| Exhibit No.: |  |
| :---: | :---: |
| Issues: | Security Costs - AAO, Chemicals. |
|  | Insurance Other Than Group, Bad Debt |
|  | Expense, Advertising, Dues and |
|  | Donations, Promotional Items, |
|  | Franchise Tax, Roark Sewer Plant |
|  | Operating Expenses |
| Witness: | Peter J. Thakadiyil |
| Exhibit Type: | Rebuttal |
| Sponsoring Party: Missouri-American Water Company |  |
| Case No.: | WR-2011-0337 |
|  | SR-2011-0338 |
| Date: | January 19, 2012 |

# MISSOURI PUBLIC SERVICE COMMISSION 

CASE NO. WR-2011-0337
CASE NO. SR-2011-0338

## REBUTTAL TESTIMONY <br> OF

## PETER J. THAKADIYIL

ON BEHALF OF

## MISSOURI-AMERICAN WATER COMPANY

## BEFORE THE PUBLIC SERVICE COMMISSION

## OF THE STATE OF MISSOURI

IN THE MATTER OF MISSOURI-AMERICANWATER COMPANY FOR AUTHORITY TOFILE TARIFFS REFLECTING INCREASEDCASE NO. WR-2011-0337
RATES FOR WATER AND SEWER ..... CASE NO. SR-2011-0338

## AFFIDAVIT OF PETER J. THAKADIYIL

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


## State of Missouri

County of St. Louis
SUBSCRIBED and sworn to
Before me this $ノ \rightarrow$ 些 day of $\qquad$ 2012.


Notary Public
My commission expires:

# REBUTTAL TESTIMONY <br> PETER J. THAKADIYIL MISSOURI-AMERICAN WATER COMPANY CASE NO. WR-2011-0337 <br> SR-2011-0338 

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## REBUTTAL TESTIMONY

## PETER J. THAKADIYIL

## WITNESS INTRODUCTION

## Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. Peter J. Thakadiyil, Financial Analyst II for American Water Works Service Company ("Service Company"), 727 Craig Road, St. Louis, Missouri 63141.
Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?
A. Yes, I submitted direct testimony in this proceeding on behalf of MissouriAmerican Water Company ("MAWC" or "Company").

## Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to MIEC witness Collins' testimony concerning chemicals as well as the Staff Report regarding the following issues on behalf of MAWC:

1) Security Costs - AAO;
2) Chemicals;
3) Insurance Other Than Group;
4) Bad Debt Expense;
5) Advertising;
6) Dues and Donations;
7) Promotional Items;
8) Franchise Tax; and,
9) Roark Sewer Plant Operating Expenses.
(1) Security Costs - AAO
Q. WHAT IS THE NATURE OF THE SECURITY COSTS AAO ISSUE?
A. The Company included in rate base the unamortized balance of the regulatory asset associated with security costs. Staff did not include the unamortized balance of the Security AAO in rate base.

## Q. PLEASE BRIEFLY DISCUSS THE SECURITY AAO.

A. In Commission Case No. WO-2002-273, the Commission authorized the Company to defer certain costs associated with security measures taken by the

Company in the aftermath of the September 11, 2001 terrorist attacks. The Company was authorized to defer the costs it incurred during a two-year period ending on September 11, 2003. The Company was also authorized to amortize the costs over a 10 -year period. The Company began amortizing the costs in December 2002, upon receipt of the Commission's Report and Order.

## Q. WHAT IS THE RESULT OF INCLUDING AN ITEM IN RATE BASE IN THE DETERMINATION OF REVENUE REQUIREMENT?

A. Amortization of an asset account provides for the return of the amount expended over a period of time. Inclusion of the unrecovered portion of costs in rate base provides for a return on that investment. Recovery of only the amortization over a long period of time does not allow a Company to be made whole. Not only does the Company receive no return on its investment, the recovery through amortization over a long period of time returns the Company's investment in dollars that are less valuable than when they were invested.

## Q. DO YOU BELIEVE THAT THE COMPANY SHOULD BE AFFORDED RATE base treatment for the unamortized balance of the REGULATORY ASSET FOR SECURITY COSTS?

A. Yes. The Company incurred the costs to provide security to its production and distribution systems, its offices, its customers, and its employees. The sole result of this investment of capital was the continued provision of safe and adequate service to MAWC's customers, as the security expenditures were made to protect our customers and the assets that serve them. Therefore, rate base treatment of the unamortized balance is appropriate. Just because costs are treated on the balance sheet as deferred items rather than as plant investment is no reason for different treatment in terms of allowing the Company to earn a fair return on the money it has invested. Capital dollars were invested in security measures for the benefit of the system and its customers and the Company should be allowed to earn a return on that capital just as it would have been had the investment been recorded to a plant account. The manner in which an item is treated for accounting purposes should not dictate what is appropriate for recovery.

## Q. WHAT ARE THE ISSUES REGARDING CHEMICAL EXPENSE?

A. One issue is Staff's adjustment to Chemical expense. Staff utilized 2011 chemical prices as the basis for the pro forma adjustment to chemicals. Another issue is MIEC's assertion that historical chemical quantities should not be used in the development of the pro forma chemical expense.

## Q. HOW DID STAFF CALUCLATE THE PRO FORMA ADJUSTMENT TO CHEMICALS?

A. Staff calculated the pro forma adjustment to chemicals by applying 2011 chemical prices to Staff's pro forma system delivery. This methodology is consistent with the Company's calculation of chemical expense.

## Q. DID STAFF UTILIZE THE LATEST AVAILABLE INFORMATION?

A. No. At the time of its filing in June 2011, the Company utilized chemical prices from contracts in effect at that time. Subsequently, new purchase orders have been finalized and are effective. MAWC provided to Staff copies of the purchase orders of chemicals that were accepted by the Company's vendors when Staff was conducting its on-site audit of the Company's books and records on September 28, 2011.

## Q. WHY DO YOU BELIEVE THESE NEW CHEMICAL PRICES SHOULD BE INCLUDED IN THE PRO FORMA ADJUSTMENT?

A. The purchase orders are currently effective and reflect chemical prices that are now fixed, known to occur and are a measurable amount. The Company has provided Staff with supporting documentation and is willing to provide further documentation, if necessary

## Q. WHAT IS THE IMPACT OF INCLUDING CHEMICAL PRICES FROM THE CURRENT PURCHASE ORDERS?

A. The result is an increase of $\$ 100,005$ in chemical expense, which is supported by

Rebuttal Schedule PJT-1.


#### Abstract

Q. PLEASE ADDRESS MIEC'S ISSUE WITH CHEMICAL EXPENSE. A. When calculating the pro forma adjustment to chemicals, the Company and Staff used a three year historical average of chemical quantities per thousand gallons of system delivery and applied this to the pro forma system delivery. MIEC contends that the Company should be using test year quantities per system delivery applied to the pro forma system delivery as the basis for chemical expense for the period when rates in this case will be in effect.


## Q. WHY IS IT NECESSARY TO USE A THREE YEAR AVERAGE OF CHEMICAL QUANTITIES?

A. By using a three year average of chemical quantities, the Company and Staff have appropriately normalized the amount of chemicals used in the test year. Chemical quantities not only depend upon the amount of water treated, but also on the conditions of the water being treated. For example, when there is increased raw water turbidity, the Company will treat the water with more coagulants. The system delivery may still be low, but the amount of chemicals used will be higher than normal. It is therefore necessary to account for the variations in chemical quantities used in the pro forma adjustment in order to reflect a normal year. Illustrated in Rebuttal Schedule PJT-1, the Company has provided an example of chemical quantities that can vary depending on system delivery

## (3) INSURANCE OTHER THAN GROUP

## Q. TO WHAT ASPECT OF THE STAFF REPORT REGARDING INSURANCE OTHER THAN GROUP WOULD YOU LIKE TO RESPOND?

A. The Company has an issue with the Staff's calculation of its level of pro forma Insurance Other Than Group expense. Staff has excluded the allocated cost of the Directors \& Officers ("D \& O") liability coverage in the amount of \$51,624.

## Q. IS D\&O INSURANCE A NECESSARY AND CUSTOMARY BUSINESS EXPENSE FOR MAWC?

A. Yes. Without a policy of insurance to indemnify and defend its Board of Directors and its corporate officers, it would be extremely difficult to recruit qualified persons to serve on a Board of Directors or in the capacity of executive management.

## Q. WHY IS D \& O COVERAGE AN APPROPRIATE AND REASONABLE EXPENSE FOR MAWC?

A. As a publicly traded company, AWW, as well as MAWC's directors and officers are subject to the Securities Exchange Commission (SEC) Act, the Sarbanes Oxley (SOX) Act, and many other federal and state regulations. The SOX Act established new or enhanced standards for all U.S. public company boards, management, and public accounting firms. The SOX Act contains 11 titles, or sections, ranging from additional Corporate Board responsibilities to criminal penalties, and requires the SEC to implement rulings on requirements to comply with the new law. The SOX Act also covers issues such as auditor independence, corporate governance, internal control assessment, and enhanced financial disclosure. Prospective internal and external candidates, who are invited to be a member of a company board, are subject to potential litigation in civil and criminal courts. These many complex and demanding corporate governance obligations are accompanied by potential fines and penalties and possible civil and even criminal liabilities. Any individual taking on such risks will expect and demand insurance coverage for claims that may arise as a result of being in such a position.

## Q. SHOULD D\&O COVERAGE EXPENSE BE INCLUDED IN THE COMPANY'S REVENUE REQUIREMENT?

A. Yes. This type of expense is crucial to the Company's ability to recruit and maintain qualified individuals to serve on its Board of Directors and in the capacity as senior Company officers. These expenses are considered customary, particularly for large, publicly traded corporations.

## (4) BAD DEBT EXPENSE

## Q. WHAT IS THE ISSUE REGARDING BAD DEBT EXPENSE?

A. The Company and Staff used the same methodology to calculate the pro forma, present rate bad debt expense. However, the Company also calculated an adjustment for bad debt expense based on pro forma, proposed rates. This adjustment is necessary to account for the Company's proposed rate increase. Staff chose not to make an adjustment for bad debt expense based on the proposed rate increase.

## Q. PLEASE DESCRIBE THE METHODOLOGY USED TO CALCULATE THE PRO FORMA PRESENT RATE ADJUSTMENT TO BAD DEBT EXPENSE.

A. The Company and Staff calculated a three year average bad debt expense ratio. The ratio is based on net charge-offs divided by billed water revenue. This ratio is then applied to pro forma, present rate revenues.

## Q. IS STAFF BEING CONSISTENT WITH ITS METHODOLOGY OF APPLYING THE BAD DEBT EXPENSE RATIO TO PRO FORMA REVENUES?

A. No. Staff applies the bad debt ratio to present rates, but not to the proposed rates the Company will collect as a result of this case. The regulatory process is designed so that the Company will recover in rates the normalized level of expenses it incurs on a going forward basis. It is illogical for Staff to use revenues in its calculation of bad debt expense if it does not recognize that pro forma revenues will change based on any rate increase arising from this case.

## Q. IS STAFF'S CALCULATION OF BAD DEBT EXPENSE REPRESENTATIVE OF A NORMALIZED LEVEL OF EXPENSE?

A. No. Given the fact that Staff bases its pro forma adjustment on present rates, the level of bad debt expense will be understated because of the lower level of revenues used in the calculation. Staff's level of revenues is not representative of a normalized year, when rates set in this case will be effective, because the rates used in Staff's calculation will no longer be in effect. The bad debt expense ratio should be applied to any rate increase awarded in this case in order to
calculate a normalized level of expense for bad debt.

## Q. WHAT IS THE IMPACT OF USING PRO FORMA PROPOSED RATES FOR THE CALCULATION OF BAD DEBT EXPENSE?

A. Based on the Staff report, bad debt expense would increase by $\$ 274,274$, if the Company's rate increase was approved as filed.

## (5) ADVERTISING

## Q. WHAT IS THE ISSUE REGARDING ADVERTISING?

A. Staff has disallowed recovery of the cost of several advertisements that MAWC believes should be allowed.

## Q. WHAT TYPES OF ADVERTISEMENTS MAY BE INCLUDED IN THE COMPANY'S REVENUE REQUIREMENT?

A. According to the Staff Report there are three categories of advertisements recognized by the Commission that can be included in the revenue requirement. The categories that may be included are:

1. General: informational advertising that is useful in the provision of adequate service;
2. Safety: advertising which conveys the ways to safely use electricity [water] and to avoid accidents; and,
3. Promotional: advertising used to encourage or promote the use of electricity [the efficient use of water].

## Q. WHAT TYPES OF ADVERTISEMENTS WERE EXCLUDED?

A. There were several advertisements that were disallowed based on Staff's workpapers. The Company agrees with Staff's interpretation of prior Commission orders that certain advertisements should be disallowed because these ads would be considered Institutional in nature. However, the Company does not agree with Staff's interpretation on ads relating to the Rivermiles

## Public Education Video, Watershed Education and World Bird Community programs.

## Q. WHY SHOULD THESE ADVERTISEMENTS BE INCLUDED IN THE COMPANY'S REVENUE REQUIREMENT?

A. The Rivermiles Public Education Video explains how a water treatment plant works, how water comes to customers' homes and what individuals can do everyday to preserve the quality of water in our rivers. This information increases understanding among customers and supports our provision of service. It is airing, free of charge on PBS stations throughout Missouri. The Watershed and World Bird Community programs advertisements encourage customers to attend our watershed educational programs. These programs educate customers on how to keep rivers clean through simple steps such as recycling and not overusing lawn chemicals etc. These steps to clean sourcewaters will, over time, help to reduce the cost of some chemicals, such as carbon, helping us provide more efficient water treatment. Customers may not realize that fertilizers, herbicides, and pollution can end up in the water system, and that these pollutants can dramatically impact water quality. This information is valuable to customers because they need to understand the role they play in the provision of water service.

For the reasons noted above, the advertising that has been disallowed by Staff should be classified as General Informational and/or Safety and allowed as part of the Company's revenue requirement.

## Q. WHAT IS THE IMPACT OF INCLUDING ADDITIONAL GENERAL AND SAFTEY ADVERTISING?

A. Advertising expense will increase by $\$ 14,288$ with the inclusion of the advertisements for Rivermiles Public Education Video, Watershed Education and World Bird Community programs. The support for this additional advertising expense can be found in Rebuttal Schedule PJT-2.
(6) DUES AND DONATIONS

## Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY REGARDING DUES AND DONATIONS?

A. Staff has excluded some Company Dues and Donations from its Revenue Requirement. The Company believes many of the excluded Dues and Donations provide a benefit to the customer and should therefore be included in its revenue requirement.

## Q. WHAT DUES AND DONATIONS HAVE BEEN EXCLUDED BY STAFF?

A. Staff has excluded donations to local charitable organizations, membership dues to the Missouri Chamber of Commerce, membership dues to rotary clubs, and dues to professional organizations.
Q. DID STAFF DISALLOW ALL DUES AND DONATIONS RELATING TO CHAMBERS OF COMMERCE?
A. No. The Staff allowed recovery of dues for local chamber of commerce organizations, however the Staff disallowed dues for the Missouri Chamber of Commerce.
Q. WHY DID STAFF DISALLOW MISSOURI CHAMBER OF COMMERCE DUES?
A. Staff disallowed these dues because they believe the Missouri Chamber of Commerce dues are duplicative of the dues paid to the local Chamber of Commerce organizations.

## Q. WHY IS IT IMPORTANT FOR MAWC TO BE A MEMBER OF THE MISSOURI CHAMBER OF COMMERCE? <br> A. The Missouri Chamber of Commerce provides companies with the resources to manage their business effectively and efficiently. Members have access to cutting-edge information, leadership and professional development programs, and business products, services and networking opportunities to help a business grow.

## Q. HOW DOES THE STATE CHAMBER DIFFER FROM LOCAL CHAMBERS OF COMMERCE?

A. The two are very different in scope and application. Local chambers are oriented to local communities and the Missouri Chamber is focused on issues impacting the entire state. Therefore the efforts are not duplicative. Local chambers understand the needs and resource availability on a local level and work to improve local working and business conditions. MAWC's participation in local chambers helps enables the Company to stay in touch with and be accessible to its customers. The Missouri Chamber of Commerce deals with larger scope issues and industries such as aerospace, biotechnology and financial services, and is dedicated to creating a stronger environment for business growth and economic development. The State Chamber of Commerce is focused on broader educational and economic development issues that impact the state or region as a whole.
Q. CAN YOU PROVIDE EXAMPLES OF THE EDUCATION AND ECONOMIC DEVELOPMENT PROGRAMS SPONSORED BY THE MISSOURI CHAMBER OF COMMERCE AND EXPLAIN HOW THEY BENEFIT
CUSTOMERS?
A. Yes. The Missouri Chamber of Commerce sponsors the Show Me Scholars Program, Missouri Mathematics and Science Coalition and the Leadership Missouri Program. The Staff has proposed disallowance of the costs of all programs, such as these, that are organized or funded by the State Chamber. The educational programs mentioned help improve existing students' and leaders' productivity, lead to better public awareness, and develop employees and future leaders more capable of dealing with issues of statewide importance. The Show Me Scholars Program's curriculum enables students to better prepare for the future by enrolling in challenging courses. Missouri Mathematics and Science Coalition is a partnership of state businesses, education and community leaders that are developing programs to boost student achievement in math, engineering, technology and science. These students are part of the future workforce that may someday come to work in the field of water production. It is imperative that the students of today have the skills to understand the engineering, math, and science that are necessary to operate these facilities. Founded in 1990, Leadership Missouri allows
participants to take a close look at topics of interest that are important to Missouri, such as transportation, health care, and economic development. Having current leaders that are knowledgeable and who exchange ideas with top state agency personnel can only provide a better understanding of the operation of our state's government and serve to strengthen the recognition of problems and identify solutions important to the state. A more educated workforce and a better understanding of statewide problems strengthen the competitive position of the state and results in growth which, in turn, tends to stabilize utility rates. Growth can stabilize utility rates by spreading fixed costs over a larger customer base. The Missouri Chamber of Commerce also participates in trade missions and works with state agencies to attract and retain industry within the state. Success in that effort would provide growth in manufacturers in the state, and specifically within the MAWC service territory. Such economic development efforts are essential to a viable, growing economy and go hand in hand with financially strong utilities and adequate utility infrastructure.

## Q. WHAT IS THE IMPACT OF INCLUDING MISSOURI CHAMBER OF COMMERCE DUES?

A. Dues and Donations expense will increase by $\$ 11,535$. This amount is supported by Rebuttal Schedule PJT-3.

## (7) PROMOTIONAL ITEMS

## Q. WHAT ISSUE WOULD YOU LIKE TO DISCUSS REGARDING PROMOTIONAL ITEMS?

A. I would like to discuss the Staff's adjustment that limited recovery of costs for promotional items. MAWC believes certain items coded to the Promotional Items Expense should be allowed for recovery. Staff states that these "giveaways" are not necessary for the provision of safe and adequate service and provide no benefit to the ratepayer. However, many of the promotional items carry informational messages to remind water consumers of how to conserve on water usage and how the water systems are impacted by ground pollutants. More efficient water usage by
customers can have a direct impact on their bill. Better education about the impact of ground pollutants such as fertilizers and herbicides on the watersheds may convince consumers to use different methods of treating their lawns. This would have a direct affect on the water quality in rivers and lakes.

## Q. WHY DOES MAWC PURCHASE PROMOTIONAL ITEMS?

A. MAWC purchases inexpensive promotional items as part of its community outreach program. Every year, MAWC employees volunteer their time at river clean-ups, watershed preservation and water-related educational events in collaboration with a variety of community organizations. These community events give our customers an opportunity to talk with and ask questions of a broad cross-section of water company employees. In 2011, Missouri American Water deployed 271 volunteers to 35 community service events across the state. Many of the promotional items that we distribute are educational in nature or are supportive of the environmental mission of these community activities.

## Q. WHAT PROMOTIONAL ITEMS DO YOU CONSIDER TO BE EDUCATIONAL IN NATURE?

A. Staff disallowed the expense for purchasing water bottles. Missouri American Water distributes water bottles at multiple community events. These bottles promote the use of tap water (over bottled water) which helps support our mission and provision of service. The bottles also provide our web address so customers can get additional information from our website.
Q. HOW DO PROMOTIONAL ITEMS HELP SUPPORT THE MISSION OF COMMUNITY OUTREACH EVENTS?
A. The water bottles that are provided as part of the Company's community outreach speak to the environmental stewardship mission of the community events that MAWC supports, largely through our employees' volunteer time. The organizers of these community events are also dedicated to minimizing the environmental impact of their community activities. To achieve this goal, these community groups frequently ask MAWC to contribute water bottles to help keep event volunteers and attendees hydrated, and reduce the need for bottled water.

## Q. WHAT ARE THE ENVIORNMENTAL AND HEALTH CONCERNS WITH PLASTIC WATER BOTTLES?

A. The production of bottled water creates waste, there has been no evidence that bottled water is superior to tap water and most importantly plastic bottles may pose a health risk when chemicals in the plastic break down. For additional information please see the article "Water Bottle Pollution Facts" attached to my Rebuttal testimony as Schedule PJT-4.

## Q. WHAT IS THE IMPACT OF INCLUDING THE PROMOTIONAL ITEMS?

A. Staff has excluded $\$ 36,348$ from the revenue requirement. The Company seeks to include $\$ 14,164$ in the revenue requirement, which is supported by Rebuttal Schedule PJT-5.

## (8) FRANCHISE TAX

## Q. WHAT IS THE ISSUE WITH THE FRANCHISE TAX?

A. Staff based the franchise tax amount on the 2009 assessment of $\$ 415,000$. The pro forma level of franchise tax expense should be based on the latest payment. The Company has already paid $\$ 440,000$ for the 2010 assessment. The Staff should utilize the most current information available and base their pro forma adjustment of franchise tax expense on the 2010 assessment.

## Q. WHAT IS THE IMPACT OF INCLUDING THE 2010 FRANCHISE TAX ASSESSMENT? <br> A. Franchise tax expense will increase by $\$ 25,000$.

## (9) ROARK SEWER PLANT OPERATING EXPENSES

## Q. WHAT IS THE ISSUE WITH ROARK SEWER PLANT OPERATING EXPENSES?

A. In MAWC's filing, the Company included $\$ 393,946$ in chemical expenses related to Roark Sewer. This amount was disallowed by Staff because the Company could not provide support for the chemical expense.

## Q. HAS THE COMPANY DETERMINED THE ORIGIN OF THE ROARK SEWER PLANT OPERATING EXPENSES?

A. Yes. After further research it was learned that the Company misclassified plant operation expense as chemicals. Based on the 2010 Roark Water \& Sewer, Inc. annual report that was filed with the Commission, $\$ 393,946$ of plant operation expense was incurred during the test year. The expenses include contracted maintenance expenses, repairs of sewer plant and utility bills.

## Q. ARE THE TEST YEAR COSTS OF \$393,946 REFLECTIVE OF THE LEVELS OF EXPENSE THAT WILL BE INCURRED DURING THE PERIOD WHEN RATES ARE IN EFFECT?

A. Yes. Roark does not treat its wastewater. The Company pays to have its wastewater treated. The City of Branson treats the wastewater from the Roark sewer district and charges the Company $\$ 4.80$ per thousand gallons for residential service and $\$ 9.23$ per thousand gallons for commercial service. Based on the usage included in the Company's filing for Roark Water, the annualized level of expense for this contracted maintenance service alone would be $\$ 288,739$ or more than $70 \%$ of the total test year plant operation expenses. An ongoing level for all plant operation expense, based on test year expense of $\$ 393,946$, is reasonable.

## Q. WILL THESE EXPENSES CONTINUE WITH MAWC'S OWNERSHIP OF THE ROARK PROPERTIES?

A. Yes. They are normal operating expenses and will continue to be incurred under MAWC ownership.

## Q. WHAT IS YOUR RECOMMENDATION REGARDING ROARK SEWER PLANT OPERATING EXPENSES?

A. Staff recognized that these costs were recorded in the wrong expense account and have properly reduced chemical expenses. However, Staff has inappropriately assumed that no plant operation expense will be incurred in the future. The Staff should reclassify the expenses in their respective accounts and allow the Company recovery of plant operation expense in the amount of $\$ 393,946$.

2 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?
3 A. Yes.

| District | Part \# / Remark | Part Description | Units | Expense | System Delivery | Unit/Sys Del |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1702 | 170A-BULK | Ammonia - Aqua,19\%-Bulk | 2,133,698 | 199,332 | 59,312,310 | 0.03597 |
|  | 170A-BULK | Ammonia - Aqua,19\%-Bulk | 435,264 | 40,776 | 59,312,310 | 0.00734 |
|  | 180C-100LB | Calcium Hypo,65\%-100LB | 4,750 | 7,879 | 59,312,310 | 0.00008 |
|  | 200A-40LB | Carbon - PAC,Lignite-40LB | 78,355 | 60,228 | 59,312,310 | 0.00132 |
|  | 200A-40LB | Carbon - PAC,Lignite-40LB | 68,057 | 56,132 | 59,312,310 | 0.00115 |
|  | 200A-BULK | Carbon - PAC,Lignite-Bulk | 254,989 | 168,756 | 59,312,310 | 0.00430 |
|  | 200A-BULK | Carbon - PAC,Lignite-Bulk | 692,549 | 464,657 | 59,312,310 | 0.01168 |
|  | 220A-2000LB | Chlorine ,100\%-2000LB | 1,730,342 | 383,245 | 59,312,310 | 0.02917 |
|  | 230A-50LB | Copper Sulfate,100\%-50LB | 6,100 | 10,416 | 59,312,310 | 0.00010 |
|  | 230A-50LB | Copper Sulfate,100\%-50LB | 3,375 | 6,696 | 59,312,310 | 0.00006 |
|  | 250A-BULK | Ferric Chloride, $38 \%$-Bulk | 5,163,198 | 504,805 | 59,312,310 | 0.08705 |
|  | 260A-BULK | Ferric Sulfate - Dry,100\%-Bulk | 3,125,116 | 849,016 | 59,312,310 | 0.05269 |
|  | 270A-BULK | Ferric Sulfate - Liq,60\%-Bulk | 4,810,952 | 410,397 | 59,312,310 | 0.08111 |
|  | 300A-BULK | HFS Acid, $23 \%$-Bulk | 1,642,618 | 464,641 | 59,312,310 | 0.02769 |
|  | 300A-BULK | HFS Acid, $23 \%$-Bulk | 540,983 | 153,306 | 59,312,310 | 0.00912 |
|  | 350G-buLk | Ortho-Poly P,Aqua Mag 9100 Bulk. | 124,960 | 70,681 | 59,312,310 | 0.00211 |
|  | 350G-BULK | Ortho-Poly P,Aqua Mag 9100 Bulk. | 108,814 | 54,702 | 59,312,310 | 0.00183 |
|  | 360A-BULK | Pebble Lime, $100 \%$-Bulk | 46,051,125 | 2,994,023 | 59,312,310 | 0.77642 |
|  | 360A-BULK | Pebble Lime, $100 \%$-Bulk | 10,747,964 | 694,913 | 59,312,310 | 0.18121 |
|  | 400C-50LB | Polymr,An,Superfic a110,A3333P | 696 | 1,244 | 59,312,310 | 0.00001 |
|  | 400W-50LB | Polymer,An,CedarFloc 566 | 92 | 206 | 59,312,310 | 0.00000 |
|  | 410V-buLk | Polymr,Cat,Neat(pDADMAC) | 187,281 | 66,051 | 59,312,310 | 0.00316 |
|  | 410V-BULK | Polymr,Cat,Neat(pDADMAC) | 640,284 | 224,638 | 59,312,310 | 0.01080 |
|  | 511A-BULK | Sodium Chloride,100\% Pure-BULK | 2,555,536 | 194,721 | 59,312,310 | 0.04309 |
|  | 570A-MINI BULK | Sodium Hypo,13\%- Mini Bulk | $(7,652)$ | $(1,672)$ | 59,312,310 | (0.00013) |
|  | 570A-MINI BULK | Sodium Hypo,13\%-Mini Bulk | $(3,900)$ | (852) | 59,312,310 | (0.00007) |
|  | 570A-Mini Bulk | Sodium Hypo,13\%- Mini Bulk | 13,358 | 2,857 | 59,312,310 | 0.00023 |
|  | 570A-Mini Bulk | Sodium Hypo,13\%- Mini Bulk | 17,470 | 3,835 | 59,312,310 | 0.00029 |
| 1702 Total |  |  | 81,126,374 | 8,085,629 |  |  |
| 1703 | 150A-BULK | Ammonia - Anhyd,100\%-Bulk | 32,773 | 22,840 | 6,395,498 | 0.00512 |
|  | 220A-2000LB | Chlorine , 100\%-2000LB | 325,477 | 72,974 | 6,395,498 | 0.05089 |
| 1703 | 250A-BULK | Ferric Chloride,38\%-Bulk | 10,096 | 1,667 | 6,395,498 | 0.00158 |
|  | 290B-15GA | Hydrochloric Acid 31\% | 7,435 | 2,499 | 6,395,498 | 0.00116 |
| 1703 | 300A-BULK | HFS Acid, $23 \%$-Bulk | 59,846 | 21,009 | 6,395,498 | 0.00936 |
|  | 300A-MINI BULK | HFS Acid, $23 \%$-Mini Bulk | 50,530 | 17,307 | 6,395,498 | 0.00790 |
|  | 350G-BULK | Ortho-Poly P,Aqua Mag 9100 Bulk. | 84,849 | 60,766 | 6,395,498 | 0.01327 |
|  | 350G-buLk | Ortho-Poly P,Aqua Mag 9100 Bulk. | 15,931 | 8,002 | 6,395,498 | 0.00249 |
|  | 360A-BULK | Pebble Lime, $100 \%$-Bulk | 6,590,562 | 476,832 | 6,395,498 | 1.03050 |
|  | 400AA-42LB | Polymr,An,Robin, A-30 | 174 | 400 | 6,395,498 | 0.00003 |
| 1703 | 400W-50LB | Polymer,An, CedarFloc 566 | 574 | 300 | 6,395,498 | 0.00009 |
|  | 510A-50LB | Sodium Chloride, $90 \%$ Pure-50LB | 35,608 | 4,063 | 6,395,498 | 0.00557 |
| 1703 Total |  |  | 7,213,855 | 688,659 |  |  |
| 1704 | 150A-150LB | Ammonia - Anhyd,100\%-150LB | 4,522 | 7,074 | 757,078 | 0.00597 |
|  | 220A-150LB | Chlorine , 100\%-150LB | 25,660 | 12,052 | 757,078 | 0.03389 |
| 1704 | 350G-BULK | Ortho-Poly P,Aqua Mag 9100 Bulk. | 509 | 233 | 757,078 | 0.00067 |
|  | 350A-55GA | Ortho-Poly P, Carus 8500-55GA | 2,371 | 1,179 | 757,078 | 0.00313 |
|  | 350G-55GA | Ortho-Poly P,Aqua Mag 9100 55GA. | 5,016 | 3,060 | 757,078 | 0.00663 |
|  | 360A-BULK | Pebble Lime, $100 \%$-Bulk | 1,272,000 | 89,757 | 757,078 | 1.68014 |
| 1704 Total |  |  | 1,310,078 | 113,354 |  |  |
| 1706 | 220A-150LB | Chlorine ,100\%-150LB | 17,291 | 7,988 | 884,427 | 0.01955 |
| 1706 | 350G-BULK | Ortho-Poly P,Aqua Mag 9100 Bulk. | 3,530 | 2,249 | 884,427 | 0.00399 |
|  | 350G-55GA | Ortho-Poly P,Aqua Mag 9100 55GA. | 6,387 | 3,847 | 884,427 | 0.00722 |
|  | 700A-BULK | Liquid Oxygen - Bulk | 204,555 | 15,993 | 884,427 | 0.23129 |
| 1706 Total |  |  | 231,763 | 30,077 |  |  |
| 1708 | 220A-150LB | Chlorine ,100\%-150LB | 1,118 | 509 | 27,215 | 0.04108 |
|  | 280A-50LB | Hydrated Lime, $72 \%$ CaO-50LB | 10,900 | 2,545 | 27,215 | 0.40051 |
|  | 480A-700LB | Sodium Alum, $5 \%$ caustic-700LB | 1,030 | 588 | 27,215 | 0.03785 |
| 1708 Total |  |  | 13,048 | 3,643 |  |  |
| 1710 | 210A-BULK | Carbon Dioxide, $100 \%$-Bulk | 29,632 | 1,345 | 672,206 | 0.04408 |
|  | 220A-150LB | Chlorine , 100\%-150LB | 25,436 | 11,640 | 672,206 | 0.03784 |
|  | 270A-55GA | Ferric Sulfate - Liq,60\%-55GA | 38,574 | 10,346 | 672,206 | 0.05738 |


| Units/Sys Del | System Delievery | Units/Sys Del | Price | Expense |
| :---: | :---: | :---: | :---: | :---: |
| 0.03424 | 58,914,543 | 0.03424 | 0.11 | 221,883 |
| 0.00736 | 58,914,543 | 0.00736 | 0.115 | 49,838 |
| 0.00005 | 58,914,543 | 0.00005 | 1.55 | 4,394 |
| 0.00000 | 58,914,543 | 0.00132 | 0.795 | 61,874 |
| 0.00000 | 58,914,543 | 0.00115 | 0.865 | 58,475 |
| 0.00396 | 58,914,543 | 0.00396 | 0.686 | 160,195 |
| 0.01385 | 58,914,543 | 0.01385 | 0.685 | 558,969 |
| 0.03134 | 58,914,543 | 0.03134 | 0.2 | 369,288 |
| 0.00013 | 58,914,543 | 0.00013 | 1.93 | 14,385 |
| 0.00003 | 58,914,543 | 0.00003 | 2.05 | 3,445 |
| 0.00000 | 58,914,543 | 0.08705 | 0.0798 | 409,260 |
| 0.08969 | 58,914,543 | 0.08969 | 0.2098 | 1,108,648 |
| 0.13695 | 58,914,543 | 0.13695 | 0.0698 | 563,154 |
| 0.02840 | 58,914,543 | 0.02840 | 0.24 | 401,547 |
| 0.00929 | 58,914,543 | 0.00929 | 0.24 | 131,314 |
| 0.00000 | 58,914,543 | 0.00211 | 0.49 | 60,820 |
| 0.00000 | 58,914,543 | 0.00183 | 0.49 | 52,961 |
| 0.77176 | 58,914,543 | 0.77176 | 0.0695 | 3,160,015 |
| 0.23803 | 58,914,543 | 0.23803 | 0.0695 | 974,634 |
| 0.00001 | 58,914,543 | 0.00001 | 2.75 | 1,975 |
| 0.00000 | 58,914,543 | 0.00000 | 2.75 | 251 |
| 0.00460 | 58,914,543 | 0.00460 | 0.56 | 151,684 |
| 0.01220 | 58,914,543 | 0.01220 | 0.48 | 345,075 |
| 0.03748 | 58,914,543 | 0.03748 | 0.076 | 167,796 |
| 0.00000 | 58,914,543 | (0.00013) | 0.095 | (722) |
| 0.00000 | 58,914,543 | (0.00007) | 0.095 | (368) |
| 0.00000 | 58,914,543 | 0.00023 | 0.095 | 1,260 |
| 0.00000 | 58,914,543 | 0.00029 | 0.095 | 1,649 |
|  |  |  |  | 9,033,699 |
| 0.00452 | 6,403,834 | 0.00452 | 0.75 | 21,692 |
| 0.04990 | 6,403,834 | 0.04990 | 0.245 | 78,295 |
| 0.06101 | 6,403,834 | 0.06101 | 0.075 | 29,302 |
| 0.00126 | 6,403,834 | 0.00126 | 0.28 | 2,252 |
| 0.01708 | 6,403,834 | 0.01708 | 0.3 | 32,818 |
| 0.00000 | 6,403,834 | 0.00790 | 0.3 | 15,179 |
| 0.00000 | 6,403,834 | 0.01327 | 0.49 | 41,630 |
| 0.00000 | 6,403,834 | 0.00249 | 0.49 | 7,816 |
| 1.05829 | 6,403,834 | 1.05829 | 0.077 | 521,835 |
| 0.00000 | 6,403,834 | 0.00003 | 4 | 697 |
| 0.00000 | 6,403,834 | 0.00009 | 4 | 2,299 |
| 0.00478 | 6,403,834 | 0.00478 | 0.1 | 3,063 |
|  |  |  |  | 756,878 |
| 0.00556 | 734,384 | 0.00556 | 1.55 | 6,333 |
| 0.03380 | 734,384 | 0.03380 | 0.47 | 11,667 |
| 0.00000 | 734,384 | 0.00067 | 0.59 | 291 |
| 0.00000 | 734,384 | 0.00313 | 0.59 | 1,357 |
| 0.00000 | 734,384 | 0.00663 | 0.59 | 2,871 |
| 1.90533 | 734,384 | 1.90533 | 0.0709 | 99,206 |
|  |  |  |  | 121,725 |
| 0.01414 | 888,815 | 0.01414 | 0.47 | 5,908 |
| 0.00000 | 888,815 | 0.00399 | 0.59 | 2,093 |
| 0.00000 | 888,815 | 0.00722 | 0.59 | 3,787 |
| 0.29153 | 888,815 | 0.29153 | 0.0571 | 14,795 |
|  |  |  |  | 26,583 |
| 0.04187 | 26,401 | 0.04187 | 0.47 | 520 |
| 0.34197 | 26,401 | 0.34197 | 0.19 | 1,715 |
| 0.08914 | 26,401 | 0.08914 | 0.57 | 1,341 |
|  |  |  |  | 3,576 |
| 0.05165 | 682,677 | 0.05165 | 0.0438 | 1,544 |
| 0.03848 | 682,677 | 0.03848 | 0.44 | 11,559 |
| 0.00000 | 682,677 | 0.05738 | 0.23 | 9,010 |


| District | Part \# / Remark | Part Description | Units |  | Expense | System Delivery | Units/Sys Del | Units/Sys Del | System Delievery | Units/Sys Del | Price | Expense |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 270C-55GA | Ferric Sulfate Liq 50\% 10\% Iron |  | 16,800 | 3,715 | 672,206 | 0.02499 | 0.00000 | 682,677 | 0.02499 |  | 0.17 | 2,900 |
|  | 360A-BULK | Pebble Lime, $100 \%$-Bulk |  | 522,926 | 36,060 | 672,206 | 0.77793 | 0.82669 | 682,677 | 0.82669 |  | 0.0745 | 42,045 |
|  | 400x-5GA | Polymer,An, CedarFloc 554 |  | 282 | 705 | 672,206 | 0.00042 | 0.00000 | 682,677 | 0.00042 |  | 5.89 | 1,687 |
|  | 400x-5GA | Polymer,An, CedarFloc 554 |  | 54 | 199 | 672,206 | 0.00008 | 0.00000 | 682,677 | 0.00008 |  | 5.89 | 323 |
| 1710 Total |  |  |  | 633,704 | 64,011 |  |  |  |  |  |  |  | 69,068 |
| 1711 | 100B-5GA | Algicide,Algimycin Algaecide |  | 650 | 2,712 | 4,882,219 | 0.00013 | 0.00014 | 4,807,089 | 0.00014 |  | 3.5 | 2,349 |
|  | 140A-buLk | Alum Sulfate - Liquid, $50 \%$-Bulk |  | 1,508,794 | 186,589 | 4,882,219 | 0.30904 | 0.27883 | 4,807,089 | 0.27883 |  | 0.12 | 160,842 |
|  | 170A-buLk | Ammonia - Aqua,19\%-Bulk |  | 180,266 | 34,711 | 4,882,219 | 0.03692 | 0.04059 | 4,807,089 | 0.04059 |  | 0.1795 | 35,025 |
|  | 171A-55GA | Ammonia - Aqua,19\%-55GA |  | 15,344 | 3,056 | 4,882,219 | 0.00314 | 0.00000 | 4,807,089 | 0.00314 |  | 0.215 | 3,248 |
|  | 200A-900LB | Carbon - PAC,Lignite-900LB |  | 7,200 | 6,749 | 4,882,219 | 0.00147 | 0.00182 | 4,807,089 | 0.00182 |  | 0.87 | 7,601 |
|  | 220A-150LB | Chlorine , 100\%-150LB |  | 9,507 | 4,321 | 4,882,219 | 0.00195 | 0.00103 | 4,807,089 | 0.00103 |  | 0.44 | 2,181 |
|  | 230A-50LB | Copper Sulfate,100\%-50LB |  | 170 | 312 | 4,882,219 | 0.00003 | 0.00003 | 4,807,089 | 0.00003 |  | 0.198 | 33 |
|  | 280B-bULK | Liquid Lime, 37.5\% CaO-BULK |  | 121,529 | 10,291 | 4,882,219 | 0.02489 | 0.02690 | 4,807,089 | 0.02690 |  | 0.1776 | 22,963 |
|  | 300A-55GA | HFS Acid, $23 \%$-55GA |  | 39 | 19 | 4,882,219 | 0.00001 | 0.00019 | 4,807,089 | 0.00019 |  | 0.39 | 354 |
|  | 300A-bULK | HFS Acid, $23 \%$-Bulk |  | 182,773 | 59,096 | 4,882,219 | 0.03744 | 0.03675 | 4,807,089 | 0.03675 |  | 0.25 | 44,166 |
|  | 400W-50LB | Polymer,An,CedarFloc 566 |  | 135 | 269 | 4,882,219 | 0.00003 | 0.00000 | 4,807,089 | 0.00003 |  | 3.05 | 405 |
|  | 410DD-BULK | Polymer,Cat,CedarFloc 524 |  | 18,024 | 9,956 | 4,882,219 | 0.00369 | 0.00000 | 4,807,089 | 0.00369 |  | 0.955 | 16,948 |
|  | 410Dd-buLk | Polymer,Cat,CedarFloc 524 |  | 9,239 | 4,558 | 4,882,219 | 0.00189 | 0.00000 | 4,807,089 | 0.00189 |  | 0.955 | 8,687 |
|  | 511A-bULK | Sodium Chloride,100\% Pure-BULK |  | 694,275 | 61,322 | 4,882,219 | 0.14220 | 0.12384 | 4,807,089 | 0.12384 |  | 0.0815 | 48,518 |
|  | 570A-300GA | Sodium Hypo,13\%-300GA |  | 14,625 | 3,314 | 4,882,219 | 0.00300 | 0.00000 | 4,807,089 | 0.00300 |  | 0.275 | 3,960 |
|  | 570A-55GA | Sodium Hypo,13\%-55GA |  | 3,755 | 787 | 4,882,219 | 0.00077 | 0.01973 | 4,807,089 | 0.01973 |  | 0.275 | 26,082 |
| 1711 Total |  |  |  | 2,766,325 | 388,062 |  |  |  |  |  |  |  | 383,362 |
| 1712 | 160A-50LB | Amonium Slfate,100\%-50LB |  | 36,500 | 16,134 | 1,307,708 | 0.02791 | 0.02578 | 1,352,931 | 0.02578 |  | 0.495 | 17,264 |
|  | 200A-buLk | Carbon - PAC,Lignite-Bulk |  | 39,929 | 29,007 | 1,307,708 | 0.03053 | 0.03200 | 1,352,931 | 0.03200 |  | 0.738 | 31,948 |
|  | 210A-buLk | Carbon Dioxide, $100 \%$-Bulk |  | 260,659 | 11,685 | 1,307,708 | 0.19933 | 0.20839 | 1,352,931 | 0.20839 |  | 0.0319 | 8,994 |
|  | 270A-BULK | Ferric Sulfate - Liq,60\%-Bulk |  | 569,068 | 48,971 | 1,307,708 | 0.43516 | 0.00000 | 1,352,931 | 0.43516 |  | 0.074 | 43,567 |
|  | 300A-BULK | HFS Acid, $23 \%$-Bulk |  | 42,525 | 13,320 | 1,307,708 | 0.03252 | 0.04365 | 1,352,931 | 0.04365 |  | 0.25 | 14,765 |
|  | 360A-buLk | Pebble Lime, $100 \%$-Bulk |  | 1,709,558 | 117,487 | 1,307,708 | 1.30729 | 1.26671 | 1,352,931 | 1.26671 |  | 0.0745 | 127,676 |
|  | 440A-50LB | Plyphos, WSU319,CalciQ-MW-50LB |  | 27 | 6 | 1,307,708 | 0.00002 | 0.00518 | 1,352,931 | 0.00518 |  | 1.26 | 8,834 |
|  | 411U-55GA | Polymer,Cat,CedarFloc 526 |  | 8,954 | 4,213 | 1,307,708 | 0.00685 | 0.00000 | 1,352,931 | 0.00685 |  | 0.685 | 6,346 |
|  | 440A-50LB | Plyphos, WSU319,CalciQ-MW-50LB |  | 8,600 | 12,403 | 1,307,708 | 0.00658 | 0.00518 | 1,352,931 | 0.00518 |  | 1.26 | 8,834 |
|  | 570A-BULK | Sodium Hypo,13\%-Bulk |  | 455,256 | 34,465 | 1,307,708 | 0.34813 | 0.40794 | 1,352,931 | 0.40794 |  | 0.087 | 48,017 |
| 1712 Total |  |  |  | 3,131,076 | 287,691 |  |  |  |  |  |  |  | 316,245 |
| 1714 | 570A-15GA | Sodium Hypo,13\%-15GA |  | 12,254 | 2,467 | 31,810 | 0.38522 | 0.35299 | 36,593 | 0.35299 |  | 0.212 | 2,738 |
| 1714 Total |  |  |  | 12,254 | 2,467 |  |  |  |  |  |  |  | 2,738 |
| Grand Total |  |  |  | 96,438,477 | 9,663,592 |  |  |  |  |  |  |  | 10,713,874 |

# Missouri American Water <br> Historical Chemical Usage 

## Carbon-Powdered Activated Bulk

| Chemical <br> Units |  |
| :--- | ---: |
| 2002 |  |
| 2003 | $1,349,410$ |
| 2004 | 741,768 |
| 2005 | 985,999 |
| 2006 |  |
| 2007 | $1,182,724$ |
| 2008 | $1,171,657$ |
| 2009 |  |
| 2010 |  |
|  |  |
|  |  |
|  |  |
|  |  |


| System <br> Delivery | Chemical Units per <br> System Delivery |
| :---: | :---: |
| $63,956,549$ | 0.0211 |
| $59,373,244$ | 0.0125 |
| $62,206,420$ | 0.0159 |
| $67,530,680$ | 0.0175 |
| $69,216,108$ | 0.0169 |
| $68,646,221$ | 0.0201 |
| $60,033,821$ | 0.0158 |
| $57,148,400$ | 0.0138 |
| $59,312,310$ | 0.0118 |

Pebble Lime

| Chemical <br> Units |  |
| :---: | ---: |
| 2002 | $32,349,396$ |
| 2003 | $33,358,435$ |
| 2004 | $31,078,350$ |
| 2005 | $38,280,217$ |
| 2006 | $38,189,332$ |
| 2007 | $38,639,433$ |
| 2008 | $33,510,283$ |
| 2009 | $31,748,159$ |
| 2010 | $34,482,329$ |


| System <br> Delivery | Chemical Units per <br> System Delivery |
| :---: | :---: |
| $63,956,549$ | 0.5058 |
| $59,373,244$ | 0.5618 |
| $62,206,420$ | 0.4996 |
| $67,530,680$ | 0.5669 |
| $69,216,108$ | 0.5517 |
| $68,646,221$ | 0.5629 |
| $60,033,821$ | 0.5582 |
| $57,148,400$ | 0.5555 |
| $59,312,310$ | 0.5814 |


| Description | Amount |  | Disallowed |  | Doc Type | Doc Number | Remark | Name | Explanation | Ad Type |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CORP-External A | \$ | 4,000 | \$ | $(4,000)$ | PS | 42552269 | Public Education Vid | Rivermiles LLC | Rivermiles public education video | Environmental Educ |
| STLC-Admin \& Ge | \$ | 3,612 | \$ | $(3,612)$ | PV | 42612057 | ACCT \# J104439 | St Louis Post Dispat | Watershed education ad St. Louis | Environmental Educ |
| STLC-Admin \& Ge | \$ | 70 | \$ | (70) | CC | 7174 | ALICE ANN DETTMER | Alice A. Dettmer | Zvents watershed educ. Pgm ad | Environmental Educ |
| STLC-Admin \& Ge | \$ | 1,806 | \$ | $(1,806)$ | CC | 7198 | ALICE ANN DETTMER | Alice A. Dettmer | Watershed education ad St. Louis | Environmental Educ |
| STJO-Admin \& Ge | \$ | 190 | \$ | (190) | PV | 42532791 | ID \# 4192 | Eagle Communications | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| STJO-Admin \& Ge | \$ | 298 | \$ | (298) | PV | 42532802 | ID \# 4192 | Eagle Communications | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 485 | \$ | (485) | PS | 42451213 | TV Advertising | KODE TV 12 | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 125 | \$ | (125) | PV | 42502279 | 4-20-10 SERVICE | Sunrise Media Group | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 242 | \$ | (242) | PV | 42502283 | 4-10 SERVICES | Zimmer Radio Group I | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 375 | \$ | (375) | PV | 42502286 | 4-10 SERVICES | Zimmer Radio Group I | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 730 | \$ | (730) | PV | 42502288 | CONTRACT \# 2980 | KODE TV 12 | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 750 | \$ | (750) | PV | 42502291 | CONTRACT \# 2980 | KODE TV 12 | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 615 | \$ | (615) | PV | 42502294 | CONTRACT \# 2981 | KODE TV 12 | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 388 | \$ | (388) | PV | 42532808 | ACCT \# 10507 | The Joplin Globe | Ad World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 135 | \$ | (135) | PV | 42545568 | CONTRACT \# 2981 | KODE TV 12 | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 20 | \$ |  | PV | 42545573 | CONTRACT \# 2980 | KODE TV 12 | 30 sec . World Bird Community Prog Ad | Environmental Educ |
| JOPL-Admin \& Ge | \$ | 448 | \$ | (448) | CC | 7064 | CHRISTIE L BARNHART | Christie L. Barnhart | Zimmer Radio Group |  |

You're invited
to free celebrations
of water, watersheds and wild birds.

Come see
amazing birds of prey up-close and in-flight.

## Thursday, May 6, 2:00 pm \& 3:45 pm

## Powder Valley

Conservation Nature Center

11715 Cragwold Rd.
Kirkwood, MO 63122-7015
Reservations requested
314-301-1500


MIS SOURI American Water


Advertisement: Thirty Second Spot for World Bird Sanctuary's Free Community Program

Birds of Prey

Aired on KODE, KSN and Zimmer Radio Group.

DO YOU HEAR THE CALL OF THE WILD?

MISSOURI AMERICAN WATER IN COOPERATION WITH KSN AND KODE TV PRESENTS THE WORLD BIRD SANCTUARY'S LIVE BIRDS OF PREY PROGRAM AT JOPLIN'S MEMORIAL HALL THURSDAY SEPTEMBER $3^{\text {RD }}$ AT 6:30 PM. COME AND LEARN ABOUT RAPTORS INCLUDING EAGLES, OWLS, HAWKS, FALCONS AND MORE. WITNESS THE MAGIC OF THESE CREATURES IN FLIGHT. THIS SHOW IS FREE AND OPEN TO THE PUBLIC. ANSWER THE CALL OF THE WILD BROUGHT TO YOU BY MISSOURI AMERICAN WATER, KSN AND KODE TV. FOR MORE INFORMATION GO TO WWW.MISSOURIAMWATER.COM

Advertisement: Thirty Second Spot for World Bird Sanctuary's Free Community Program
Birds of Prey
Aired on Eagle Radio
DO YOU HEAR THE CALL OF THE WILD?
MISSOURI AMERICAN WATER PRESENTS THE WORLD BIRD SANCTUARY'S LIVE BIRDS OF PREY PROGRAM AT THE RIVERSIDE CHURCH AUDITORIUM IN ST. JOSEPH ON TUESDAY, MAY 4TH AT 6:30 PM. COME AND LEARN ABOUT RAPTORS INCLUDING EAGLES, OWLS, HAWKS, FALCONS AND MORE. WITNESS THE MAGIC OF THESE CREATURES IN FLIGHT. THIS SHOW IS FREE AND OPEN TO THE PUBLIC. ANSWER THE CALL OF THE WILD BROUGHT TO YOU BY MISSOURI AMERICAN WATER. FOR MORE INFORMATION GO TO WWW.MISSOURIAMWATER.COM

The Rivermiles Public Education Video is available for review at the Data Center of the Missouri Public Service Commission office.

| District | Account | Amount |  | Organization | Benefit to Company |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 170122 | 170122.575140.16 | \$ | 500 | Missouri Chamber of Commerce | Economic Development Partnership |
| 170122 | 170122.575740 .16 | \$ | 1,000 | Missouri Chamber of Commerce | Economic Development Partnership |
| 170122 | 170122.575280 .16 | \$ | 7,835 | Missouri Chamber of Commerce | Dues - Economic Development Partnerships |
| 170122 | 170122.575281 .16 | \$ | 2,200 | Missouri Chamber of Commerce | Dues - Economic Development Partnerships |
|  | Total | \$ | 11,535 |  |  |

## Benefit to Ratepayer <br> Joint-effort to bring business and industry to improve the local economy and ultimately reduce rate increases <br> Joint-effort to bring business and industry to improve the local economy and ultimately reduce rate increases <br> Joint-effort to bring business and industry to improve the local economy and ultimately reduce rate increases <br> Joint-effort to bring business and industry to improve the local economy and ultimately reduce rate increases



Over 80 percent of empty water bottles end up in the nation's landfills.

## Related Articles

Factories' Pollution \& Other Causes of Global Warming

How to Compost in a Bottle
What Causes Pollution That Leads to Global Warming?

What Can You Do to Reduce Pollution and Conserve Energy?

The Best Natural Way to Clean Baby Bottles

How Do I Use Solar Power to Purify Water?

| Share | In 1976 Americans drank an average of 1.6 gallons of bottled water every year. |
| :---: | :---: |
| $f$ Facebook | Roughly 30 years later consumption increased to 30 gallons per person, according to the Earth Policy Institute --- despite the fact that bottled water can |
| * Twitter | cost anywhere from 240 to 10,000 times more than tap water, which is brought right to your home for pennies a gallon. Bottled water also creates its own share |
| (1) Google Buzz | of pollution --- the production of plastic bottles requires millions of barrels of oil per year and the transportation of bottled water from its source to stores |
| (2) Digg | releases thousands of tons of carbon dioxide. (See References 1) |
| ลป StumbleUpon | Oil Consumption |
| $\square$ Send to a Friend | According to "National Geographic," Americans drink more bottled water than any other nation, purchasing an impressive 29 billion bottles every year. Making |
| More » | all the plastic for those bottles uses 17 million barrels of crude oil annually. That is equivalent to the fuel needed to keep 1 million vehicles on the road for 12 months. If you were to fill one quarter of a plastic water bottle with oil, you would |

be looking at roughly the amount used to produce that bottle. (See References 2)

## Recycling

The recycling rate for those 29 billion bottles of water is low; only about 13 percent end up in the recycling stream where they are turned into products like fleece clothing, carpeting, decking, playground equipment and new containers and bottles. In 2005, that meant approximately 2 million tons of water bottles ended up in U.S. landfills, according to the National Resources Defense Council (NRDC) (see References 3, Question 7). Plastic bottles take centuries to decompose and if they are incinerated, toxic byproducts, such as chlorine gas and ash containing heavy metals, are released into the atmosphere.

## Transportation

Bottled water often takes a long journey to U.S. markets. In 2006, the equivalent of 2 billion half-liter bottles arrived in U.S. ports, according to the NRDC. Fiji shipped 18 million gallons of bottled water to California, releasing about 2,500 tons of transportation-related pollution. Western Europe's shipment of bottled water to New York City that year released 3,800 tons of pollution. (See References 3, Question 7) The Earth Policy Institute estimates that the energy used to pump, process, transport and refrigerate bottled water is over 50 million barrels of oil annually (see References 4).

## Contaminants

Bottled water isn't always as safe as tap water. The NRDC conducted a four-year study of the bottled water industry and concluded that while most bottled water is safe to drink, there are areas of concern. Roughly 22 percent of the water tested contained contaminant levels that exceeded strict state health limits. One study found that hormone-disrupting phthalates had leached into bottled water that had been stored for 10 weeks. (See References 3, Questions 2 \& 3)

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## Resources

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## About the Author

Suzanna Didier's work appears in various online publications, including the National Geographic website and Local.com. She lives on a hobby farm, direct-markets her organic produce to local restaurants and has taught at the preschool, elementary and college levels. Didier holds a Master of Arts in education from the University of Oregon.

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Name
Explanation

| CORP-External A | 575220 | $12 / 27 / 2010$ | 13,446 PV | 42683275 CUST \# 116783 | Axis Enterprises Inc | Logo water bottles |
| :--- | ---: | ---: | ---: | ---: | :--- | :--- |
| STJO-Admin \& Ge | 575220 | $9 / 7 / 2010 ~ \$ ~$ | 718 PV | 42593034 SALES ORDER \# 1 | Identity Links Inc | Water bottles - Cancer walk |

