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Rate Design  
Donald Johnstone  
Rebuttal Testimony  
AGP  
WR-2011-0337  
January 19, 2012

Missouri American Water Company  
WR-2011-0337

Rebuttal Testimony of

**Donald E. Johnstone**

on behalf of

AG PROCESSING INC, A COOPERATIVE

January, 2012



**BEFORE THE  
PUBLIC SERVICE COMMISSION OF MISSOURI**

In the Matter of Missouri-American Water )  
Company's Request for Authority to )  
Implement a General Rate Increase for ) WR-2011-0337  
Water Service Provided )  
in Missouri Service Areas )

**Affidavit of Donald E. Johnstone**

State of Missouri )  
County of St. Louis ) SS

Donald E. Johnstone, being first duly sworn, on his oath states:

1. My name is Donald E. Johnstone. I am a consultant and President of Competitive Energy Dynamics, L. L. C. I reside at 384 Black Hawk Drive, Lake Ozark, MO 65049. I have been retained by AG PROCESSING INC, A COOPERATIVE.

2. Attached hereto and made a part hereof for all purposes are my testimony and schedules in written form for introduction into evidence in the above captioned proceeding.

3. I hereby swear and affirm that my testimony is true and correct and show the matters and things they purport to show.

  
\_\_\_\_\_  
Donald E. Johnstone

Subscribed and sworn to this 19<sup>th</sup> day of January, 2012.

  
\_\_\_\_\_  
Notary Public



Competitive Energy  
DYNAMICS

Missouri American Water Company

WR-2011-0337

Rebuttal Testimony of Donald E. Johnstone

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Competitive Energy

DYNAMICS

1 Missouri American Water Company

2 WR-2011-0337

3 Rebuttal Testimony of Donald E. Johnstone

4 INTRODUCTION

5 Q PLEASE STATE YOUR NAME AND ADDRESS.

6 A Donald E. Johnstone. My address is 384 Black Hawk Drive, Lake Ozark, MO 65049.

7 Q ARE YOU THE SAME DONALD JOHNSTONE THAT SUBMITTED DIRECT TESTIMONY IN  
8 THIS PROCEEDING?

9 A I previously submitted rate design direct testimony in this docket.

10 Q PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY.

11 A As explained in my earlier testimony, the rates for MAWC water service in each district  
12 should reflect the cost of the water services provided in each district for each rate  
13 class, for the reasons set forth in that testimony. In this testimony I respond to Staff's  
14 proposal to create what are characterized as "hybrid" districts.

15 Silence in this testimony should not be construed as agreement with or support  
16 for any issues not addressed.

17 For the purpose of illustration I cite the district-specific revenue requirements  
18 prepared by Staff at its mid-level return. This is not intended as support for this  
19 result. My client reserves the right to assert a position on revenue requirements  
20 matters in due course.

1 Q PLEASE SUMMARIZE THE STAFF'S PROPOSED VARIATION FROM DISTRICT-SPECIFIC  
2 PRICING.

3 Staff proposes to consolidate districts into what it calls "hybrid" districts. In reality  
4 what is accomplished is an averaging of the costs over the several districts comprising  
5 each of the Staff's hybrid districts. The combinations appear to be based roughly on  
6 geography. If the proposed combinations were based on similar circumstances and  
7 similar costs, the existing rates would already be similar for each existing district  
8 within each hybrid grouping. That is not the case.

9 The districts proposed for combination have existing rates that are widely  
10 divergent. For example, Staff would combine the St. Joseph District, one of the lower  
11 cost districts, with two higher cost districts, Brunswick and Parkville. The average  
12 present residential revenue per 1000 gallons for Parkville is 36% higher than in the St.  
13 Joseph District. Brunswick is 188% higher. While this illustrates the vast disparity  
14 among the districts at present rates, the disparity would be larger yet if Brunswick was  
15 paying its cost of service as measured by the Staff's district-specific revenue  
16 requirements. Also, wide variations in the underlying costs for the St. Joseph,  
17 Parkville, and Brunswick districts are documented in Schedules BAM DIR 3, 4, and 5  
18 attached to the direct testimony of OPC witness Meisenheimer. The costs are  
19 substantially lower in the St. Joseph District as compared to the costs in the other two  
20 districts. One important result of Staff's hybrid combination of dissimilar districts is  
21 the creation of inter-district subsidies. In this example, the burden would be on the  
22 St. Joseph District.

1 SUMMARY OF TESTIMONY AND RECOMMENDATIONS

2 Q GIVEN THE STAFF’S PROPOSAL FOR HYBRID DISTRICT PRICING, WOULD YOU PLEASE  
3 PROVIDE A SUMMARY OF YOUR TESTIMONY AND RECOMMENDATIONS?

4 A

- 5 • Staff proposes to combine high and low cost districts without regard for the  
6 wide variations in costs. I oppose Staff’s proposal because it creates large  
7 subsidies and the advantage of below-cost rates for select customers based on  
8 location. At the same time, there would be large subsidies provided by the  
9 lower-cost districts, thereby creating disadvantages based on location.
- 10 • The cost of the services provided should be the primary determinant of rates.
- 11 • As an alternative to the Staff proposal, the seven largest districts should  
12 continue to pay rates based on the cost of providing services in each district.  
13 The smaller districts could be combined into a hybrid district with four rate  
14 levels. The four rate levels provide a mechanism for combining the smaller  
15 districts into groups with similar costs and a combined “hybrid” rate level.  
16 Under this form of consolidation, the equity of cost-based rates is preserved to  
17 the extent possible.
- 18 • The increase in revenue requirements for the small districts taken as a group  
19 (the hybrid district) is 80% at the Staff mid-level return. Given such a large  
20 increase, I suggest a phase-in. The purpose is simply to mitigate the impact of  
21 such a large increase.
- 22 • A case can be made for MAWC to simply forego the revenues not collected in  
23 year one of the phase-in. MAWC appears to have embarked on system  
24 expansion without regard to its ability to collect revenues from the customers  
25 for whom the costs are being incurred. Thus they may be culpable for the  
26 problem.
- 27 • Another alternative is to collect the revenues forgone in year one of the phase-  
28 in over a three-year amortization. However, given the role of MAWC in  
29 creating the problem, as it made acquisitions in pursuit of growth, it is  
30 unreasonable to saddle existing customers with subsidies to accommodate  
31 MAWC growth by acquisition. The growth was pursued with apparent disregard  
32 for the impacts of the ensuing cost-based rates on customers.
- 33 • So long as the district-specific cost-based rates are continued for the larger  
34 districts, explicitly including the St. Joseph District, my clients are not opposed  
35 to just and reasonable rates that may be created by consolidating some or all  
36 of the other districts that have similar costs and rates. The key is to design  
37 rates that are reasonably cost-based for all of the customers that would be a  
38 part of any limited rate consolidation.

1 COMPARATIVE ANALYSIS OF THE HYBRID DISTRICTS SUGGESTED BY STAFF

2 Q FIRST, ARE THERE REASONS FOR THE DIFFERENCES IN COST AMONG THE EXISTING  
3 DISTRICTS?

4 A Yes. Many factors can influence costs. Some of the important considerations are the  
5 source of water/cost of treatment, the soil, topography, the amount capacity/excess  
6 capacity, and the size of the district. These considerations result in varying amounts  
7 of investment and expense to provide service. The wide variations in revenues per  
8 gallon delivered provide evidence of the combined effects of these factors.

9 Q DID STAFF PROVIDE AN ANALYSIS IN AN ATTEMPT TO QUANTITATIVELY  
10 DEMONSTRATE THAT SOME OR ALL OF THESE IMPORTANT CHARACTERISTICS ARE  
11 SIMILAR FOR THE DISTRICTS THAT COMPRISE THEIR SUGGESTED HYBRID DISTRICTS?

12 A Apparently not. I saw nothing quantitative in the Staff testimony.

13 Q HOW DO THE RESIDENTIAL RATES COMPARE AMONG THE DISTRICTS?

14 A To assess the relative residential rate levels I computed the average rate revenue per  
15 1000 gallons for each district. Updated Schedule 3 page 2 in my direct testimony  
16 provides the average residential rate revenue per 1000 gallons for each district under  
17 present rates. There is a wide range with St. Louis Metro on the low end and  
18 Brunswick on the high end.

19 Rebuttal Schedule 1 shows similar figures assuming the mid-level increase  
20 proposed by Staff is approved. Within each of Staff's suggested hybrid districts the  
21 variation from low to high is over four to one.

1 Q WOULD THERE BE SIGNIFICANT SUBSIDIES FLOWING AMONG THE DISTRICTS  
2 COMPRISING EACH OF STAFF'S SUGGESTED HYBRID DISTRICTS?

3 A Yes. Since districts with widely divergent costs would be combined, the lower cost  
4 districts would subsidize the higher cost districts. This would create a burden for the  
5 lower cost districts that would be a disadvantage based on location. Conversely,  
6 districts with higher costs would enjoy rates at a deep discount compared to costs.  
7 This would provide the relative advantage of subsidized below-cost rates based on  
8 location.

9 **COST-BASED DISTRICT CONSOLIDATION**

10 Q CAN YOU SUGGEST AN ALTERNATIVE TO STAFF'S CONSOLIDATION OF DISTRICTS?

11 A As explained in my direct testimony, rates should primarily reflect costs and any  
12 variations should be limited. I recommended cost-based district-specific prices.  
13 However, I also explained that limited variations are sometimes warranted for  
14 practical considerations, although that does not detract from the importance of a  
15 policy in support of cost-based rates for each district. Of course, one would expect  
16 some evidence of a practical necessity to vary from cost-based rates and essentially  
17 none has been offered.

18 Given these considerations, I have prepared an alternative hybrid rate  
19 consolidation recommendation. As a starting point I recommend the continuation of  
20 district-specific rates for the seven largest districts. I recommend the consolidation of  
21 the remaining districts, each of which is much smaller, into a consolidated hybrid  
22 district with 4 rate levels.

23 The overall cost-based increase for the consolidated hybrid district (again  
24 assuming Staff's mid-level return for illustration) would be 80%. Given such a sizeable



1 increase on top of the changes engendered by the consolidation, and also on top of  
2 rates that in several districts that are already relatively high, I recommend a phase-in  
3 to the higher rate level.

4 **Q PLEASE EXPLAIN HOW YOU DEVELOPED THE FOUR RATE LEVELS WITHIN THE**  
5 **HYBRID DISTRICT.**

6 **A** I combined the districts based on present and proposed revenue per 1000 gallons,  
7 according to the Staff's present revenues, usage, and required revenues at Staff's mid-  
8 level return. Each rate level is developed by combining the candidate small districts  
9 that are close to one another in unit costs. While there are many sources of cost  
10 variations, the focus on the average unit costs of the districts leads to combinations  
11 where the net impact of the cost variations on rates is less.

12 **Q PLEASE EXPLAIN HOW THE PHASE-IN TO COST-BASED PRICE LEVELS IS STRUCTURED.**

13 **A** Given the 80% overall increase for the hybrid district under the Staff case, I structured  
14 a two step phase-in. While the increases vary because the costs vary, the increase for  
15 the districts at each price level has a first-year increase that is roughly one half of the  
16 cost-based total increase.

17 For the second year my goal was to achieve rate levels consistent with the  
18 underlying costs. Also, I amortized the first-year reduction from cost over three years  
19 and added that to the second-year cost levels.

20 **Q DOES YOUR RECOMMENDATION ACHIEVE THE GOAL OF A COST-BASED RATE LEVEL**  
21 **IN YEAR TWO?**

22 **A** Not entirely. In consideration of impact and the relatively high rates in the Brunswick

1 district, I limited the total increase in the level 4 rate to a level designed to produce a  
2 cumulative increase of 37% for Brunswick customers.

3 Q WHAT IS THE VARIATION BETWEEN THE REVENUE REQUIREMENT AND REVENUES  
4 PRODUCED UNDER YEAR 1 OF THE PHASE-IN?

5 A It is \$762,000. This is the sum of the shortfalls at each of the four rate levels in the  
6 hybrid district.

7 Q WHAT SHOULD BE DONE TO ADDRESS THE SHORTFALL?

8 A There are several possibilities. First, one could reach the conclusion that MAWC  
9 should have the burden. It has provided no evidence that it ever considered whether  
10 or not it would be able to increase rates to the newly acquired customers in a manner  
11 that would provide cost recovery. In fact, it did not answer the specific question  
12 posed in a data request as to whether or not it assumed it would recover the costs  
13 incurred on behalf of these customers from the customers. Instead, it simply stated  
14 that it expected to recover the costs. That is a dubious assumption in consideration of  
15 the district-specific pricing that has been the norm. Nevertheless, since that is its  
16 choice, MAWC should bear the consequences if management incorrectly assumed that  
17 existing customers could be called upon to subsidize its system expansion.

18 Another possibility is that an accommodation might be worked in a settlement.  
19 While there have been settlements in the past, that result is unpredictable.

20 Q WHAT IS THE SHORTFALL IN SUBSEQUENT YEARS GIVEN THAT THE LEVEL 4 RATE IS  
21 CAPPED AT A LEVEL BELOW THE COST OF SERVICE?

22 A It is approximately zero. The extra revenues provided by the 3-year amortization of

1 the year one shortfall are sufficient to offset the subsidy to the customers that would  
2 be served at level 4 prices in the hybrid district. Of course, the revenues cannot be  
3 counted both as an amortization of the year 1 phase in and also as funds to offset to  
4 Brunswick. There is a shortfall due to the ongoing subsidy of price level 4.

5 **RATE CHANGES FOR CUSTOMERS IN THE HYBRID DISTRICT**

6 Q PLEASE PROVIDE THE DETAILS OF THE RATE CHANGES YOU RECOMMEND.

7 A The details are set forth on Rebuttal Schedule 1. The district-specific cost-based  
8 increases for the 7 largest districts are shown on lines 1 through 7, assuming for  
9 illustration the Staff revenue requirements at the mid-level return.

10 The consolidated price levels in the hybrid district are shown on lines 9 through  
11 36 along with the current and proposed average revenues per 1000 gallons and the  
12 increases.

13 Q WHAT ARE THE INCREASES YOU PROPOSE UNDER THE PHASE-IN FOR THE HYBRID  
14 DISTRICT?

15 A The average increase for customers at the level 1 rate is 25.0% for year 1 and 42.7%  
16 for year 2. Since the consolidation to a single level 1 price occurs in year 1, there is a  
17 range of increases. The lowest is 16.1% for the Roark customers and the highest is  
18 44.0% for the Loma Linda customers. In year 2 all receive the same 42.7% increase.

19 The average increase for customers at the level 2 rate is 32.7% for year 1 and  
20 45.3% for year 2. The lowest Year 1 increase is 7.0% for the Lake Taneycomo  
21 customers and the highest is 46% for the Riverside Estates customers. In year 2 all  
22 receive the same 45.3% increase.

23 The average increase for customers at the level 3 rate is 26.1% for year 1 and

1 22.6% for year 2. The lowest Year 1 increase is 0.1% for the Spring Valley customers  
2 and the highest is 31.0% for the Warren County customers. In year 2 all receive the  
3 same 22.6% increase.

4 The average increase for customers at the level 4 rate is 16.5% for year 1 and  
5 36.3% for year 2. The lowest Year 1 increase is 0.5% for the Brunswick customers and  
6 the highest is 37.0% for the Ozark Mountain customers. In year 2 all receive the same  
7 36.3% increase.

## 8 CONCLUSIONS

9 Q PLEASE SUMMARIZE YOUR CONCLUSIONS.

10 A Simply put, the rates among and within the districts must reflect the cost of services  
11 provided. My primary recommendation continues to be cost-based district-specific  
12 prices.

13 The hybrid districts proposed by Staff combine districts that have widely  
14 disparate costs. The wide disparities create inappropriate subsidies. Instead, district-  
15 specific prices should be continued for the large districts while smaller districts may  
16 be consolidated according to their cost levels. This will substantially reduce the  
17 number of districts while preserving a better cost basis for each of the rates. Also,  
18 the inter-district subsidies are minimized with the better cost basis.

19 In consideration of the large increases for the smaller districts, I recommend a  
20 two-step phase-in of the higher rates for customers in the hybrid district. Since MAWC  
21 bears the responsibility for providing the services at costs consistent with just and  
22 reasonable rates, it may be appropriate for them to absorb the shortfall in the first  
23 year. Once that is accommodated, the amortization of the year one revenues forgone

1 is sufficient to fund the ongoing subsidy for three years. By that time there will need  
2 to be another rate case to address rate levels post phase-in.

3 Q DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

4 A Yes it does.

Missouri American Water Company  
Missouri PSC Docket No. WR-2011-0337

District Specific Pricing for Large Districts and  
Hybrid Consolidation of Small District and Rate Phase In

Line	Water District / Existing District (A)	Residential											
		Limit/ Spread Factors (B)	Staff Present Rate Revenue (C)	Rate Revenue Assuming Staff Middle Return (D)	Usage (1000 Gallons) (E)	Present Revenue per 1000 Gal (F)	COS Percent Increase (G)	COS Revenue per 1000 Gal (H)	Rate Revenue per 1000 Gal (I)	Year 1 Increases		Year 2 Increases	
										Amount per 1000 Gal (J)	Percent (K)	Amount per 1000 Gal (L)	Percent (M)
1	St. Louis Metro		\$ 116,663,161	\$ 122,316,973	29,709,995	\$3.93	4.8%	\$4.12		\$0.19	4.8%		
2	St. Joseph		\$ 10,187,047	\$ 11,451,057	1,618,976	\$6.29	12.4%	\$7.07		\$0.78	12.4%		
3	Joplin		\$ 9,581,409	\$ 10,388,514	1,305,210	\$7.34	8.4%	\$7.96		\$0.62	8.4%		
4	Jefferson City		\$ 3,132,723	\$ 4,539,079	478,852	\$6.54	44.9%	\$9.48		\$2.94	44.9%		
5	Parkville		\$ 3,581,300	\$ 4,163,854	417,584	\$8.58	16.3%	\$9.97		\$1.40	16.3%		
6	Mexico		\$ 1,747,507	\$ 2,107,452	209,763	\$8.33	20.6%	\$10.05		\$1.72	20.6%		
7	Warrensburg		\$ 2,004,091	\$ 2,107,381	347,320	\$5.77	5.2%	\$6.07		\$0.30	5.2%		
8	Subtotal Large Districts		\$ 146,897,238	\$ 157,074,310	34,087,699	\$4.31	6.9%	\$4.61		\$0.30	6.9%		
<b>Consolidated Hybrid District</b>													
9	Loma Linda	44.0%	\$ 94,591	\$ 131,584	26,355	\$3.59	39.1%	\$4.99		\$1.58	44.0%		
10	Roark		\$ 165,056	\$ 254,123	37,076	\$4.45	54.0%	\$6.85		\$0.72	16.1%		
11	Maplewood Lake Carmel		\$ 91,300	\$ 193,771	21,479	\$4.25	112.2%	\$9.02		\$0.92	21.6%		
12	Subtotal Group 1		\$ 350,947	\$ 579,479	84,910	\$4.13	65.1%	\$6.82					
13	Adjustment			(140,641)									
14	Hybrid District Level 1 Year 1			438,838		\$0.66			\$5.17	\$1.04	25.0%		
15	Hybrid District Level 1 Year 2	33.3%		626,359					\$7.38			\$2.21	42.7%
16	Riverside Estates	46.0%	\$ 112,757	\$ 207,642	16,401	\$6.88	84.1%	\$12.66		\$3.16	46.0%		
17	Lake Taneycomo		\$ 58,363	\$ 96,490	6,219	\$9.38	65.3%	\$15.52		\$0.65	7.0%		
18	Subtotal Group 2		171,120	304,132	22,620	\$7.57	77.7%	\$13.45					
19	Adjustment			(77,084)									
20	Hybrid District Level 2 Year 1			227,048		\$2.51			\$10.04	\$2.47	32.7%		
21	Hybrid District Level 2 Year 2	33.3%		329,827		\$6.90			\$14.58			\$4.54	45.3%
22	Warren County	31.0%	\$ 330,754	\$ 496,005	29,611	\$11.17	50.0%	\$16.75		\$3.46	31.0%		
23	Spring Valley	0.1%	62,189	83,533	4,253	\$14.62	34.3%	\$19.64		\$0.01	0.1%		
24	Subtotal Group 3		\$ 392,943	\$ 579,538	33,864	\$11.60	47.5%	\$17.11					
25	Adjustment			(84,019)									
26	Hybrid District Level 3 Year 1			495,519		\$3.45			\$14.63	\$3.03	26.1%		
27	Hybrid District Level 3 Year 2	33.3%		607,544		\$4.04			\$17.94			\$3.31	22.6%
28	Ozark Mountain	37.0%	\$ 192,218	\$ 372,999	14,412	\$13.34	94.0%	\$25.88		\$4.93	37.0%		
29	Lakewood Manor		\$ 23,063	\$ 50,458	1,448	\$15.92	118.8%	\$34.83		\$2.35	14.8%		
30	Brunswick		\$ 243,464	\$ 571,551	13,396	\$18.17	134.8%	\$42.67		\$0.10	0.5%		
31	Subtotal Group 4		\$ 458,745	\$ 995,008	29,257	\$15.68	116.9%	\$34.01					
32	Adjustment			(460,432)									
33	Hybrid District Level 4 Year 1			534,576		\$4.84			\$18.27	\$2.59	16.5%		
34	Hybrid District Level 4 Year 2			728,459		\$4.08			\$24.90			\$6.63	36.3%
35	Adjustment Year 2			(266,549)									
36	Brunswick/Level 4 Cap	37.0%				\$18.17							
38	White Branch Water		\$ 83,189	\$ 125,702	-		51.1%	-				51.1%	
39	Rankin Acres		\$ 51,683	\$ 69,452	-		34.4%	-				34.4%	
40	Subtotal Group Unmetered		\$ 134,872	\$ 195,154									
41	Hybrid District Total		\$ 1,508,627	\$ 2,653,311									
42	Year 1 Adjustment Total			(762,176)									
43	Hybrid District Year 1 Revenue			1,891,135									
44	Year 2 Adjustment Total			(12,491)									
45	Hybrid District Year 2 Revenue			2,640,820									
46	Total Revenue Requirement		\$ 148,405,865	\$ 159,727,621	7.63%								
47	Year 1 Revenue			\$ 158,965,445	7.12%								
48	Year 2 Revenue			\$ 159,715,130	7.62%								