owners of its ultimate parent company, United Resources,  
12 Inc.?**

13 A. No. AWC claims that it does not know who owns its ultimate parent company.<sup>17</sup>

14  
15 **Q. Do you have a response to AWC’s statements regarding Global Water Management,  
16 LLC?**

17 A. Yes. Global Water Resources, LLC (“Global Parent”) is the ultimate parent company of  
18 all our regulated utilities. Global Parent and its subsidiaries do not have employees of their  
19 own. Instead, all employees are employed by Global Water Management, LLC (“Global  
20 Management”). Global Management allows us to efficiently utilize our employee  
21 resources, and is more efficient than having separate employees for Global Parent and each  
22 of its 18 subsidiaries.

23  
24  
25 <sup>13</sup> *Id.*

26 <sup>14</sup> *Id.*

27 <sup>15</sup> *Id.*

<sup>16</sup> “Alternate Proposed Decision of Commissioner Bohn”, mailed January 29, 2007 in CPUC docket A.05-08-021.

<sup>17</sup> AWC Response to Global 1.4.

1 **Q. Is Global Management an attempt to earn extra profit?**

2 A. No. Global Management does not include profit in charges to our regulated utilities, and it  
3 is not designed to make a profit from its relationship with our regulated utilities. However,  
4 Global Management does offer services to some unaffiliated utilities, and we do hope to  
5 make a profit from those activities. Mr. Kennedy is completely incorrect in his allegations  
6 that there is a profit component to the relationship between Global Management and our  
7 regulated utilities.

8  
9 **Q. Does Global Parent also pay for the services of Global Management?**

10 A. Yes, Global Parent pays for the services of the employees it uses, including our  
11 management team.

12  
13 **Q. Why not just hire employees for each company?**

14 A. Global Parent has 18 subsidiaries. It would not be practical to hire separate employees for  
15 each utility. This structure allows us to efficiently use our employees. For example, it is  
16 more efficient to have one set of customer service workers, than to have 18 separate sets.  
17 To have 18 separate sets, most utilities would have only part-time, limited customer  
18 service availability. By pooling the customer service function and employees across our  
19 affiliates, we are able to deliver better and less expensive customer service.

20  
21 **Q. Are there other benefits?**

22 A. Yes, it allows us to achieve economies of scale – requiring separate employees for each  
23 subsidiary would block us from achieving some of the possible cost reductions. We can  
24 also offer better employee benefits by having all the employees be employed by one  
25 company. For example, it would be more costly to have 18 separate health plans, 18  
26 separate 401(k) plans, and so forth.

27

1 **Q. How does this structure relate to consolidation of small utilities?**

2 A. It promotes the consolidation of small utilities. We are able to acquire and run utilities  
3 using a common pool of employees. Some of these utilities would not be viable if they  
4 had to have their own employees.

5  
6 **Q. But doesn't this structure cost more?**

7 A. No, it is more efficient. I have already explained a number of flaws in Mr. Kennedy's rate  
8 comparisons. His conclusions that this structure correlates to higher rates is unfounded. A  
9 better comparison would be to directly compare the employee expenses of the sample  
10 companies. Notably, Mr. Kennedy did not do this, even though that data is readily  
11 available from annual reports.

12  
13 **Q. But isn't this structure unusual?**

14 A. Not really. Other companies have used it. For example, we recently acquired West  
15 Maricopa Combine, which had a similar arrangement using a company called "West  
16 Maricopa Administrative Services." Another example is Pivotal Utility Management.  
17 This company manages a number of companies, some of which it owns. A list of  
18 companies operated by Pivotal is:

19  
20 Pine Meadows Utilities, LLC  
21 Sweetwater Creek Utilities  
22 Bensch Ranch Utilities, LLC  
23 Cross Creek Water Company  
24 Verde Santa Fe Wastewater Company  
25 Coronado Utilities, Inc.

26  
27 **Q. How does this structure compare to AWC?**

A. AWC's structure is to have all utility operations in the state owned by one corporation.  
Employees are employed by AWC. But AWC has 18 or so separate ratemaking divisions.  
So employee costs must be allocated to each division. In short, I am not convinced that

1 AWC's structure is simpler or easier to audit. Moreover, AWC's "single corporation"  
2 structure makes acquisitions more difficult. Many utility owners prefer to sell stock rather  
3 than assets – meaning a single corporation model will not work.  
4

5 **V. ICFAs.**

6  
7 **Q. Do you have comments regarding ICFAs?**

8 A. Yes. This is the wrong docket to address these matters. ICFAs are currently under review  
9 in Generic Financing Docket, Docket No. W-00000C-06-0149. We addressed the relevant  
10 issues in our comments in that docket. To the extent that ICFAs are considered in this  
11 case, I adopt our comments filed in that docket as part of my testimony.  
12

13 **Q. Do you have a response to Mr. Garfield's testimony regarding ICFAs?**

14 A. He notes that the ICFA payments are much less than the cost of building the necessary  
15 infrastructure.<sup>18</sup> Indeed, he is puzzled as to "where does that shortfall come from."<sup>19</sup> As  
16 we explained in our generic docket comments, Global Parent invests equity in our  
17 regulated utilities. The ICFAs simply cover the carrying cost of those investments, until  
18 there is matching revenue. ICFAs are also very important in funding acquisitions. Indeed  
19 our recent, and very significant, acquisitions of West Maricopa Combine, Francisco  
20 Grande Utility Company, and CP Water Company were each closely tied to ICFAs and  
21 would not have been possible without ICFAs.  
22

23 **Q. Do you have a response to Mr. Kennedy's testimony regarding ICFAs?**

24 A. Yes, his concerns are without merit. The ICFAs are subject to full Commission review in  
25 the Generic Financing Docket. Moreover, we will provide any information regarding  
26 ICFAs requested by Staff in that docket, or in any future rate case.  
27

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<sup>18</sup> Garfield Direct at 23-24.

<sup>19</sup> *Id.*

1 **Q. Mr. Kennedy stated that Staff concluded ICFA fees should be treated as AIAC or**  
2 **CIAC. Do you agree?**

3 A. No. The Staff Report addressed a “hypothetical” that differed from actual ICFAs in a  
4 number of ways. Moreover, Staff’s conclusions were tentative. We look forward to  
5 working with Staff further in the generic docket to answer their questions and address the  
6 issues that they have raised.

7  
8 **Q. Why has Global undertaken the use of these ICFAs versus just having its regulated**  
9 **affiliates enter into more traditional financing arrangements?**

10 A. Traditional financing arrangements do not allow for regional planning to occur and for  
11 facilities to be built on a larger scale. In order for water reclamation facilities and surface  
12 water treatment plants to be built, substantial capital is needed upfront. Traditional  
13 financing methods are not sufficient to provide the capital necessary to build these types of  
14 facilities. For example, main extension agreements can only be used to fund facilities  
15 directly tied to the specific developer that signed the agreement.<sup>20</sup> This often leads to  
16 small, inefficient facilities that cannot take advantages of economies of scale. The  
17 numerous small, “package” wastewater plants in Arizona are an example of this  
18 phenomenon. Another example of the inefficient use of main extension agreements is  
19 where a developer provides a well with water that needs to be treated for arsenic. The  
20 solution is well head treatment specific to that developer versus regional planning where  
21 water from several wells can be centrally located at a plant site and then blended resulting  
22 in less cost than treatment.

23  
24 Global (not the regulated affiliates) sign the ICFAs to provide the regional planning  
25 necessary to support the triad of conservation, as well as consolidation. ICFAs also allow  
26 Global to fund other activities related to regional planning in addition to constructing  
27

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<sup>20</sup> See A.A.C. R14-2-406.

1 facilities. Forming new utilities, consolidating existing utilities, paying for CAP  
2 reservation fees and paying for the protection of canal systems can all be accomplished  
3 with ICFAs. Furthermore, ICFAs align the interests of developers and utilities while  
4 allowing both to work with the cities to achieve sustainable and planned growth.

5  
6 Keep in mind that Global still provides the equity for the capital projects of its regulated  
7 affiliates like Santa Cruz and Palo Verde. Developers – through the ICFAs – only pay the  
8 carrying costs associated with the financing of infrastructure and to cover the time value of  
9 the equity Global invests.

10  
11 In addition, main extension agreements do not provide for regional planning and do not  
12 allow for the timing of facilities in such a way to support planning and building regional  
13 facilities. Instead, because main extension agreements are only between the utility and a  
14 specific developer for a specific development, only smaller and more inefficient facilities  
15 can be built. A utility cannot support absorbing the costs for the regional facilities hoping  
16 that those facilities become entirely used and useful. At the same time, advancing the  
17 goals of conservation through reclaimed water and surface water facilities mandates the  
18 need for regional facilities. In contrast to hook-up fees, which are limited in their purpose,  
19 ICFAs can be used for many purposes besides facilities and infrastructure.

20  
21 **Q. How do ICFAs relate to groundwater conservation?**

22 **A.** Put simply, Global could not undertake its path-breaking efforts in groundwater  
23 conservation without ICFAs. Installing reclaimed water systems is not cheap. Global  
24 insists on maximizing the use of reclaimed water. Unfortunately, this is not common. I  
25 am sure that other utility companies like the environment too. But they are not stepping up  
26 to the plate and getting the job done. Part of the reason is the deficiencies of traditional  
27 financing methods. The “used and useful” principle, regulatory lag, and other problems

1 make it difficult to attract capital to fund expensive facilities, no matter how beneficial the  
2 facilities may be in the long term. Thus, other utilities must often take the cheapest option,  
3 which precludes effective conservation measures. Thus, ICFA's should be encouraged, not  
4 condemned.

5  
6 **Q. You have explained how ICFA's are vital to Global's goals of water conservation.  
7 Could you explain how ICFA's aid Global in its other objectives of consolidation?**

8 A. ICFA's help Global purchase small water and wastewater utilities so those utilities can  
9 benefit from (1) economies of scale; (2) better access to both equity and debt capital and  
10 (3) have a sophisticated, savvy, and capable management team behind them. Many of these  
11 small utilities have little or no rate base, yet the Commission has been reluctant to pass on  
12 an "acquisition adjustment" into rate base under most circumstances. And even if an  
13 acquisition adjustment is allowed, rates go up due to the increase in rate base. In contrast,  
14 under the ICFA, developers help defray the acquisition costs, which facilitates the sale of  
15 these small and sometimes troubled utilities. ICFA's lead to a situation where everyone  
16 benefits: Global, the developers, the previous owners and the customers. This is how  
17 ICFA's advance Global's goal of consolidation.

18  
19 **Q. Can you give us examples of how ICFA's can promote consolidation?**

20 A. Yes. In fact, there are two examples that directly impact this case. In December 2006,  
21 Global acquired Francisco Grande Utility Company ("FG") and CP Water Company  
22 ("CP"). FG and CP are in the vicinity of the Santa Cruz and Palo Verde extension areas.  
23 They also border AWC's extension area (in fact, CP was within AWC's requested  
24 extension area, and was only excluded by order of the ALJ). FG and CP had little  
25 capability to provide service. But after Global's acquisition, they have access to the  
26 financial, managerial and technical resources needed in this region. In addition, adding FG  
27 and CP to Santa Cruz and Palo Verde will promote regional planning and economies of

1 scale. The CP and FG acquisitions would not have been possible without ICFAs.  
2 Likewise, the West Maricopa Combine acquisition would not have happened without  
3 ICFAs. For more information about these acquisitions, as well as the acquisition of the  
4 West Maricopa Combine companies, please see Mr. Hill's Direct Testimony.

5  
6 **VI. RATE CASE.**

7  
8 **Q. Are many of the issues raised by AWC more properly addressed in a rate case?**

9 A. Yes. Issues like Global Management charges or ICFAs would be classic rate case issues.  
10 Accordingly, I recommend that the Commission order Santa Cruz and Palo Verde to file a  
11 joint rate case. I recommend that the rate case be filed by Santa Cruz and Palo Verde using  
12 a test year five years from now (i.e. filing by June 2013 using a test year ending December  
13 2012).

14  
15 **Q. Why wait so long?**

16 A. Santa Cruz and Palo Verde are currently spending about \$50 million per year on capital  
17 projects. To be clear, most of that infrastructure is serving no one, and it very likely won't  
18 serve anyone for several years. We believe the proper way to build utility infrastructure,  
19 and the only way to emplace reclamation and reuse facilities, is to put the facilities in  
20 before the roads are paved, before homes are built, before customers exist. But this needs  
21 to be done on the front end because after the people and the homes show up, emplacing  
22 this infrastructure would be far more expensive. What that means is that our investors  
23 have tens of millions of dollars of infrastructure in the ground that is not generating any  
24 return. If we had a rate case now, the Commission would have to decide whether that  
25 infrastructure was 'used and useful.' The case would be very difficult to process, and in  
26 the end, rates would either skyrocket as a small group of customers would be forced to pay  
27 a return on infrastructure clearly built for future residents, or the Commission would tell

1 our investors, and the regulated community, that it will not support emplacing  
2 infrastructure beforehand. Neither choice is in the public interest.

3  
4 The appropriate course is for the Commission to allow investors to fund this infrastructure  
5 in the hope that when customers show up, they will get a return on their investment. Thus,  
6 the time for the rate case is five years from now when customers are in place. Then the  
7 Commission and the public will be able to fairly judge whether our planning and  
8 investments were 'worth it', whether we have served the public interest in enacting our  
9 Triad of Conservation.

10  
11 We are certain that the groundwater savings we have seen to date will be even greater –  
12 and the Commission will allow these systems into rate base. But for now, that's our risk,  
13 and there is no need for the Commission to decide such matters at this time.

14  
15 **VII. REQUESTS FOR SERVICE.**

16  
17 **Q. Do you have a response to Mr. Garfield's testimony regarding requests for service?**

18 A. Yes. It is shocking that Mr. Garfield is so cavalier towards the rights of landowners. He  
19 admits AWC has requests for only 175 acres – but they are asking for 70,494 acres. It is  
20 difficult to imagine a lower level of landowner support.

21  
22 **Q. Mr. Garfield also mentions a "9 factor" test. Do you have a response?**

23 A. Yes. I do not believe the Commission has ever adopted this test. Moreover, Staff  
24 proposed that test in a recent case, but Staff's position on requests for service was  
25 ultimately rejected by the Commission in that case.<sup>21</sup> Moreover, many of the "factors" are  
26

27  

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<sup>21</sup> See Decision No. 69163 (December 5, 2006).

1 vague at best. There is no reason for the Commission to reject its traditional approach to  
2 requests for service.

3  
4 **Q. Do you have other remarks?**

5 A. Yes. Mr. Whitehead notes that AWC does not have “plans from any of the relevant  
6 developers and therefore is not in a position to discuss the particular needs of each  
7 development.”<sup>22</sup> They do not have the planning information because they have no  
8 landowner or developer support. AWC’s plan to force a CC&N upon the landowners and  
9 developers is not likely to lead to greater cooperation in the future.

10  
11 We take a far different approach. We closely cooperate with landowners and developers.  
12 Under our ICFAs, we take responsibility for utility planning, but the developers are  
13 strongly motivated to cooperate by providing information so their developments can  
14 proceed. I just do not see how you can do adequate planning without information from the  
15 developers.

16  
17 **VIII. CONCLUSION.**

18  
19 **Q. Please summarize your testimony.**

20 A. My key conclusions are that:

21 (1) The triad of conservation is more expensive in the short term, but in the long term it  
22 is both essential and less expensive.

23 (2) Mr. Kennedy’s rate comparisons are deeply flawed because he does not adjust for  
24 the fact that our customers use less water, because he ignores the “hidden costs” that I  
25 identified, and because he does not account for the fact that serving new areas is more  
26 expensive.

27  

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<sup>22</sup> Whitehead Direct at 10.

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(3) Integrated water, wastewater and reclaimed water utilities are more efficient than non-integrated utilities.

(4) Global Management does not include profit in charges to our regulated utilities. The Global Management structure allows us to efficiently deploy our employee resources. It is not practical to have 18 separate sets of employees. In short, the Global Management structure is both legitimate and appropriate. In contrast, AWC and its affiliates face serious questions about their affiliate dealings.

(5) ICFA's facilitate conservation and consolidation.

(6) Santa Cruz and Palo Verde should file a rate case by June 2013.

(7) The Commission should continue to follow its traditional approach to request for service.

**Q. Does this conclude your prepared rebuttal testimony?**

A. Yes.

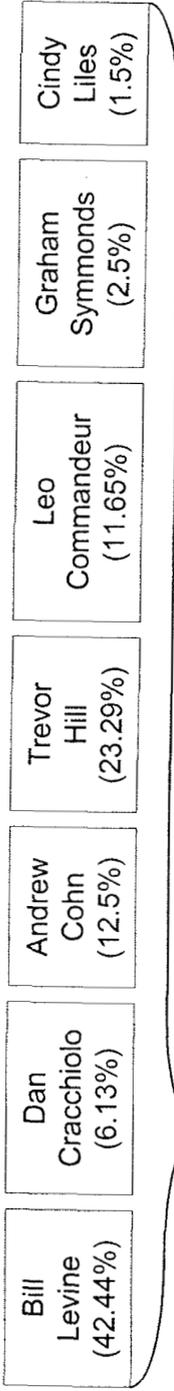
# EXHIBIT

"2"



# GLOBAL WATER

## Corporate Structure Effective 31 Dec 2006



Global Water Management LLC, Delaware LLC (100%)

GWM, LLC provides management services to Opscs under following headings all at industry standard charge-out rates:

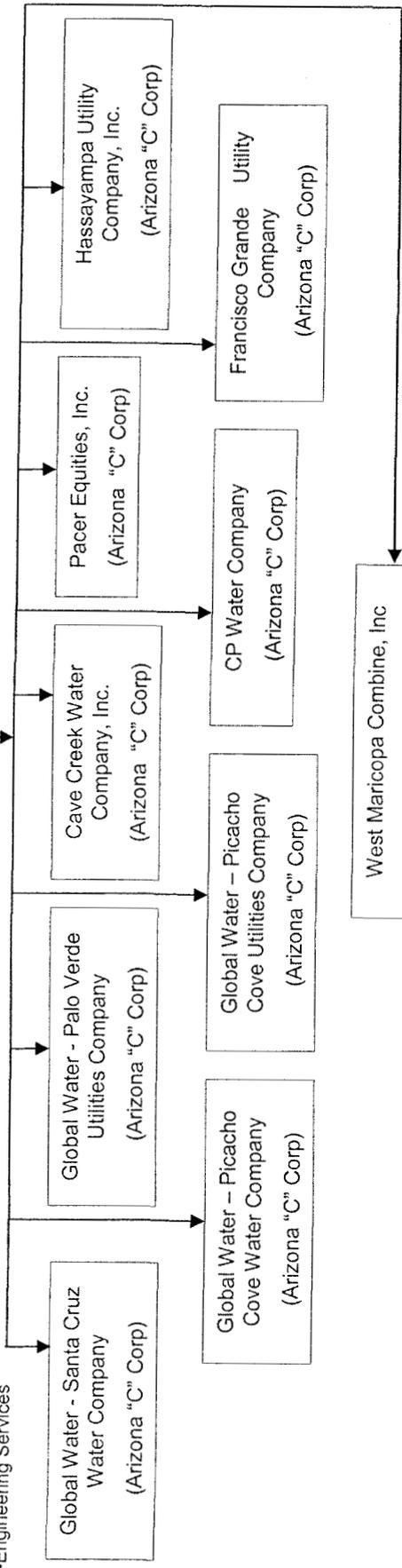
- Management
- Operations
- Billing Services
- Customer Service
- Engineering Services

Global Water Resources LLC, (Delaware LLC) Parent (100%)

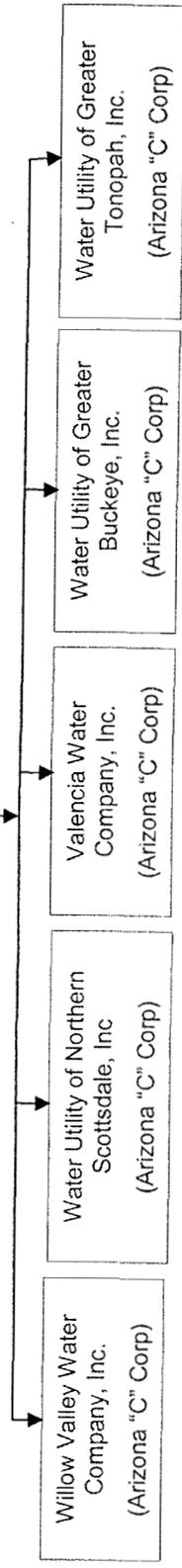
Santa Cruz Water Company, LLC (Arizona LLC)

Global Water, Inc. (Delaware "C" Corp) (holdco) (100%)

Palo Verde Utilities Company, LLC (Arizona LLC)



West Maricopa Combine, Inc (Arizona "C" Corp)



# EXHIBIT

"3"

# Arizona Water Company Corporate Structure

