Exhibit No.:
Issue(s): *Normalized Residential Customer Usage*
Witness: *Jarrod J. Robertson*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case No.: *WR-2022-0303*
Date Testimony Prepared: *November 22, 2022*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

WATER, SEWER, & STEAM DEPARTMENT

DIRECT TESTIMONY

OF

JARROD J. ROBERTSON

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2022-0303

Jefferson City, Missouri
November 2022

DIRECT TESTIMONY OF

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MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2022-0303

Q. Please state your name and business address.

A. My name is Jarrod J. Robertson. My business address is 200 Madison Street, Jefferson City, Missouri 65101.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission ("Commission") as a Senior Research/Data Analyst with the Water, Sewer, & Steam Department. My credentials and a listing of cases in which I have filed testimony previously before this Commission are attached to this direct testimony as Schedule JJR-d1.

EXECUTIVE SUMMARY

Q. What is the purpose of your direct testimony?

A. The purpose of my testimony is to describe Commission Staff's ("Staff's) method of normalizing residential customer usage, and to sponsor the corresponding billing determinants utilized by the Commission's Auditing Department in calculating Staff's annualized revenues. The calculated normalized residential customer usage data is attached to this Testimony as Schedule JJR-d2.

The method Staff utilized to determine annual revenues is explained in the direct testimony of Staff witness, Ashley Sarver.

NORMALIZED RESIDENTIAL CUSTOMER USAGE

Q. What is data normalization?

A. Data (or customer usage) normalization is the process of organizing data in a way as to fit into a specific range or standard form. This process is advantageous for many reasons, but most importantly, by creating a homogenous data set, it allows for a comprehensive and cohesive view of a specific topic and simplifies the data for further analysis. Adjusting customer usage in this manner allows different sets of heterogeneous source data to be compared. Not all sources of customer usage are alike. Customer usage data stems from individual systems, each with its own particular characteristics, such as location of the system, number of customers on the system, differences in climate, and system-specific water rates which may affect discretionary customer use.

Q. Why is it necessary to normalize customer usage when calculating annual revenues?

A. Normalized water usage is one of the main billing determinants the Commission uses to establish commodity rates on a going forward basis. Speaking generally, billing determinants are customer usage data used to calculate customer's bills or to determine the collective revenue from rates for the entirety of a customer base. If normalized usage levels do not correspond to actual usage, the utility may not collect its Commission-authorized revenue. For example, if normalized usage levels are too high compared to actual usage, the result will be a lower commodity/usage rate, and the utility may under-earn, meaning the utility may earn less than its Commission-authorized revenue. If normalized usage levels are too low, the result would be a higher commodity/usage charge, and the utility may over-earn, meaning the utility may earn more than its Commission-authorized revenues. While there are many variables that determine if the utility collects more or less than its Commission-approved revenues, it is

important to establish a fair commodity/usage charge in order to lessen the effect this aspect has to alter revenues.

Therefore, a normalized level of usage must be determined in order to calculate normalized revenues.

Q. Please explain, in general terms, how the Commission sets rates.

A. Generally, in a rate case, the Commission determines an annual amount of revenues the utility needs to collect in order to cover its cost of service, in addition to receiving a reasonable return on investment. This amount is designated as the revenue requirement. The revenue requirement is then utilized to calculate rates. For most customers there are two components in a water utility's rate structure; a monthly customer charge, which is a "fixed" rate, and a commodity/usage rate. For some unmetered water customers, a flat rate is calculated that is designed to recover the same revenue as metered customers.

Q. How is the monthly customer charge – the fixed rate – calculated?

A. The customer charge, or fixed rate, is typically calculated by dividing the portion of the water utility's Commission-ordered revenue requirement that is not dependent on usage by the total number of customers. In situations where the resulting calculation results in an unreasonably low or high customer charge, some of the cost recovery may be shifted to or from the costs recovered in the commodity rate.

Q. How is the commodity, or usage, charge calculated?

A. The commodity, or usage, charge is calculated by dividing the remaining portion of the Commission-ordered revenue requirement by the normalized usage levels. As discussed earlier, if the normalized usage levels do not correspond with actual usage, the utility may not collect its Commission-authorized revenues. And likewise, if normalized usage levels are too

high, the commodity/usage rate will be lower, and if normalized usage levels are too low, the commodity/usage charge will be higher, and the utility may over-collect. While there are many factors that determine if the water utility collects more or less than its Commission-approved revenues, it is important to establish a fair commodity/usage charge to lessen the effect this aspect has to alter revenues.

Q. What data did Staff analyze to compute normalized residential customer usage for the purpose of calculating annual revenues?

A. One aspect investigated in determining annual revenues is customer usage. In this rate case, Staff gathered information related to residential customer usage on a per-day basis, within specific Missouri-American Water Company ("MAWC") service areas (each identified by MAWC as a "profit center"), and/or an entire tariff district, in which MAWC provides metered water service. In the context of data gathering, a service area refers to the data related to a single service territory or lone profit center, while a tariff district refers to the grouping of data related to two or more service areas/territories or profit centers.

Q. Where did Staff obtain the residential customer usage utilized in calculating normalized usage?

A. Staff analyzed historical usage data MAWC provided in its response to Data Request ("DR") No. 0102. This data provided Staff with monthly customer usage and monthly customer counts, per MAWC service area.

Q. Were any service areas excluded from this analysis?

A. The Rankin Acres and White Branch service areas were excluded from this analysis, as they do not have metered water rates and, therefore, do not have usage data.

Q. What method did Staff utilize to normalize residential customer usage in order to calculate MAWC's annual revenues?

A. Staff concluded that the most reasonable method to determine annual customer usage is to use a five-year average of actual usage for the period July 2017 through June 2022 to calculate per residential customer, per day, and per district averages. Averaging the data over the most recent five-year period represents reliable data and provides evidence of recent trends in customer usage. Many factors can influence usage, including water rates, installation of more efficient appliances, and changes in discretionary practices, such as reduced lawn sprinkling/irrigation. Usage may also be affected by external factors, such as climate change and the impacts of the COVID-19 pandemic. The impact of these factors change over time; therefore, using the most recent five years of data is a reasonable approach that uses actual data to support an annualized level of usage, while also providing for a reasonable determination of customers' usage habits.

Q. Why is using a five-year average to normalize residential customer usage the appropriate approach?

A. Staff's method is a reasonable approach that utilizes actual data to support an annualized level of usage. Averaging the data over the most recent five-year period produces reliable data and evidence of recent trends in customer usage. As discussed above, many factors, such as more efficient appliances, conservation, and lawn sprinkling/irrigation, impact water usage. Similarly, climate change and the COVID-19 pandemic have effected usage. These factors change over time; therefore, using the most recent five years of data provides for a reasonable determination of customers' usage habits, while avoiding using data too old to reflect the current situation. Furthermore, Staff's utilization of each service area's unique data

is reasonable because the usage characteristics of each service area are different from the other service areas.

Q. Why is focusing on recent usage patterns important?

A. It is important to focus on recent usage behavior as rates for MAWC are generally set for a two to four-year period.

Q. Regarding the inclusion of customer usage per service area in Staff's calculations, did Staff exclude any service areas, other than those without metered rates?

A. No. For certain service areas, MAWC did not have five years of data, whether due to a system being a recent acquisition, or a system which was merged into an existing system or grouping of existing systems. However, these systems were included in the normalization of overall customer usage utilized in calculating annual revenues.

Q. For which service areas does MAWC not have five years of customer usage data?

A. MAWC does not have five years of customer usage data for the following areas: Woodland Manor, Jaxson Estates, Anna Meadows, Lawson, Rogue Creek, Maplewood, Branson Metro, Lake Carmel, and Pevely Farms.

Q. What is Staff's recommendation?

A. Staff recommends the Commission authorize the utilization of a five-year average in order to normalize customer usage in the calculation of annual revenues.

Q. Does this conclude your direct testimony?

A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	)))))	Case No. WR-2022-0303

AFFIDAVIT OF JARROD J. ROBERTSON

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JARROD J. ROBERTSON and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Direct testimony of Jarrod J. Robertson*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JARROD J. ROBERTSON

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 17th day of November 2022.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

Notary Public

Jarrod J. Robertson

As a Senior Research/Data Analyst, with the Water, Sewer and Steam Department of the Commission Staff Division my core duties revolve around being a Case Manager for Small Company Rate Cases filed with the Commission. These duties include, but are not limited to: setting up the case Activities Timeline; authoring Customer Notice(s); coordinating meetings and correspondence between Staff, Office of the Public Counsel ("OPC"), and the utilities; disseminating information between Staff, OPC and the utilities; reviewing and if necessary, revising utilities' tariff(s), as well as performing rate design and authoring testimony when appropriate. I also hold both a Water Distribution Level – 1 and Wastewater Treatment Level – D, Operations Certification, in order to perform site inspections, where applicable.

Educational Background and Work Experience

Prior to starting at the Commission, in July of 2015, I worked as an Environmental Specialist at the Missouri Department of Natural Resources (DNR) for both the Hazardous and Solid Waste Management Programs, from October 2008 – July 2015. I worked for the University of Missouri, Columbia as a Research Specialist from 1998 – October 2008, in the Agronomy, Animal Science and Biochemistry Departments, respectively.

While at DNR, as Project Manager in both the Hazardous and Solid Waste Management Programs, I analyzed data related to the release/spill of gasoline/petroleum, such as Light Non- Aqueous Phase Liquids (LNAPL) and Non-Aqueous Phase Liquids (NAPL), at Underground/Aboveground Storage Tanks and violations which occurred at Permitted Landfills and Infectious Waste Disposal. The data analysis involved volatile and non-volatile chemical concentration(s), their toxic; carcinogenic; flammability and other health hazards and the subsequent "desired" remedial levels of said chemicals. While with the Hazardous Waste Management Program, I also performed qualitative data analysis of concentration vs time and/or distance and point by point analysis using both the Mann-Kendall and Linear Regression statistical methods.

While at the University of Missouri, I analyzed data as it relates to the genetic and biological study/manipulation of various organisms: maize (corn); bovine and bacteria. I worked on the "Maize Project," mapping the genetic structure of corn, using Simple Sequence Repeat (SSR) DNA Marker Technique; studied heat stress in bovine using microarray analysis; and in conjunction with the Department of Energy, created mutagenic strains of bacteria by deletion of a single gene or an operon (a cluster of genes) combined with cloning sequence(s) and amplification by way of a Poly Chain Reaction (PCR), to study the bacteria's possible uses in the natural breakdown of Uranium, as well as a possible alternative energy source due to the bacteria's ability to break down, and reduce sulfate into energy for mobility; in the Agronomy, Animal Science and Biochemistry Departments, respectively.

Previous Testimony Before the Public Service Commission

Case Number	Company	Type of Filing	Issue
WM-2022-0186	Foxfire Utility Company & Ozark Clean Water Company	Rebuttal Testimony	Merger Rationale
SA-2021-0017	Missouri American Water Company, Inc.	Surrebuttal & Live Testimony	General Info & Misc.
WR-2020-0303	Missouri American Water Company, Inc.	Direct, Rebuttal & Surrebuttal	Normalized, Declining Usage & Covid
WR-2017-0343	Gascony Water Company, Inc.	Rebuttal, Surrebuttal, & Live Testimony	Rate Design
WR-2017-0285	Missouri American Water Company, Inc.	Direct, Rebuttal & Surrebuttal	Normalized & Declining Usage
WR-2016-0064	Hillcrest Utility Operating Company, Inc.	Direct, Rebuttal & Live Testimony	Rate Design

Missouri-American Water Company

Case No. WR-2022-0303

Residential Customer Usage Per Day

Service Area	Usage Per Day
Tariff District No. 1*	0.2110
Tariff District No. 2**	0.1540

*St. Louis County & Pevely Farm
**All Other

Schedule JJR-d2