Exhibit No.:

Issues: Tank Painting Tracker,

ECAM, Miscellaneous Charges, Riverside

Witness: Kevin H. Dunn Exhibit Type: Surrebuttal

Sponsoring Party: Missouri-American Water

Company

Case No.: WR-2015-0301

SR-2015-0302

Date: March 4, 2016

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2015-0301 CASE NO. WR-2015-0302

SURREBUTTAL TESTIMONY

OF

KEVIN H. DUNN

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF MISSOURI-AMERICAN WATER COMPANY FOR AUTHORITY TO FILE TARIFFS REFLECTING INCREASED RATES FOR WATER AND SEWER SERVICE

CASE NO. WR-20150-0301 CASE NO. SR-2015-0302

AFFIDAVIT OF KEVIN H. DUNN

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

Kevin H. Dunn

State of Missouri County of St. Louis SUBSCRIBED and sworn to

Before me this 18th day of February 2016

Notary Public

My commission expires: July 17,2016

DONNA S. SINGLER
Notary Public, Notary Seal
State of Missouri
St. Louis County
Commission # 12368409
My Commission Expires July 17, 2016

SURREBUTTAL TESTIMONY KEVIN H. DUNN MISSOURI-AMERICAN WATER COMPANY CASE NO. WR-2015-0301 CASE NO. WR-2015-0302

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SURREBUTTAL TESTIMONY

1 2		KEVIN H. DUNN
3 4		I. <u>INTRODUCTION</u>
5 6	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
7	A.	My name is Kevin H. Dunn, and my business address is 727 Craig Rd, St. Louis,
8		MO 63141.
9		
10	Q.	BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?
11	A.	I am employed by Missouri-American Water Company ("MAWC" or "Company")
12		as its Director of Engineering.
13		
14	Q.	HAVE YOU PREVIOUSLY TESTIFIED IN THIS CASE?
15	A.	Yes, I have submitted direct and rebuttal testimony in this proceeding.
16		
17	Q.	WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?
18	A.	I will respond to the following issues that were raised in rebuttal testimonies of
19		the Commission Staff, Office of the Public Council (OPC), the Missouri Industrial
20		Energy Consumers (MIEC), and the City of Riverside (Riverside).
21		Tank Painting Tracker;
22		Environmental Cost Adjustment Mechanism (ECAM);
23		Miscellaneous Fees; and
24		Riverside Mayor Rose's rebuttal testimony.
25		

II. TANK PAINTING TRACKER

2	Q.	PLEASE SUMMARIZE STAFF'S RECOMMENDATION FOR THE COMPANY'S
3		TANK PAINTING TRACKER?

Staff witness Jason Kunst proposes a normalized level of \$1.28 million for tank painting and inspection expenses based on a five year average of historical costs and eliminating the tank painting tracker upon the effective date of rates for this case. He continues to state that the Staff will continue to examine all costs through the true-up date of January 31,2016. (Kunst Reb., p. 3) Staff also recommends for the next rate case that the resulting regulatory asset or liability created by the tracker subsequent to the true-up cutoff of January 31, 2016, through the June 28, 2016, effective date of rates in this proceeding be addressed through amortization in MAWC's next rate case. (Kunst Reb., p. 5)

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Q. DO YOU AGREE THAT TANK PAINTING AND INSPECTION EXPENSES
SHOULD BE SET AT A NORMALIZED LEVEL AND THE TANK PAINTING
TRACKER SHOULD BE ELIMINATED?

17 A. No, I do not. MAWC believes the tank painting tracker is an appropriate
18 mechanism to insure that MAWC recovers no more and no less than its actual
19 tank painting and inspection expenses. Also, Mr. Kuntz's proposed normalized
20 method of using a five-year average of historical costs does not consider the
21 variability of expenditures for tanks to be painted in any one year. This would put
22 MAWC at a disadvantage of under recovering tank painting expenditures when a
23 major tank (or multiple tanks) needs to be painted and the costs exceed the

normalized amount. On the other hand, if tank painting in any year is less than the normalized amount, the customers would not have a way of recovering the expense level that was not incurred.

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Q. DO HISTORICAL PAINTING AND INSPECTION EXPENSES VARY OVER THE

YEARS?

Yes. Mr. Kuntz provides a table (Kunst Reb., p. 4) that shows significant fluctuations over the five year period, with a low of \$566,637 and a high of \$2,322,333. However, he states, "Staff's position is that fluctuations in expense up and down over time are most appropriately addressed through a normalization adjustment, which is a traditional ratemaking technique frequently used in rate cases." Although tank painting expenses can be variable, Staff believes that MAWC can schedule the expenses to meet the normalized adjustment. However, that is not always the case. As I mentioned in my rebuttal testimony, the 11 million gallon Stratmann Tank #2 will need to be painted in the next few years at an estimated cost of \$2.2 million. With Staff's proposed normalized method, MAWC will not be able to paint another tank for two years if it wants to recover the costs of painting the Stratmann Tank. It would not be appropriate to incentivize MAWC to postpone necessary tank painting simply because it does not fit into a "normalized" level of expense for that year.

Q. WHY IS THE TRACKER METHOD APPROPRIATE?

1 Α. The tracker method is a more appropriate method because it readily accounts for 2 the variability in both timing and the amount of tank painting expenses. This method establishes the optimal level of expense that allows the appropriate cost 3 4 causers to pay for the coatings as they wear and it more closely matches the 5 expenses of tank painting with the generations of customers who "used" the 6 tanks. If MAWC exceeds the optimal level of expense, the difference is amortized 7 to the customers in a timely manner to offset the overage. On the other hand, if MAWC does not expend the optimal level, then any expenses not actually 8 9 incurred will be flowed back to the customers in a timely manner.

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Q. WHAT IS THE CURRENT TRACKER LEVEL EXPENSE MAWC PROPOSES?

A. MAWC proposed to maintain the existing tracker in this case, and to leave the tracker at an annual level of \$1,300,000.

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Q. DOES MAWC AGREE THAT AN ADJUSTMENT TO AMORTIZE THE CURRENT REGULATORY ASSET BALANCE SHOULD OCCUR?

A. Yes. As stated in my Rebuttal Testimony, MAWC believes that the tracker balance at the end of January 31, 2016, should be amortized over a period of three years, and that the unamortized balance of the regulatory asset be included in rate base. This will allow MAWC to fully recover its cost for painting tanks.

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Q. DOES MAWC HAVE A RECOMMENDATION IF THE COMMISSION DECIDES TO ELIMINATE THE TANK PAINTING TRACKER?

If the tank painting tracker is eliminated, then MAWC would agree with the method proposed in Staff's witness Kuntz's Rebuttal Testimony, except that the existing regulatory asset balance at the end of the true-up period should be amortized over a period of three years, as proposed by OPC Witness Keri Roth. Further, the balance of the tracker from February 1, 2016, through the effective date of rates in this proceeding should be addressed in the next MAWC rate case.

ECAM." (Mantle Reb.,p. 15)

Α.

III. ENVIRONMENTAL COST ADJUSTMENT MECHANISM (ECAM)

- Q. PLEASE SUMMARIZE MIEC'S, OPC'S, AND STAFF'S RECOMMENDATIONS FOR THE ECAM?
- 12 A. The Commission Staff's Curtis B. Gateley and Mark L. Oligschlaeger both stated 13 that the Staff does not oppose the ECAM, but expect the Commission to set 14 certain conditions on the approval.

Both MIEC (Greg R. Meyer) and OPC (Lena M. Mantle) oppose the ECAM and state that MAWC has not shown that it expects to incur significant costs due to environmental rules, laws, or regulations. Mr. Meyer went on to state that "Missouri-American has failed to demonstrate how not having an ECAM will significantly affect its ability to earn its authorized rate of return." (Meyer Reb., p. 9). OPC witness Mantle stated that "MAWC did not meet the requirements of the Commission rules regarding the application for approval of an ECAM. Lastly, the ECAM proposed by MAWC lacks the details necessary for implementation of an

23

2	Q.	DOES MAWC AGREE WITH THE STAFF RECOMMENDATIONS?
3	A.	Yes. MAWC recommends approval of the ECAM by the Commission and agrees
4		with the additional conditions suggested by the Staff witnesses Gateley and
5		Oligschlaeger. These conditions are mostly items created in the rule 4 CSR 240-
6		50.050, other than the minimum materiality level with which MAWC can also
7		agree.
8		
9	Q.	DESCRIBE THE CONDITIONS AS SET OUT BY STAFF IN ITS REBUTTAL
10		TESTIMONY?
11	A.	Mr. Gateley suggests the following items, which are included in the Rule 4 CSR
12		240-50.050:
13		1. ECAM qualifying environmental cost in accordance with 4 CSR 240-
14		50.050(1)(A),1 and 2.
15		2. Costs associated with wastewater are not eligible.
16		3. No costs eligible for Infrastructure System Replacement Surcharge.
17		4. Costs become eligible only after they are known and measurable.
18		5. No costs incurred as a result of negligent or wrongful acts or omissions
19		by the utility are eligible.
20		6. "In determining which environmental cost components to include in an
21		ECAM, the commission will consider, but is not limited to only
22		considering, the magnitude of the costs, the ability of the utility to

manage the costs, the incentive provided to the utility as a result of the

- inclusion or exclusion of the cost, and the extent to which the cost is related to environmental compliance." (4 CSR 240-50.050(2)(D))
 - 7. Any periodic adjustment the ECAM shall not generate an annual amount of revenue that exceeds 2.5% of MAWC's gross jurisdictional revenues from the rate case the establishes or modifies the ECAM.
 - 8. The following additions to the tariff sheets filed by MAWC; "In the "DESCRIPTION" and "APPLICABILITY" sections, language should be added to clarify that only environmental costs associated with drinking water are eligible. The amount of the 2.5% annual cap to be collected should be added, as well as the formula for calculating the surcharge amount and how those surcharges are to be spread among the rate classes that MAWC proposes. Finally, the language referring to the True-Up should be clarified to document that the True-Up filing shall be made in accordance with the required annual rate adjustment filing to be made by MAWC." (Gateley Reb., p. 3)

Mr. Oligschlaeger suggests the following;

1. The "Commission impose a condition that any future ECAM rate recovery only encompass actual and incremental environmental costs that are not included in MAWC's previously established general base rates, and that also reflect any offsetting cost decreases directly associated with the new environmental laws or regulations giving rising to the ECAM rate filing." (Oligschlaeger Reb.,p. 7)

1		2. "MAWC be ordered to only apply for an actual future ECAM rate when
2		its net incremental eligible ECAM costs reach a level of \$500,000 or
3		more in in environmental compliance revenue requirement on an
4		annual basis." (Oligschlaeger Reb.,p. 7)
5		
6	Q.	WITNESSES MEYER (MIEC) AND MANTLE (OPC) LARGELY CRITICIZE THIS
7		FILING BECAUSE MAWC HAS NOT IDENTIFIED KNOWN FUTURE
8		PROJECTS. HOW WOULD YOU RESPOND TO MIEC WITNESS MEYER AND
9		OPC WITNESS MANTLE?
10	A.	Those witnesses are correct that we do not know of immediate projects that will
11		require MAWC to utilize the ECAM option. However, to utilize the ECAM, it must
12		be established in a general rate case, like this proceeding. This is the first
13		opportunity MAWC has had to propose an ECAM tariff since the ECAM rule was
14		promulgated by the Commission.
15		Further, water is the only public utility service that produces something that is
16		ingested by its customers. When there are changes in environmental laws and

ingested by its customers. When there are changes in environmental laws and standards, it is in the public interest that the required investment be made as quickly as possible, without concern for the regulatory rate setting process. The ECAM provides a mechanism for timely response and eliminates any financial disincentive that might otherwise result.

Lastly, as stated above, Staff has proposed a minimum level of revenue requirement that must be at issue in order to make use of the ECAM. MAWC finds that requirement to be acceptable and believes that such a minimum level

1		will ensure that any investment for which recovrery is sought through the ECAM
2		will be significant and, if not recovered in a timely manner, will significantly impact
3		MAWC's ability to earn its authorized rate fo return.
4		
5	Q.	WHAT IS MAWC'S RECOMMENDATION FOR THIS ISSUE?
6	A.	MAWC recommends that the Commission approve the ECAM and accept the
7		conditions recommended by Staff.
8		
9		IV. <u>MISCELLANEOUS FEES</u>
10	Q.	WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?
11	A.	I will address Curtis Gately's rebuttal testimony with respect to his
12		recommendation regarding miscellaneous water and sewer fees.
13		
14	Q.	WHAT WAS THE COMPANY'S PROPOSAL WITH RESPECT TO
15		MISCELLANEOUS WATER FEES?
16	A.	MAWC proposed to leave the existing fees unchanged at this time.
17		
18	Q.	DID MR. GATELY SUPPORT THE COMPANY'S PROPOSAL?
19	A.	No, he did not support MAWC'S proposal to leave miscellaneous charges
20		unchanged because he does not believe the current charges accurately reflect
21		the actual costs of charges. Mr. Gately proposed that the Miscellaneous
22		Charges that are common to all service territories should be consolidated onto
23		one page and adjusted to reflect his view of the actual cost of service and the

charges unique to a particular service territory should remain separated. He also proposed entirely new Miscellaneous Fees based on his belief that his proposed charges are cost based.

Α.

Q. DO YOU AGREE WITH MR. GATELY?

No. Mr. Gately concedes that his proposed rates were developed using answers to his Data Request 0234, which asked MAWC to provide the actual costs for MAWC or its contractors to perform the services related to the Miscellaneous Charges. He acknowledges, however, that MAWC did not provide those actual, fully loaded costs but, instead, provided a cost of service study for the services associated with the Miscellaneous Charges. The data supporting Mr. Gately's proposed rates is, therefore, incomplete because MAWC does not track the actual costs of many of the charges and the proposed changes by Mr. Gately are only based on direct costs (direct costs are only labor and materials).

Furthermore, the costs are not current. MAWC does not have recent data; Mr. Gately was provided a study done in 2011, which reflects charges similar to the current tariff (See Surrebuttal Schedule KHD-1).

Q. DO YOU HAVE ANY INDICATION THAT THE CHARGES THAT MR. GATELY PROPOSES ARE INACCURATE AND SHOULD NOT BE ADOPTED?

A. Yes. For example, Mr. Gately lists a charge for temporary use from a hydrant at \$15/day. Based on actual costs, that one charge, should be increased to \$198/day, a very significant difference.

1	Q.	DO YOU HAVE A PROPOSAL TO ADDRESS THIS PROBLEM?
2	A.	Yes. MAWC proposes to hold the Miscelleaneous Charges at current levels
3		pending a complete/comprehensive cost study that would be filed with the next
4		rate case. Such study could fully investigate the cost data underlying all of the
5		Miscellaneous Charges and re-price them accordingly.
6		
7	Q.	DO YOU AGREE WITH MR. GATELY'S REBUTTAL RELATIVE TO THE
8		SEWER CONSOLIDATED TARIFF?
9	A.	Yes, the consolidated sewer tariff should ultimately be revised to what is agreed
10		with the returned check fee for the water consolidated tariff.
11		
12	Q.	WHAT IS YOUR RESPONSE TO MR. GATELY'S CONCERN ABOUT MAWC'S
12 13	Q.	WHAT IS YOUR RESPONSE TO MR. GATELY'S CONCERN ABOUT MAWC'S TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF?
	Q. A.	
13		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF?
13 14		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF? As Mr. Gately notes, Staff and MAWC are in agreement that service area
13 14 15		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF? As Mr. Gately notes, Staff and MAWC are in agreement that service area identification in the tariff needs improvement. Consistent with the study for the
13 14 15 16		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF? As Mr. Gately notes, Staff and MAWC are in agreement that service area identification in the tariff needs improvement. Consistent with the study for the Miscellaneous Charges, we propose to revise the tariff completely for the next
13 14 15 16 17		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF? As Mr. Gately notes, Staff and MAWC are in agreement that service area identification in the tariff needs improvement. Consistent with the study for the Miscellaneous Charges, we propose to revise the tariff completely for the next rate filing. In that process, we would work with Staff to get their input on
13 14 15 16 17		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF? As Mr. Gately notes, Staff and MAWC are in agreement that service area identification in the tariff needs improvement. Consistent with the study for the Miscellaneous Charges, we propose to revise the tariff completely for the next rate filing. In that process, we would work with Staff to get their input on
13 14 15 16 17 18		TERMINOLOGY AND CHARGE DESCRIPTIONS IN MAWC'S TARIFF? As Mr. Gately notes, Staff and MAWC are in agreement that service area identification in the tariff needs improvement. Consistent with the study for the Miscellaneous Charges, we propose to revise the tariff completely for the next rate filing. In that process, we would work with Staff to get their input on necessary or desirable language changes.

1 A. I will address the concerns raised by Mayor Rose rebuttal testimony with respect to costs, district pricing, and service quality.

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Q. WHAT'S THE REASONING FOR THE INCREASED PRICING FROM 2006 TO TODAY?

We are aware of Mayor Rose's concerns with respect to rate increases and want to assure her and our other elected officials that we are doing everything in our power to deliver safe, adequate and reliable water service in the most efficient ways we can. As Ms. Norton will testify, we have exercised considerable control over our expenses. In 2010 our O&M was \$126.453M; in 2015, O&M was \$122.893M, for a savings of \$3.560M. Inflation alone would have made that O&M \$139.520M. This is a significant savings. This case is not about expenses, because we have reduced those costs. Instead, the major drivers of the Company's need for rate relief are ongoing capital investment and revenue loss arising from declining usage. The Company's levels of ongoing capital investment are significant. We anticipate that by January 31, 2016, the Company will invest more than \$436 million in capital improvements since the last rate case without realizing any capital cost recovery or depreciation expense on \$215 million in capital investment, which represents the non ISRS qualified investments during this time. Ongoing capital investment, together with the erosive impact of past and projected declines in customer usage, accounts for the majority of the Company's requested increase.

Q. DO YOU AGREE WITH MAYOR ROSE'S RECOMMENDATION TO

CONSOLIDATE DISTRICTS INTO A SINGLE RATE?

Yes, we agree that rate increases will be less dramatic if investments are spread
 across a larger customer base.

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Q. WHAT HAVE YOU DONE TO ADDRESS THE QUALITY CONCERNS MAYOR ROSE REFERENCES IN HER TESTIMONY?

The Company's management presented a summary of the efforts taken since we became aware of the quality concerns. (See Surrebuttal Schedule KHD-2) at the 3/3/16 Community meeting in Riverside, Mo. Softening the water does cause the precipitation of calcium which causes the formation of "scale" in the water pipes. This scale builds up over time in the pipes and can be loosened by activities such as main breaks and flushing. Lime softening is used successfully in St. Louis County, St. Joseph, Mexico, Jefferson City and Brunswick to reduce hardness. Water entering homes is not believed to contain the particles as homes with whole house filters are not plugging unreasonably fast. We believe that scale is forming on in-house piping and at some point is released. We believe that the introduction of CO2 in May 2016 will reduce the amount of scale that could be formed on in-house piping. This should improve the release of scale from in-house piping by year end. MAWC has been and will continue to work with Missouri Department of Natural Resources until the issue is completely addressed.

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Ω	IS WATER F	ROVIDED	RY MAWC	SAFF?
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Yes. Since the purchase of the Platte County Treatment Plant by Missouri
American Water in 1993, the water delivered has met and continues to meet all
state and federal guidelines for drinking water. The particle issue is aesthetic in
nature and does not impact the safety of the drinking water.

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- 7 Q. WILL MAWC BE SURVEYING CUSTOMERS RELATIVE TO WATER
- 8 QUALITY?
- 9 **A.** Yes, we will commence a phone survey in early March to assess water quality in the area. Based on results, we can appropriately target areas that require remedial action.

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- 13 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?
- 14 A. Yes, it does.

Summary of Misc Charges vs Tariff

		Current Tariff				
Item	STL Metro	Taney Co (Tri-Lakes)	Other	2011 Average Cost (Deters)	DR 234 (direct cost only)	Rebuttal Testimony - Gateley
Service Activation / Turn -on	\$25	\$30	\$21/trip	\$26	\$28	\$28
Service Activation - Overtime	\$150		\$125/trip	\$138	\$40	\$40
Temporary Service	\$61/application			\$46		
Restoration Charge	\$50/trip		\$42/trip	\$29		
Restoration Charge - After Hours	\$150/trip		\$125/trip	\$150		
Return Deposit Items / NSF	\$12/item	\$25	\$12/item	\$9	\$4	\$5
Meter Reading Appointment	\$20/trip				\$53	\$53
Rescheduled Taps	\$65/trip			\$67		
Discontinuation/Termination of Service / Turr	1					
off	\$31/trip	\$30		\$54	\$27	\$28
Discontinuation/Termination of Service -						
After Hours	\$150/trip			\$163	\$40	\$40
Usage from Hydrant	\$15/day		\$15/day	\$198		\$15/day
Hydrant Inspections	\$15/hydrant		\$15/hydrant	\$16		\$15
Investigation Report Fee	\$25					\$5
Meter Testing	\$75	\$50	\$62/trip	\$84	\$39	\$39
Service Connection Inspection		\$25				
Water Service Line Inspection		\$25	\$21	\$24		\$75
Late Charges		\$5 or 3% (greater)				\$5 or 3% (greater)
Service Call		Actual not less than \$40			\$55	
Service Call - After Hours					\$80	



Platte County Water System Serving Parkville, Riverside, Platte Woods and Wholesale Customers Lake Waukomis and District #6

Particle Issue

Timeline of Events and Actions Taken



Platte County Water System

- Water system acquired by Missouri American Water in 1993 when MAW purchased the Avatar Properties (also included Mexico, Warrensburg, St. Charles and Brunswick)
- Supply comes from 4 deep wells with capacity of 3.5 million gallons per day.
- About 100 miles of water main with 821 fire hydrants
- Water is purchased from Kansas City if needed during times of peak pumpage.
- Water in Platte County has been softened by the same method since the acquisition in 1993.



Water Quality

- Since the purchase of the Platte County Treatment Plant by Missouri American Water in 1993, the water delivered has met and continues to meet all state and federal guidelines for drinking water.
- The particle issue is aesthetic in nature and does not impact the safety of the drinking water.
- Water is generally classified as either corrosive or scale forming by the regulatory agencies. Unlike the current corrosive water situation in Flint, MI, some of Missouri American Water's operations including Platte County, are considered scale forming.
- The corrosive water in Flint, MI. has resulted in lead leaching from the aging water pipes into the water supply.



Water Treatment Process Includes Lime Softening

- Prior to softening, hardness level exceeds 300 parts per million, which is considered to be very hard on a water hardness scale.
- According to the American Water Works Association, more than 85% of the United States has hard water.
- Hardness level after softening is approximately 165 parts per million.
- Softening the water does cause the precipitation of calcium which causes the formation of "scale" in the water pipes.
- This scale builds up over time in the pipes and can be loosened by activities such as main breaks and flushing.
- Lime softening is used in multiple locations including St. Louis, St. Joseph, Mexico, Jefferson City and Brunswick to reduce hardness.



Particle Issues Timeline

- Minimal particle complaints through February 2010.
- Between 11/01/11 and 1/23/12 MAW received a total of 10 complaints all in the Thousand Oaks Subdivision.
- Water system flushing both neighborhood specific and entire water system:

November 2011 January 2012 July 2015

March 2013 October 2013

September 2014 September 2015

- Phosphate feed point moved July 2012.
- Verified no treatment compatibility issues exist with Kansas City Water in January 2013 and again in May 2013.
- Repeated consultations with phosphate vendor.



Timeline Continued

• Water sample collection and testing both in customer homes and in the water system:

July, October, December 2012 February, September and December 2013 February and September 2014 June and September 2015

- American Water labs in Belleville, IL and Delran, PA have tested samples obtained from customer homes.
- Phosphate level increased twice in August 2012 and July 2015.
- Water treatment plant filters replaced in June 2012 and June 2015.
- Fill rate for water storage tank at Thousand Oaks reduced in August 2015.
- PEX test loops installed in customer homes in February 2013 and evaluated in May 2014.



Timeline Continued

- In-home filtration systems installed in customer homes to evaluate particle build-up.
- Have worked with the Missouri Department of Natural Resources throughout the process.
- Visual inspection of two water tanks, including the Thousand Oaks Tank in 2013.
- First known issue with particles outside of Thousand Oaks surfaced in Riss Lake in 2015 and additionally there have been complaints in Montebella.
- Issues continue to be sporadic with some improvement.
- To date there have not been any water quality complaints addressing particles made by the wholesale customers, top ten largest water users or industry.



Next Steps

- Pilot testing for scale buildup on different pipe materials including copper, PVC and PEX in place as of Wednesday, Feb. 25 with evaluation to take place monthly over a period of months.
- Installation of a Carbon Dioxide system at the water treatment plant scheduled to be on-line by the middle of May.
- Results of changes to the water will not be instantaneous but will take several months to see in the water system.
- Ground breaking for new water treatment plant in 2016.
- Brief phone survey of MAW Platte County customers recently conducted to determine how widespread the issue with particles is in the system.
- Results will be shared with customers via direct mail later this month.