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BEFORE THE ARIZONA CORPORATION

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COMMISSIONERS
MARC SPITZER - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
MIKE GLEASON
KRISTIN K. MAYES

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IN THE MATTER OF THE APPLICATION OF AJO
IMPROVEMENT COMPANY FOR RATE
ADJUSTMENTS IN ITS WATER AND
WASTEWATER RATES.

DOCKET NO. WS-01025A-03-0350

STAFF'S NOTICE OF FILING
DIRECT TESTIMONY

Staff of the Arizona Corporation Commission hereby files the Direct Testimony of Crystal S. Brown of the Utilities Division in the above-referenced matter.

RESPECTFULLY SUBMITTED this 17th day of March 2004.

David Ronald

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The original and thirteen (13) copies of the foregoing were filed this 17th day of March 2004 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Arizona Corporation Commission

DOCKETED

Copies of the foregoing were mailed this 17th day of March 2004 to:

MAR 17 2004

Jane L. Rodda
Administrative Law Judge
400 West Congress Street
Tucson, Arizona 85701

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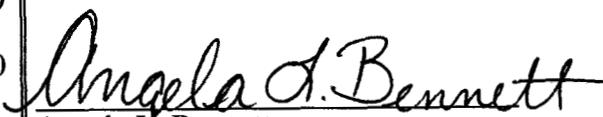
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**SURREBUTTAL
TESTIMONY
OF
CRYSTAL S. BROWN
DOCKET NO. WS-01025A-03-0350**

**IN THE MATTER OF THE APPLICATION OF
AJO IMPROVEMENT COMPANY FOR
RATE ADJUSTMENTS IN ITS WATER AND
WASTEWATER RATES**

MARCH 17, 2004

BEFORE THE ARIZONA CORPORATION COMMISSION

MARC SPITZER
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF)
AJO IMPROVEMENT COMPANY FOR)
RATE ADJUSTMENTS IN ITS WATER AND)
WASTEWATER RATES)
_____)

DOCKET NO. WS-01025A-03-0350

SURREBUTTAL
TESTIMONY
OF
CRYSTAL S. BROWN
PUBLIC UTILITIES ANALYST V
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

MARCH 17, 2004

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**EXECUTIVE SUMMARY
AJO IMPROVEMENT COMPANY
WATER AND WASTEWATER DEPARTMENTS
DOCKET NO. WS-01025A-03-0350**

Ms. Brown's surrebuttal testimony presents Staff's response to Ajo Improvement Company's ("Ajo" or "Company") rebuttal testimony regarding the cost of capital, total gallons sold, income taxes, and the inverted tier rate design. She also addresses the issues raised in the direct testimony of Arizona Water Company's witness Ms. Sheryl L. Hubbard.

Ms. Brown revises Staff's billing determinants to reflect the actual number of gallons sold; recommends a uniform block rate structure for water sold to public water systems; and revises the commodity rates for treated and untreated water. Ms. Brown's position on all other issues remains unchanged from her direct testimony.

1 **INTRODUCTION**

2 **Q. Please state your name.**

3 A. My name is Crystal S. Brown.

4

5 **Q. Are you the same Crystal S. Brown who testified earlier?**

6 A. Yes, I am.

7

8 **Q. What is the purpose of Staff's surrebuttal testimony?**

9 A. The purpose of this surrebuttal testimony is to respond, on behalf of the Utilities Division
10 Staff ("Staff"), to the rebuttal testimony of Ajo Improvement Company's ("Ajo" or the
11 "Company") testimony regarding the cost of capital, test year gallons sold, income taxes,
12 and the inverted tier rate design. Staff also addresses the issues raised in the direct
13 testimony of Arizona Water Company's ("Arizona Water") witness Ms. Sheryl L.
14 Hubbard.

15

16 **Correction to Operating Income – Test Year and Staff Proposed Schedule**

17 **Q. Would Staff like to make a correction to Schedule CSB-9, "Operating Income – Test
18 Year and Staff Proposed" of Staff's direct testimony?**

19 A. Yes. Water sales revenue for Staff recommended rates is presented as \$703,491. The
20 corrected amount is \$701,011. The misstated amount was not used in any other
21 calculations or any other schedules and it had no effect on Staff's recommendations. The
22 corrected schedule is presented as Staff's Surrebuttal Schedule CSB-1.

23

24

25

1 **SUMMARY OF COMPANY'S TESTIMONY**

2 **Q. Please summarize Ajo's rebuttal testimony and Arizona Water's direct testimony.**

3 A. Ajo disagrees with Staff's recommended cost of capital, total gallons sold, income taxes,
4 and the inverted tier rate design. Arizona Water disagrees with Staff's recommended
5 four-inch meter rate design and proposes a rate design specifically for Arizona Water.

6
7 **Cost of Capital**

8 **Q. Did the Company raise concerns about Staff's cost of equity?**

9 A. Yes. Ajo argues that the cost of equity is affected by (1) size and (2) financial and
10 business risks. Ajo indicates that its size and financial and business risks are not the same
11 as that of Arizona-American Water Company ("Arizona-American") and, therefore,
12 Staff's cost of equity is not applicable to Ajo.

13
14 **Q. Before you respond to the Company's concerns, please summarize how Staff
15 estimated an 8.5 percent cost of equity for Ajo.**

16 A. As discussed in my direct testimony, Staff has determined through an analysis performed
17 during the Arizona-American rate proceeding¹ that the cost of equity to a sample of
18 publicly traded water companies ranges from 8.0 to 9.6 percent with an average of 8.5
19 percent. The average equity cost is then increased or decreased in relation to the
20 percentage of long-term debt in a company's capital structure. This adjustment recognizes
21 that the use of long-term debt concentrates a company's risk on its shareholders;
22 increasing both the financial risk and the return an investor expects to receive.

23
24 In this case, Ajo had a capital structure consisting of approximately 20 percent long-term
25 debt and 80 percent equity. Staff's sample of companies had a capital structure consisting

¹ Docket No. WS-01303A-02-0867

1 of approximately 40 percent equity and 60 percent long-term debt with an average cost of
2 equity of 8.5 percent. Since Ajo has less long-term debt and, consequently, less financial
3 risk than the average company in the sample, Staff determined that Ajo's cost of equity
4 should be no greater than the average cost of equity for the sample.

5

6 **Q. How did Staff determine that the range for the cost of equity (i.e., 8.0 to 9.6 percent)**
7 **is the same for all water/wastewater companies?**

8 A. Staff performed an analysis using market based financial models and modern portfolio
9 theory. The analysis consisted of reviewing sufficient relevant financial information and
10 making calculations necessary to estimate the cost of equity to a sample of
11 water/wastewater companies. The result of the sample is considered as representative of
12 the water/wastewater industry. Thus, the calculated cost of equity range is applicable to
13 individual utilities in the water/wastewater utility industry.

14

15 In simple terms, the range for the cost of equity is the same for all water/wastewater
16 companies because firm specific risk, which is defined as the plethora of risks specific to a
17 particular company, can be diversified away.² What basically remains is market risk.
18 Market risk, the risk that changes in a stock's price will result from changes in the market
19 as a whole affects all companies. Market risk consists of business risk and financial risk.
20 Financial risk is a function of percentage of debt in the capital structure. Financial risk
21 increases as the debt percentage increases. Ajo has less debt in its capital structure than
22 the sample companies, therefore, its financial risk is less. Business risk is defined as the
23 uncertainty of income caused by the firm's industry³. All water utilities operate within the
24 same industry. Consequently, Ajo's argument that its business risk makes it more risky is
25 not valid.

² NRRI Journal of Applied Regulation – Volume 1, June 2003, p.79

³ Investment Analysis and Portfolio Management, p. 338

1 **Q. Is there any other evidence to support Staff's position?**

2 A. Yes. An article entitled "How Improper Risk Assessment Leads to Overstated Required
3 Returns" published by the National Regulatory Research Institute ("NRRI"), an affiliate of
4 the National Association of Regulatory Commissioners ("NARUC"), states that "Since
5 firm-specific risks are not relevant to the required return, regulators can ignore any
6 adjustment suggested for those items when setting a utility's authorized return."

7
8 **Q. Did the Company provide any evidence to support its argument that the cost of
9 equity is affected by (1) size and (2) financial and business risks?**

10 A. No, it did not.

11
12 **Q. Has the Commission ruled in the past on the relationship between the size of a utility
13 and its cost of equity?**

14 A. Yes, it has. The Commission stated in the Arizona Water Company rate proceeding that
15 "We do not agree with the Company's proposal to assign a risk premium to Arizona Water
16 based on its size relative to other publicly traded companies . . ." ⁴

17
18 **Q. Ajo argues that it has greater financial risk than Arizona-American and that Staff
19 did not consider the differences between Ajo and Arizona-American. Did Staff
20 consider the differences and does Ajo have greater financial risk than Arizona-
21 American?**

22 A. Staff considered the differences and determined that Ajo does not have greater financial
23 risk than Arizona-American. As previously discussed, the financial risk is the risk to
24 shareholders caused by a firm's reliance on long-term debt financing. Ajo's capital
25 structure consists of approximately 80 percent equity and 20 percent long-term debt,

⁴ Decision No. 64282, page 18, beginning at line 28.

1 whereas Arizona-American's capital structure consisted of approximately 40 percent
2 equity and 60 percent long-term debt. Therefore, Ajo has lower financial risk.

3
4 **Q. Are the Company's concerns that Ajo's (1) size and (2) financial and business risks**
5 **make it more risky than Arizona-American valid?**

6 A. No, they are not. The Commission has ruled in the past that size does not affect the cost
7 of equity. Ajo has less financial risk than Arizona-American because it has less long-term
8 debt. Ajo operates in the same industry as Arizona-American, thus its business risk is
9 similar. Therefore, none of Ajo's arguments are valid and Staff's recommended cost of
10 equity should be adopted.

11
12 **Q. How does Staff respond to the Company's assertion that Staff gave no consideration**
13 **to its recommendation for a 9.0 percent cost of equity in the Arizona Water**
14 **Company rate case, Docket No. W-01445A-02-0619?**

15 A. The cost of equity analysis performed by Staff in the Arizona-American Water Company
16 proceeding is more current than its analysis in the Arizona Water Company proceeding.
17 The latter is superseded by the more current analysis.

18
19 **Q. What does Staff recommend for Ajo's cost of equity?**

20 A. Staff continues to recommend an 8.5 percent cost of equity.

21
22 **Total Gallons Sold**

23 **Q. Did the Company raise concerns about Staff's calculation of Total Gallons Sold?**

24 A. Yes. The Company indicated that Staff's calculation of the total number of gallons sold
25 during 2002 overstates the Company's actual number of gallons sold during 2002.

26

1 **Q. Do you agree that Staff's calculation over-states the number of total gallons sold?**

2 A. Yes. Staff's bill frequency analysis calculation assumes that the usage on bills falling
3 within each range (e.g. 0 to 1,000 gallons) is at the midpoint.

4

5 Staff determined the number of gallons sold for each range by multiplying the midpoint
6 for each range by the number of bills falling within that range. To illustrate, the midpoint
7 of the 0 to 1,000 gallons range is 500 gallons, the number of bills falling in this range for
8 Ajo was 1,380, therefore the number of gallons Staff calculated for this range was 690,000
9 gallons (500 x 1,380). The number of gallons reported by the Company for this range was
10 675,000. Staff's use of the midpoint resulted in a 1.04 overstatement of the total gallons
11 sold.

12

13 **Q. Does Staff agree that the actual gallons sold in the Test Year as proposed by the**
14 **Company are the correct billing determinants to be used for designing rates to**
15 **recover the revenue requirement?**

16 A. Yes.

17

18 **Q. What is Staff recommending?**

19 A. Staff recommends revised rates and charges based upon reflecting actual gallons sold and
20 incorporation of a new rate structure for Ajo's four-inch customer, Arizona Water, as
21 discussed later in this testimony.

22

23

24

25

1 **Income Tax**

2 **Q. What concerns did the Company raise regarding Staff's calculation of income tax**
3 **expense?**

4 A. The Company argues that federal tax expense included in the revenue requirement should
5 be based on the federal income tax rate paid by its parent, Phelps Dodge Corporation
6 ("Phelps Dodge"), because Phelps Dodge files a consolidated tax return.

7
8 **Q. Is the Company's proposal to calculate the federal income taxes for Ajo on Phelps**
9 **Dodge federal tax rate consistent with past Commission decisions on this issue?**

10 A. No. The Commission has consistently ruled that income tax be calculated based on the
11 utility systems that are the subject of the immediate proceeding. To name a few examples,
12 the income taxes were calculated on the systems before the Commission or an individual
13 basis for (1) Arizona Water Company – Northern Division, Decision No. 64282, dated
14 December 28, 2001 (2) Arizona Water Company, Decision No. 58120, dated December
15 23, 1992, and (3) Sedona Venture Company - water and sewer systems, Decision No.
16 62425, dated April 3, 2000.

17
18 **Q. What is Staff recommending concerning the income tax?**

19 A. Staff continues to recommend that income tax expense be calculated on a stand alone
20 basis.

21
22 **Four-Inch Customer, Arizona Water Company**

23 **Q. What is Arizona Water Company's ("Arizona Water") interest in this proceeding?**

24 A. Arizona Water is a wholesale customer and is currently Ajo's only four-inch meter
25 customer. Decision No. 54369 requires that Arizona Water take water only during off-
26 peak hours and limits Arizona Water to 384,000 gallons of water per day.

1 **Q. Please discuss the concerns raised in the direct testimony of Arizona Water**
2 **Company witness, Sheryl L. Hubbard.**

3 A. Arizona Water disagrees with Staff's rate design for Arizona Water. Arizona Water
4 claims that Staff's recommended inverted tier rate structure for the four-inch meter places
5 too much of Ajo's total revenue increase on Arizona Water.

6
7 **Q. What rate is Arizona Water proposing for its own use?**

8 A. Arizona Water proposes a monthly customer charge of \$210 per month and a commodity
9 charge of \$2.67 per 1,000 gallons for treated water.

10
11 **Q. Does Staff agree that Arizona Water is a wholesale customer, is governed by the**
12 **restrictions set forth in decision No. 54369 and as such should have a different rate**
13 **design than other four-inch meter customers?**

14 A. Yes.

15
16 **Q. Does Staff agree with Arizona Water's proposed \$210 monthly customer charge and**
17 **\$2.67 per 1,000 gallons commodity rate?**

18 A. No, Staff does not agree with Arizona Waters' proposed rate design because these rates do
19 not recover all costs that are attributable to serving Arizona Water.

20
21 **Q. What costs are attributable to serving Arizona Water?**

22 A. Arizona Water receives treated water through a four-inch meter. Therefore, a portion of
23 all costs incurred by Ajo to deliver treated water to Arizona Water are properly
24 attributable to Arizona Water and should be allocated to Arizona Water based upon on a
25 reasonable allocation method.
26

1 Costs attributable to Arizona Water include the pumps needed to pump raw water from the
2 wells⁵; the transmission mains needed to transport the raw water to the raw water storage
3 tank; the water treatment plant needed to treat the raw water; the finished water storage
4 tank needed to store the treated water; and the distribution main needed to deliver the
5 treated water to Arizona Water. Meter reading, billing, collection and general and
6 administrative costs plus a return on the plant allocated to serve Arizona Water must also
7 be recovered.

8
9 Finally, Ajo's cost to purchase water from Phelps Dodge is directly chargeable to Arizona
10 Water for its volume of use. Staff determined that with the exception of some of Ajo's
11 distribution mains (which are not identified separately from the transmission mains) a
12 portion of all of the aforementioned costs incurred by Ajo should be allocated to Arizona
13 Water.

14
15 **Q. Did Ajo provide an analysis showing its cost to serve Arizona Water?**

16 A. No, it did not. Staff asked Ajo to provide "the cost (estimated if the actual data is not
17 known) to provide service" to Arizona Water.⁶ In response to the data request, Ajo
18 indicated that the cost to serve four-inch meters could not be determined without a
19 complete cost of service study.

20
21 **Q. Did Staff prepare an analysis to estimate the cost to serve Arizona Water?**

22 A. Yes.
23
24
25

⁵ The wells are owned by Phelps Dodge Corporation.

⁶ Data request CSB 6-1

1 **Q. What was the result of Staff's analysis?**

2 A. Staff's analysis determined that Arizona Water's commodity rate should be \$2.80 per
3 1,000 gallons with no change to Staff's recommended \$234 monthly customer charge.

4
5 **Q. What analysis supports Staff's conclusion?**

6 A. The analysis is presented on Schedule CSB-2. Staff's analysis shows that the average
7 commodity rate necessary to recover Staff's recommended revenue requirement and
8 generate the same proportion of revenue from the customer and commodity charges as
9 present rates is \$2.80 per 1,000 gallons of treated water. In other words, a \$2.80 per 1,000
10 gallons commodity rate is the uniform commodity rate that would apply to all treated
11 water if tiered rates were not adopted. Ajo would generate \$179,198 from Arizona Water
12 with a \$2.80 per 1,000 gallon commodity rate. As shown on Schedule CSB-3, Ajo
13 recovered 30 percent of Test Year revenues from Arizona Water. Ajo would need to
14 recover \$182,005 from Arizona Water to recover 30 percent of Staff's recommended
15 revenue from Arizona Water. Therefore, Ajo needs to recover \$2,808, or \$234, per month
16 as a customer charge from Arizona Water.

17

18 **Inverted Tier Rate Design**

19 **Q. Did the Company raise concerns about Staff's inverted tier rate design?**

20 A. Yes. The Company argues that Staff's rate design is not cost based and results in cross-
21 subsidies within the same customer class.

22

23

24

25

26

1 **Q. Is Staff's rate design cost based?**

2 A. Yes, Staff's rate design is cost based. Staff's rate design:

3 1. Is based on the cost to recover Staff's recommended operating expenses, return on
4 rate base, and income taxes.

5 2. Is based on recovering the costs from the monthly customer charge and the
6 commodity charge in approximately the same percentages as was recovered under
7 present rates in order to maintain revenue stability.

8 3. Is based on equitably recovering costs through usage patterns.
9

10 **Q. Is Ajo's seasonal uniform block rate design supported by a fully allocated cost of
11 service study?**

12 A. No, it is not.
13

14 **Q. What is the primary problem with the seasonal uniform block rate structure?**

15 A. The primary problem with the uniform block rate structure (whether seasonal or not) is
16 that the uniform block rate structure does not reflect a good relationship between the price
17 of water and the cost to provide water at varying consumption levels. A uniform block
18 rate structure presumes a uniform rate of usage for all customer classes, and consequently
19 does not address the additional costs caused by high volume users.
20

21 **Q. What is the cost relationship between the price of water and the amount of water
22 used?**

23 A. The cost relationship is twofold. Usage patterns affect (1) equitable recovery of capacity
24 costs from plant and (2) equitable recovery of capacity costs from source of
25 supply/purchased water costs. The size of a water system is dependent upon the amount
26 of water customers use during the peak period. Customers who use large amounts of

1 water during the peak cause the water system to be built larger than otherwise necessary.

2 A uniform rate does not address this issue.

3

4 Additionally, a uniform rate does not address the fact that customers who use large
5 amounts of water deplete water resources faster, thus, accelerating the need to find and
6 pay for additional water resources. The quantity of water resources available to Arizona
7 and in Ajo's service territories does not grow with customer usage. The cost of
8 developing, treating and delivering this finite resource increases with diminishing supply
9 and increased health and safety issues.

10

11 **Q. Does Staff's rate design create significant cross-subsidies for residential customers as**
12 **claimed by the Company?**

13 A. No. Staff's rate design does not create significant cross-subsidies for residential
14 customers. Staff's rate design equitably recovers costs based on usage patterns. Higher
15 use customers pay more than that of average use customers to reflect the increasing cost of
16 developing new water supplies.

17

18 **Q. Does Ajo's seasonal uniform block rate design create significant cross-subsidies for**
19 **customers within the same customer class?**

20 A. Yes, it does. As I discussed earlier, a uniform rate structure presumes a uniform rate of
21 usage for all customer classes. This is an erroneous assumption. All customers within a
22 given customer class do not use the same amount of water each month. Some customers
23 use significantly more water than others and these high use customers should pay for the
24 higher costs they are placing on the water system.

25

1 Ajo's uniform rate structure averages the costs of higher use customers with those of
2 lower use customers. In effect, the uniform block rate structure rewards customers within
3 the same customer class who use more water than the average (because some of the costs
4 incurred by these customers are transferred to the lower use customers) and penalizes
5 customers who use less water than average (because they are subsidizing the higher use
6 customers).

7

8 **Q. Does Ajo's proposed uniform block rate structure provide a good cost relationship**
9 **between usage patterns and capacity costs?**

10 A. No, the price of water reflected in Ajo's proposed uniform block rate structure does not
11 provide a good cost relationship between usage patterns and capacity costs because it
12 averages the cost of higher use customers with lower use customers.

13

14 **Q. How can water be priced to better assign cost responsibility and to encourage**
15 **efficient water use?**

16 A. Water can be priced to better assign cost responsibility and encourage efficient use by
17 adopting Staff's recommended inverted tier rate design.

18

19 Ideally, the best way to price water is to determine the cost to serve each customer and
20 design rates accordingly. This level of cost analysis is time, information, and cost
21 prohibitive. Costs, however, can be determined for groups of customers that have similar
22 usage patterns. Staff's inverted tier rate structure encourages efficient water usage by
23 assigning higher costs to customers within the same customer class who use more than the
24 average.⁷ Accordingly, Staff's rate design assigns a lower cost to customers within the
25 same customer class who use less than the average.

⁷ The range of average water usage for an inverted three-tier structure is the range of the second tier. The range of average water usage for an inverted two-tier structure is the range of the first tier.

1 **Q. Did Staff provide a schedule of revised rates for treated water?**

2 A. Yes, the revised rates for treated water presented on Surrebuttal Schedule CSB-4. No
3 changes were made to the untreated water rates, service line and meter installation charges
4 or to the service charges.

5
6 **Q. Does this conclude your Surrebuttal testimony?**

7 A. Yes, it does.

OPERATING INCOME - TEST YEAR AND STAFF PROPOSED

LINE NO.	DESCRIPTION	[A] COMPANY TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
<u>REVENUES:</u>						
1	Water Sales	\$ 634,658	\$ -	\$ 634,658	\$ 66,353	\$ 701,011
2	Other Water Revenues	6,986	-	6,986	2,480	9,466
3	Total Operating Revenues	<u>\$ 641,644</u>	<u>\$ -</u>	<u>\$ 641,644</u>	<u>\$ 68,833</u>	<u>\$ 710,477</u>
<u>EXPENSES:</u>						
4	Salaries and Wages	\$ 29,012	\$ (282)	\$ 28,730	\$ -	\$ 28,730
5	Employee Pension and Benefits	19,302	(187)	19,115	-	19,115
6	Purchased Water	477,938	-	477,938	-	477,938
7	Outside Services - Legal and Consulting	3,153	(2,074)	1,079	-	1,079
8	Outside Services - Oper. and Maint.	85,787	-	85,787	-	85,787
9	Rental Expense	1,200	-	1,200	-	1,200
10	Materials and Supplies	15,168	-	15,168	-	15,168
11	General and Administrative	25,400	(2,000)	23,400	-	23,400
12	Depreciation	35,963	(29,405)	6,558	-	6,558
13	Property Taxes	39,382	(153)	39,229	-	39,229
14	Income Taxes	(35,731)	22,939	(12,792)	14,878	2,086
15	Total Operating Expenses	<u>\$ 696,574</u>	<u>\$ (11,163)</u>	<u>\$ 685,411</u>	<u>\$ 14,878</u>	<u>\$ 700,290</u>
16	Operating Income (Loss)	<u>\$ (54,930)</u>	<u>\$ 11,163</u>	<u>\$ (43,767)</u>	<u>\$ 53,955</u>	<u>\$ 10,188</u>

References:

- Column (A): Company Schedule C-1, Page 2
- Column (B): Schedule CSB-9
- Column (C): Column (A) + Column (B)
- Column (D): Schedules CSB-1 and CSB-2
- Column (E): Column (C) + Column (D)

COST ANALYSIS FOR ARIZONA WATER COMPANY

Line No.			
1	Commodity Costs for Treated Water		
2	\$ 433,163	Total Actual Treated Water Costs	
3	\$ 44,775	Total Actual Untreated Water Costs	
4	\$ 477,938	Total Actual Treated and Untreated Water Costs	
5			
6		162,358 Treated Water Gallons (in 1,000's)	
7	Plus: 43,667	Untreated Water Gallons (in 1,000's)	
8		206,025 Total Gallons	
9			
10		43,667 Untreated Water Gallons	
11	Divided by: 206,025	Total Gallons	
12		21.2% Percentage of Untreated Water Gallons	
13			
14			
15	Calculation of Estimated Treated Water Costs to be Recovered Through Commodity Rate		
16			
17	\$ 701,011	Staff's Metered Water Revenue (Total Purchased Water + All Other Operating Expenses)	
18	Less: \$ 477,938	Total Actual Purchased Water Costs for Treated and Untreated	
19	\$ 223,073	Total "All Other Operating Expenses" for Treated and Untreated Water	
20			
21	Removal of All Untreated Water Expenses		
22	\$ 223,073	Total "All Other Operating Expenses" for Treated and Untreated Water	
23	Multiplied by: 21.2%	Percentage of Untreated Water Gallons	
24	\$ 47,291	Total "All Other Operating Expenses" for Untreated Water	
25			
26	\$ 223,073	Total "All Other Operating Expenses" for Treated and Untreated Water	
27	Less: \$ 47,291	Total "All Other Operating Expenses" for Untreated Water	
28	\$ 175,782	Total "All Other Operating Expenses" for Treated Water	
29			
30	Portion of "All Other Operating Expenses" for Treated Water Recovered Through Monthly Cust. Charge		
31	\$ 175,782	Total "All Other Operating Expenses" for Treated Water	
32	Multiplied by: 86.02%	Percent of Total "All Other Oper Exp" To Be Recovered through Monthly Customer Charge	
33	\$ 151,207	Total Treated Wtr "All Other Operating Exps" to be Recovered Thru Monthly Cust Charge	
34			
35	Portion of "All Other Operating Expenses" for Treated Water Recovered Through Commodity Charge		
36	\$ 175,782	Total "All Other Operating Expenses" for Treated Water	
37	Less: \$ 151,207	Total Treated Wtr "All Other Operating Exps" to be Recovered Thru Monthly Cust Charge	
38	\$ 24,574	Total Treated Wtr "All Other Operating Exps" to be Recovered Through Commodity Charge	
39			
40	\$ 24,574	Total Treated Wtr "All Other Operating Exps" to be Recovered Through Commodity Charge	
41	Plus: \$ 433,163	Total Actual Treated Purchased Water Cost	
42	\$ 457,737	Total Treated Pur Wtr & "All Other Oper Exp" Costs to be Recovered thru Commodity Rate	
43	Less: \$ 1,042	To Maintain same percent of Commodity Rev as generated under present rates (about 64%)	
44	\$ 456,695	Commodity Rev Generated Under Proposed Rates (\$456,695 / \$710,477 = 64.29%)	
45			
46	Calculation of Commodity Rate for Arizona Water		
47	\$ 456,695	Total Treated Water Costs	
48	Less: \$ 2,092	To Maintain 30% of commodity revenue as generated from 4"meter customer under present rates	
49	\$ 454,603		
50	Divided by: 162,358	Total Treated Water Gallons	
51	\$ 2.80	per 1,000 gallons	
52			
53	\$ 2.80		
54	Multiplied by: 63,999	Gallons used by Arizona Water	
55	\$ 179,198	Total Purchased Water and "All Other Operating Expenses" Allocated to Arizona Water	

**AJO IMPROVEMENT - WATER DIVISION
PRESENT AND PROPOSED RATES AND PERCENTAGES**

	Treated Water		TOTAL TREATED		Untreated Water		TOTAL UNTREATED		
	Present Rates Customer Charge	Present Rates Commodity Charge							
5/8 Inch Meter	\$ 117,477.00	\$ 189,341.20	\$ 306,818.20	\$ 55.89%	\$ 729.00	\$ 9,585.91	\$ 10,314.91	\$ 6,986.00	\$ 324,119.11
1 Inch Meter	\$ 3,840.00	\$ 10,379.17	\$ 14,219.17	2.59%	-	-	-	-	\$ 14,219.17
1.5 Inch Meter	\$ 75.00	\$ 3.81	\$ 78.81	0.01%	-	-	-	-	\$ 78.81
2 Inch Meter	\$ 9,150.00	\$ 44,935.20	\$ 54,085.20	9.85%	\$ 1,200.00	\$ 27,583.83	\$ 28,783.83	\$ 28,783.83	\$ 82,869.03
3 Inch Meter	\$ 3,600.00	\$ 5,175.45	\$ 8,775.45	1.60%	\$ 4,900.00	\$ 32,845.74	\$ 37,745.74	\$ 37,745.74	\$ 46,521.19
4 Inch Meter	\$ 2,400.00	\$ 162,557.48	\$ 164,957.48	30.05%	\$ 2,400.00	\$ 6,388.96	\$ 8,788.96	\$ 8,788.96	\$ 173,746.44
	\$ 136,542.00	\$ 412,392.31	\$ 548,934.31	100.00%	\$ 9,229.00	\$ 76,404.44	\$ 85,633.44	\$ 6,986.00	\$ 641,553.75
	21.2830%	64.2802%			1.4385%	11.9093%		1.0889%	100.0000%

	Treated Water		TOTAL TREATED		Untreated Water		TOTAL UNTREATED		
	Proposed Rates Customer Charge	Proposed Rates Commodity Charge							
5/8 Inch Meter	\$ 128,572.05	\$ 196,643.03	\$ 325,215.08	53.67%	\$ 797.85	\$ 10,661.95	\$ 11,459.80	\$ 9,466.00	\$ 346,140.88
1 Inch Meter	\$ 4,492.80	\$ 13,134.69	\$ 17,627.49	2.91%	-	-	-	-	\$ 17,627.49
1.5 Inch Meter	\$ 87.75	\$ 4.50	\$ 92.25	0.02%	-	-	-	-	\$ 92.25
2 Inch Meter	\$ 10,705.50	\$ 59,933.48	\$ 70,638.98	11.66%	\$ 1,404.00	\$ 31,547.82	\$ 32,951.82	\$ 32,951.82	\$ 103,590.80
3 Inch Meter	\$ 4,212.00	\$ 6,191.90	\$ 10,403.90	1.72%	\$ 5,733.00	\$ 36,059.98	\$ 41,792.98	\$ 41,792.98	\$ 52,196.88
4 Inch Meter	\$ 2,808.00	\$ 179,197.22	\$ 182,005.22	30.03%	\$ 2,808.00	\$ 6,676.62	\$ 9,484.62	\$ 9,484.62	\$ 191,489.84
	\$ 150,878.10	\$ 455,104.83	\$ 605,982.93	100.00%	\$ 10,742.85	\$ 84,946.37	\$ 95,689.22	\$ 9,466.00	\$ 711,138.14
	21.2164%	63.9967%			1.5107%	11.9451%			\$ 710,477.00

Divided by \$ 661.14
\$ 710,477.00
0.09%

RATE DESIGN

Monthly Customer Charge:

5/8" x 3/4" Meter
3/4" Meter
1" Meter
1 1/2" Meter
2" Meter
3" Meter
4" Meter
6" Meter

Monthly Customer Charge		
Direct Testimony		Surrebuttal Testimony
\$	9.85	\$ 9.85
\$	12.80	\$ 12.80
\$	17.55	\$ 17.55
\$	29.25	\$ 29.25
\$	58.50	\$ 58.50
\$	117.00	\$ 117.00
\$	234.00	\$ 234.00
\$	300.00	\$ 300.00

Gallons Included In Monthly Customer Charge:

5/8" x 3/4" Meter
3/4" Meter
1" Meter
1 1/2" Meter
2" Meter
3" Meter
4" Meter
6" Meter

0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0

TREATED WATER

Commodity Rates For 5/8 Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 3,000 Gallons	\$ 1.93	\$ 2.00
Per 1,000 Gallons for 3,001 to 14,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 14,000	\$ 3.47	\$ 3.60

Commodity Rates For 3/4 Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 3,000 Gallons	\$ 1.93	\$ 2.00
Per 1,000 Gallons for 3,001 to 14,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 14,000	\$ 3.47	\$ 3.60

Commodity Rates For 1-Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 25,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 25,000	\$ 3.47	\$ 3.60

Commodity Rates For 1 1/2-Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 42,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 42,000	\$ 3.47	\$ 3.60

Commodity Rates For 2-Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 63,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 63,000	\$ 3.47	\$ 3.60

Commodity Rates For 3-Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 120,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 120,000	\$ 3.47	\$ 3.60

Commodity Rates For 4-Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 180,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 180,000	\$ 3.47	\$ 3.60

Commodity Rates For 6-Inch Meter - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	N/A
Per 1,000 Gallons for 0 to 290,000 Gallons	\$ 2.90	\$ 3.00
Per 1,000 Gallons for Gallons in Excess of 290,000	\$ 3.47	\$ 3.60

Commodity Rates For Public Water Systems (During Off-Peak Hours) - Treated Water:

Per 1,000 Gallons (In Excess of Minimum)	N/A	\$ 2.80
Per 1,000 Gallons for 0 to 180,000 Gallons	\$ 2.90	N/A
Per 1,000 Gallons for Gallons in Excess of 180,000	\$ 3.47	N/A

No changes were made to untreated water rates.