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Sponsoring Party: Missouri-American Water Company
Case No.: WR-2003-0500
Date: December 5, 2003

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2003-0500

Surrebuttal Testimony of

JOHN J. SPANOS

on Behalf of

MISSOURI-AMERICAN WATER COMPANY

Jefferson City, Missouri

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

IN THE MATTER OF MISSOURI-AMERICAN	)	CASE NO. WR-2003-0500
WATER COMPANY FOR AUTHORITY TO FILE	)	
TARIFFS REFLECTING INCREASED RATES	)	
FOR WATER SERVICE	)	
	)	

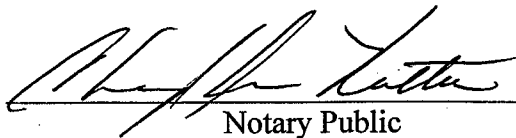
AFFIDAVIT OF JOHN J. SPANOS

John J. Spanos, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying surrebuttal testimony entitled "Surrebuttal Testimony of John J. Spanos"; that said surrebuttal testimony was prepared by him and/or under his direction and supervision; that if inquiries were made as to the facts in said surrebuttal testimony, he would respond as therein set forth; and that the aforesaid surrebuttal testimony is true and correct to the best of his knowledge.



JOHN J. SPANOS

Commonwealth of Pennsylvania
County of Cumberland
SUBSCRIBED and sworn to
before me this 1st day of DECEMBER 2003.



Notary Public

My commission expires:

NOTARIAL SEAL CHERYL ANN RUTTER, Notary Public Camp Hill Boro, Cumberland County My Commission Expires Feb. 20, 2007
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1 **1. Q. Please state your name and address.**

2 A. John J. Spanos. My business address is 207 Senate Avenue, Camp Hill,
3 Pennsylvania.

4 **2. Q. Have you previously submitted testimony in this proceeding?**

5 A. Yes, I have. My direct testimony and Schedule JJS-1 were submitted with
6 the rate filing of Missouri-American Water Company (referred to herein as
7 “the Company”) on May 19, 2003, and my rebuttal testimony and Schedules
8 JJS-2, JJS-3 and JJS-4 were submitted on November 10, 2003.

9 **3. Q. What is the purpose of your surrebuttal testimony?**

10 A. The purpose of my surrebuttal testimony is to respond to the rebuttal
11 testimony of Gregory E. Macias of the Missouri Public Service Commission
12 Staff.

13 **4. Q. What are the subjects of your surrebuttal testimony?**

14 A. The subjects of my surrebuttal testimony are cost of removal and gross
15 salvage, remaining life and average service lives.

16 **COST OF REMOVAL AND GROSS SALVAGE**

17 **5. Q. On page 3 of his rebuttal testimony, Mr. Macias disagrees with the**
18 **collection of “future, unknown, cost of removal and gross salvage...”**
19 **Do you have concerns with the fact that such amounts will occur in the**
20 **future and are presently unknown?**

21 A. No, I do not. The cost of removal less gross salvage (aka net salvage) for an
22 asset are not known during its life. It is only after the asset has been retired
23 that these amounts are known. However, this is not a valid reason for a
24 depreciation analyst to ignore this component of an asset’s service value

1 when estimating depreciation expense. The only element of depreciation
2 expense that is not an estimate is the original cost of the asset. Both its
3 service life and its net salvage value require estimation because the exact
4 values are not known until the asset is retired. Mr. Macias has not suggested
5 that we expense additions of assets because their service lives are unknown.
6 Neither, then, should he recommend that we ignore future net salvage.
7 Valid, time-tested techniques have been developed for estimating both
8 service life and net salvage. Periodic studies allow for the incorporation of
9 additional information regarding experienced lives and net salvage and
10 enable the continual refinement of the estimates. Depreciation systems
11 incorporate correcting or true-up mechanisms to insure that the service value,
12 i.e., the original cost less net salvage, is recovered, no more, no less. These
13 techniques and systems support the incorporation of net salvage value in the
14 determination of depreciation expense, consistent with this Commission's
15 definition of depreciation. The fact that estimation is required is not a valid
16 reason for excluding net salvage from depreciation expense.

17 **6. Q. Mr. Macias also disagrees with your "method of calculating future cost**
18 **of removal and gross salvage." (Macias Rebuttal, page 3, lines 12 and**
19 **13). Do you calculate future cost of removal and salvage?**

20 A. No, I do not. I estimate the future cost of removal and salvage based on
21 judgment that incorporates analyses of historical data, knowledge of
22 management's plans and operating policies, and net salvage estimates from
23 previous studies of this Company and other water companies.

1 **7. Q. On pages 3 and 4, Mr. Macias criticizes your historical analyses of net**
2 **salvage data because the “method compares the original cost of plant**
3 **that was placed in service between the years 1880 and 2002, to the cost**
4 **of removal and gross salvage experienced for the years 1987 to 2002.”**
5 **(Macias Rebuttal, page 4, lines 6 through 8). Is this a valid criticism?**

6 A. No, it is not. It is appropriate to compare the current cost of removal and gross
7 salvage to the original cost expended some years ago, because we are
8 estimating the future cost of removal and gross salvage that will be related to
9 the current original costs. The net salvage experienced for an asset occurs at
10 the end of its life at the price level in effect at that time. The original cost of an
11 asset occurs at the beginning of its life at the price level in effect at that time.
12 The lives of the Company's assets are generally quite long, averaging
13 approximately 50 years. Thus, it is inevitable that the net salvage of each
14 asset will be at a price level that is different than the price level of its original
15 cost. For this reason, the development of historical indications of net salvage
16 as a percent of original cost from relatively current net salvage as related to
17 original costs that were incurred some time ago is consistent with the estimate
18 that is required.

19 **8. Q. Mr. Macias references assets that are 122 years old on page 4 of his**
20 **testimony. Is this typical of the age of retirements included in your**
21 **analyses of net salvage?**

22 A. No, it is not. As I discussed on pages 12 through 14 of my rebuttal testimony,
23 the average age of the retired assets included in the analyses of net salvage is
24 much less than the average life of the assets. For example, the average age

1 of transmission and distribution mains retired during the period 1987 through
2 2002 was 24.1 years as compared to my average life estimate of 90 years.
3 Although there are retirements as old as 122, the large majority are much
4 younger as evidenced by the average of 24.1 years.

5 **9. Q. What is the implication for future net salvage as a percent of original**
6 **cost as compared to the percents reflected in the historical analyses?**

7 A. Future net salvage as a percent of original cost will likely be more negative
8 than the percents reflected in the historical analyses as a result of the longer
9 average period between the installation and retirement of the assets. There
10 are four factors that affect the relationship of net salvage to original cost: (1)
11 the period of time between installation and removal, (2) the average rate of
12 inflation during this period, (3) additional requirements related to the removal
13 of assets such as environmental regulations, and (4) technological advances
14 that decrease the unit costs of removing assets. As already indicated, the
15 period of time between installation and removal will be greater. All other things
16 being equal, this would result in cost of removal that is a greater percent of the
17 original cost than is reflected in the historical analyses. Although the rate of
18 inflation does vary, inflation will not go away. Inflation averaged around 3
19 percent during the period that the retired assets were in service. An
20 expectation of a similar average level in the future is reasonable. Increasing
21 environmental regulations and technological advances work against one
22 another with respect to their impact of cost of removal as a percent of original
23 cost. Historically, increasing regulation has been outpacing improvements in
24 technology. However, the estimates of future net salvage that I used reflect

1 net salvage values as a percent of original cost that approximate or are less
2 negative than those experienced during the period 1987 through 2002. Such
3 estimates, therefore, assume that the change in price level between
4 installation and removal will be about the same or less than those experienced
5 historically. If the change in price level is the same or less and the period of
6 time between installation and removal is longer, then, the inherent assumption
7 is that the rate of inflation will be less or that technological advances will begin
8 to outpace increasing regulations. In either event, the result is a very
9 conservative estimate of the level of future cost of removal.

10 **9. Q. Mr. Macias expresses concern that “this formula is not substantiated by**
11 **empirical evidence...” Do you have empirical evidence to substantiate**
12 **your use of historical indications of net salvage as a basis for estimating**
13 **future net salvage?**

14 A. Yes, I do. The empirical evidence is presented on pages III-121 through III-
15 134 of Schedule JJS-1. The empirical evidence is the continual experience of
16 negative net salvage over the most recent fifteen-year period. Studies
17 conducted during earlier periods would likely have estimated lower levels of
18 cost of removal than were actually experienced during this period. This
19 approach or formula also is presented in several recognized texts on the
20 subject of depreciation.

21 **10.Q. Is it possible that future plant will be abandoned rather than retired as**
22 **suggested by Mr. Macias on page 8, lines 7 through 10?**

23 A. It is possible that certain plant can be abandoned and has been in the past.
24 However, as a part of the Company's obligation to serve, it is more likely in the

1 future that plant will be replaced rather than be abandoned. It is unlikely that
2 environmental or municipal officials will permit the Company to abandon
3 storage tanks, pumping stations or treatment plants. Further, the available
4 space for all types of utilities beneath the streets is limited. Plant is usually
5 removed and, even when it is not, there are still costs incurred related to the
6 retirement of such plant taken from service.

7 **11.Q. On pages 5 and 6 of his rebuttal testimony, Mr. Macias advocates an**
8 **allowance for net salvage based on recent historical costs and argues**
9 **that this approach “reduces the risk that customers will overpay for the**
10 **future, unknown, cost of removal...” Do you agree?**

11 A. Absolutely, not. Although I agree that the risk of current customers overpaying
12 will be reduced by a cost of removal allowance based on recent historical
13 costs, the risk of future customers overpaying is substantially increased. The
14 goal of a sound depreciation policy in a ratemaking setting is to balance the
15 interests of the Company and the customer and to balance the interests of the
16 current generation of customers with those of future generations of customers.
17 The use of estimates of future net salvage along with a depreciation system
18 that includes a correcting mechanism does just that. Both the remaining life
19 technique and the whole life technique with a true-up adjustment insure that
20 the service value, original cost less net salvage, is recovered, no more, no
21 less. This reduces both the risk of the customer overpaying and the risk of the
22 Company underrecovering. The incorporation of future net salvage in the
23 determination of depreciation expense fairly allocated such costs over the life
24 of the related asset. The result is that customers that benefit from the asset

1 pay for its costs. The use of recent historical costs as a basis for the net
2 salvage allowance unfairly postpones the recovery of costs to future
3 generations of customers. I have already discussed this issue in depth in my
4 rebuttal testimony on pages 4 through 9.

5 **12.Q. On page 6, lines 11 and 12, Mr. Macias states "There is no indication that**
6 **the Company is retaining the customer-supplied cash until the time it will**
7 **be needed." Is the source of cash for future costs of removal a concern**
8 **of yours?**

9 A. No, it is not. First, the dollars recorded as accruals for future net salvage are
10 reflected in the depreciation reserve and deducted from rate base. If Mr.
11 Macias is concerned that the Company will in some way seek to double
12 recover such amounts, the record in the reserve would preclude it. Second,
13 just as the current expenditures for cost of removal are a small percent of the
14 total expenditures, additions plus cost of removal, so to the future costs of
15 removal will represent a small percent of total expenditures. The ability of the
16 Company to finance its total expenditures, including both its additions and cost
17 of removal, should not be a concern. Permitting the continuation of the
18 accrual for future net salvage in depreciation expense will help to insure that
19 costs of such financing are minimized as compared to the adoption of the
20 approach endorsed by Mr. Macias.

21 **13.Q. Are the current capital expenditures in excess of the annual depreciation**
22 **expense which includes a component of net salvage, therefore,**
23 **eliminating any thought of excess cash?**

24 A. Yes, the following table sets forth net capital expenditures and cost of removal

for the past five years, 1998-2002, as compared to depreciation expense for the same period.

DOLLARS IN THOUSANDS

<u>Year</u>	<u>Net Capital Expenditures</u>	<u>Net Salvage</u>	<u>Annual Depreciation Expense</u>
1998	\$46,516	\$ 946	\$17,189
1999	77,828	114	18,084
2000	39,578	1,158	20,292
2001	35,761	549	22,509
2002	45,490	(25)	24,108

As shown by the table, the average cash requirements (net capital expenditures plus net salvage) for the 5-year period have averaged \$49.583 million and the average depreciation expense for the same period was \$20.436 million. Note the amounts on the table are in thousands of dollars and reflect total Company amounts. Jefferson City was not acquired until April 2000, therefore, the results of 1998 and 1999 do not reflect any Jefferson City amounts.

REMAINING LIFE

14.Q. Mr. Macias objects to your use of the remaining life technique or method of adjustment because it “has future, unknown, cost of removal and gross salvage incorporated into the depreciation rate” (Macias Rebuttal, page 6, lines 17 and 18), “there is an adjustment for the accrued reserve inherent in the remaining life formula, which the Staff does not believe is warranted at this time” (Macias Rebuttal, page 6, lines 21 and 22) and

1 **“the Company has not provided any reasons for switching from the**
2 **whole life technique” (Macias Rebuttal, page 6, line 22 through page 7,**
3 **line 1). Please address Mr. Macias’ objections.**

4 A. I have already addressed in both my rebuttal testimony and my surrebuttal
5 testimony above the appropriateness of incorporating an estimate of future net
6 salvage in the depreciation rate, whether it is a whole life rate or a remaining
7 life rate.

8 The bases for Mr. Macias’ second objection, no adjustment to the
9 accrued reserve is required at this time, are (1) once again, his elimination of
10 the recovery of future net salvage from depreciation and (2) his concerns with
11 the Company’s data. I addressed his concerns regarding the data on pages
12 22 through 26 of my rebuttal testimony. The absence of retirements prior to
13 certain years relates both to the establishment of continuing property records
14 subsequent to the start-up of the Company and changes in property record
15 systems over the years. Their absence does not preclude either the conduct
16 of statistical analyses of service life or the calculation of depreciation, as I
17 explained on pages 22 through 24 of my rebuttal testimony. The current
18 surviving original costs by year installed as used in the calculations of
19 remaining life and theoretical accrued depreciation are accurate. The
20 theoretical reserve and remaining lives that result from the use of the data are
21 reasonable and are appropriate for use in the determination of a remaining life
22 adjustment to the whole life rate.

23 The third objection relates to the absence of a rationale for the change
24 from whole life depreciation with a true-up amount to remaining life

1 depreciation. Both of these methods incorporate a whole life amount and an
2 adjustment of the variance between the book and theoretical depreciation
3 reserves. Whole life with a true-up adjustment uses a fixed period of time
4 such as ten years for the adjustment. The remaining life method uses the
5 remaining life of the assets, typically a longer period of time. Thus, the only
6 change that has been made is the period of adjustment. The Commission has
7 previously approved both methods. In the whole life method with true-up
8 adjustments, a record must be kept of the status of each variance, not only for
9 determining total depreciation expense, but also for determining the book
10 depreciation reserve to be used in determining whether additional variances
11 have developed. The remaining life method continually adjusts for such
12 variances and, therefore, has greater simplicity and is the most widely used
13 method of adjustment.

14 15 **AVERAGE SERVICE LIVES**

16 **15.Q. Mr. Macias disagrees with your estimated average service lives because**
17 **of the condition of the data base. Is this a valid basis for disagreement?**

18 A. No, it is not. As explained on pages 22 through 26 of my rebuttal testimony,
19 the data base for the combined districts that I used in my study is both
20 accurate and adequate. Mr. Macias' decision to use files for the individual
21 districts and his presumption that the absence of retirements from years prior
22 to a certain date represent a problem have led him to an erroneous conclusion
23 regarding my service lives. The average service lives that I have estimated
24 are based on historical data for the districts to which they will be applied. Mr.

1 Macias has instead used the results of analyses of the St. Louis County data.
2 Not only is this inappropriate, but the estimates made by Mr. Macias are
3 unreasonable as he relied almost entirely on statistical fits of the entire original
4 survivor curve, and does not consider other factors which will impact the
5 average service life.

6 **16.Q. You mention the fitting of original survivor curves. On page 8 and 9 of**
7 **his rebuttal, Mr. Macias criticizes the manner in which you have**
8 **presented the original survivor curves in your depreciation study report.**
9 **Please comment.**

10 A. Mr. Macias' complaint is that the entire original survivor curve is not plotted on
11 the charts in my report. It has been the practice of my firm to present only the
12 significant portion of the original survivor curve on the chart for many years.
13 This has included previous studies submitted to this Commission. This
14 concept also has been discussed with the Commission staff on a number of
15 occasions. Further, it must be noted that the entire original survivor curve is
16 presented in tabular form in the original life table that immediately follows the
17 chart and is available to any for an independent judgment as to the portion of
18 the curve that should be used. The purpose of omitting the insignificant points
19 from the graphical presentation of the smooth and original survivor curves is to
20 portray only that portion of the curve that was developed from sufficient data
21 and, therefore, used in the fitting of the Iowa survivor curve to the original
22 survivor curve.

23 **17.Q. What do you mean by the significant portion of the original survivor**
24 **curve?**

1 A. The significant portion of the original survivor curve is those percents surviving
2 that have been developed from sufficient plant exposed to retirement. The
3 percent surviving at each age is derived from the percent surviving at the prior
4 age and the rate of retirement during that age interval. If the plant exposed to
5 retirement from which the rate of retirement is derived does not represent
6 sufficient plant for a statistically significant sample of property, then the
7 resultant retirement rate and all subsequent percents surviving should not be
8 relied on for purposes of forecasting the average life of the account. It is at
9 such a point that I no longer plot the percents surviving of the original survivor
10 curve on the chart.

11 **18.Q. Please use Account 331, Transmission and Distribution Mains, the same**
12 **example used by Mr. Macias, to describe your consideration of**
13 **significance.**

14 A. The plot of the original and smooth survivor curves for Account 331 is
15 presented on page III-68 of Schedule JJS-1. The entire original life table is
16 presented on pages III-69 through III-72. During the period 1956-2002, plant
17 was exposed to retirements at ages 0 through 122. The amount of plant
18 exposed to retirement at age 0, as shown on page III-69, was \$95,118,969.
19 The amount of plant exposed to retirement at age 122 was \$94,620. Clearly,
20 \$94,620 of transmission and distribution mains is an insufficient basis for
21 developing a forecast of future survivor characteristics and \$95 million is quite
22 sufficient. As I review the plant exposed to retirement and the plant retired by
23 age for this account, it is my judgment that when the plant exposed to
24 retirement decreases to approximately \$1.5 million it has lost significance as a

1 basis for forecasting. Such considerations are an important part of developing
2 historical indications of service life using the retirement rate method. In
3 contrast, Mr. Macias (1) uses the data for an entirely different district and (2)
4 inappropriately relies on the entire original survivor curve resulting in forecasts
5 that rely heavily on insignificant exposures.

6 **19.Q. Please comment on Mr. Macias' recommendation to use surrogate**
7 **depreciation rates for these districts.**

8 A. As I described on pages 17 through 22 of my rebuttal testimony, the use of
9 analyses of St. Louis County data are not appropriate for application to the
10 other districts of the Company. I have conducted a study of the combined
11 data of these districts. As a result, my estimate is based on the actual
12 experience of these districts and a sufficient data base as a result of
13 combining the data for these districts.

14 **20.Q. Does this conclude your surrebuttal testimony?**

15 A. Yes, it does.