Exhibit No.:	
Issues:	Water Quality Issues
Witness:	Cindy M. Hebenstreit
Exhibit Type:	Surrebuttal
Sponsoring Party:	Missouri-American Water Company
Case No.:	WR-2007-0216 SR-2007-0217
Date:	July 27, 2007

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2007-0216
SR-2007-0217

SURREBUTTAL TESTIMONY

OF

CINDY M. HEBENSTREIT

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-2007-0216 SR-2007-0217

AFFIDAVIT OF CINDY M. HEBENSTREIT

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

Cindy M. Hebenstreit

State of Missouri
County of St. Louis
SUBSCRIBED and sworn to
Before me this 30th **day of** July **2007.**

Notary Public

My commission expires:

Staci A. Olsen
Notary Public - Notary Seal
State of Missouri
St. Charles County
Commission # 05519210
My Commission Expires: March 20, 2009

Surrebuttal Testimony of Cindy M. Hebenstreit

Q: PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A: My name is Cindy Hebenstreit. My business address is 727 Craig Road, St. Louis, Missouri 63141.

Q: WHOM ARE YOU EMPLOYED BY AND IN WHAT CAPACITY?

A: I am employed by American Water Company as Central Region Director, Environmental Management & Compliance. The Central Region includes the operations of Missouri-American Water Company ("MAWC" or "Company").

Q: PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND, QUALIFICATIONS AND BUSINESS EXPERIENCE.

A: I have earned a Bachelors Degree in Environmental Chemistry from Southwest Missouri State University, and a Masters Degree in Management from Fontbonne University. I have 25 years of experience in the field of environmental management, 18 of which have been in the water and wastewater industry. Since 2004, I have served as the Director of Environmental Management and Compliance at American Water Works Service Company Inc., managing a staff of 60 that are responsible for environmental management, water quality compliance, waste water and cross connection. Additionally, I've received master's level certification in

Hazardous Material Management, and I am certified as a Qualified Environmental Professional.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: The purpose of my testimony is to respond to certain aspects of the rebuttal testimony of Alan Ratermann, witness for the Utility Workers Union of America, Local 335 ("UWUA Local 335"), regarding potential water quality issues resulting from asbestos material in pipes and lead material in pipes.

Q: MR. RATERMANN EXPRESSES CONCERN THAT CONSUMERS ARE AT RISK OF ASBESTOS INGESTION DUE TO THE ASBESTOS-CEMENT PIPES ("AC PIPES") IN THE MAWC SYSTEM. DO YOU AGREE WITH HIS STATEMENTS IN THIS REGARD?

A: No. Mr. Ratermann's concerns are unwarranted for a number of reasons. First, the amount of AC pipe in our systems is *de minimis*. Secondly, the physical characteristics of our water make occurrence of asbestos contamination unlikely. Finally, test results for asbestos have never found fibers to be present in our water.

Q: REGARDING THE FIRST POINT ABOVE, WHAT IS THE BASIS FOR YOUR POSITION THAT THE AMOUNT OF AC PIPE ON THE MAWC SYSTEM IS *DE MINIMIS*?

A: The simple fact is that the amount of AC pipe in the MAWC system is extremely limited. In St. Louis County for example, AC pipe comprises less than 2% of the total pipe network.

Q: PLEASE EXPLAIN HOW THE PHYSICAL CHARACTERISTICS OF THE WATER MAKE ASBESTOS CONTAMINATION UNLIKELY.

A: Historical data has indicated that water provided by MAWC is not corrosive (sometimes described as not "aggressive") and therefore will not cause the interior of the pipe wall to fail and leach asbestos into the water system.

Q: IS ASBESTOS IN WATER A CONCERN FOR OTHER SYSTEMS IN MISSOURI?

A: No. In 1992, the Federal Environmental Protection Agency ("EPA") issued new regulations for detecting, monitoring and treating asbestos in the public drinking water supply. The Missouri Department of Natural Resources ("DNR") followed EPA protocol in determining how to implement the new rules for asbestos and, as part of its review, the DNR conducted "worst case" testing for asbestos in the public drinking water supply across the state focusing on systems with AC pipe and aggressive water. The DNR found no asbestos fibers present in the water samples tested. As a result, the DNR has waived all future testing for asbestos by water systems in the state of Missouri, including MAWC.

Q: IS INGESTED ASBESTOS A LIFE THREATENING RISK FOR MAWC CUSTOMERS AS PURPORTED BY MR. RATERMANN?

A: No. There is no life threatening risk from exposure to drinking water in the MAWC system. Health risks due to asbestos are predominantly from air exposure. The Company conducted voluntary asbestos testing of water in its system in 2001 and 2004 and, on both occasions, no asbestos fibers were present in the water supply. Further, it is the low likelihood of fibers being present and the low health risk due to ingested fibers that form the basis for the DNR's above referenced position on asbestos. Moreover, the World Health Organization ("WHO"), in a 2003 publication titled "Asbestos in Drinking-water", concluded that there "is no consistent, convincing evidence that ingested asbestos is hazardous to health." (See *Asbestos in Drinking-water: Background document for development of WHO Guidelines for Drinking-water Quality.* Geneva, World Health Organization, 2003)

Q: WHAT ABOUT THE EPA STUDY THAT MR. RATERMANN CITES AS SUPPORT FOR HIS ALLEGATIONS?

A: Mr. Ratermann's reliance on this outdated study is misplaced. The study was published in 1987, several years prior to the EPA's final rules on asbestos. While it is true that prior to the codification of the EPA's current rules, there was much debate among the scientific community regarding ingested asbestos, it is equally clear that all of this scientific knowledge was considered when EPA issued its final asbestos in drinking water rule in 1992.

To the extent that any legitimate health risks exist, those risks would be incorporated into that rulemaking. In addition, the EPA issues current "Fact Sheets" (included as Schedule CMH-A), which reflects the accepted scientific conclusions regarding asbestos. It is clear that Mr. Ratermann's allegations are inconsistent with the authoritative publications on this topic.

Q: ON PAGE 3 OF HIS TESTIMONY, MR. RATERMANN IMPLIES THAT MAWC HAS NOT MET ITS OBLIGATION TO COMMUNICATE WITH ITS CUSTOMERS REGARDING ASBESTOS. IS HE CORRECT?

A: No. At all times, the Company has met its obligations for reporting and notifying its customers regarding contaminants in the water supply. Under state regulations, the Company is required to send customers an annual report informing them about the levels of contaminants that are found in the water supply, and it does so each year. As noted above, DNR has waived any asbestos monitoring requirements for all Missouri drinking water systems because it found the public drinking water supply in Missouri is not vulnerable to asbestos contamination. In recent years, the Company conducted voluntary asbestos testing in 2001 and 2004 and, on both occasions, no asbestos fibers were present in the water supply. Thus, no specific communications about asbestos in connection with drinking water have been necessary.

Q: IN ADDITION TO AC PIPE, MR. RATERMANN EXPRESSES CONCERN ABOUT LEAD MATERIALS USED IN THE WATER DISTRIBUTION SYSTEMS. DO YOU AGREE WITH HIS POSITION THAT THESE PIPES SHOULD BE REPLACED?

A: Absolutely not. The United States EPA and the Missouri DNR recognized that lead material was a common pipe joining material for pipes prior to 1989. The federal "lead free" statute and the Missouri "lead free" statute specifically exempts lead used to repair lead joints connecting cast iron pipes which were in use prior to 1989 from the lead pipe ban. See Section 640.120 RSMo.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes, it does.

Consumer Factsheet on: ASBESTOS

List of Contaminants

As part of the Drinking Water and Health pages, this fact sheet is part of a larger publication:
National Primary Drinking Water Regulations

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

What is Asbestos and how is it used?

Asbestos is a fibrous mineral occurring in natural deposits. Because asbestos fibers are resistant to heat and most chemicals, they have been mined for use in over 3,000 different products, including roofing materials, brake pads, and cement pipe often used in distributing water to communities.

Why is Asbestos being regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for asbestos has been set at 7 million fibers per liter of water (M.L.) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has also been set at 7 M.L. because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

What are the health effects?

Short-term: Asbestos is not known to cause any health problems when people are exposed to it at levels above the MCL for relatively short periods of time.

Long-term: Asbestos has the potential to cause the following effects from a lifetime exposure at levels above the MCL: lung disease; cancer.

How much Asbestos is produced and released to the environment?

Asbestos fibers may be released from natural sources such as erosion of asbestos-containing ores, but the primary source is through the wear or breakdown of asbestos-containing materials, particularly from the wastewaters of mining and other industries, and by the use of asbestos cement pipes in water supply systems.

From 1987 to 1993, according to the Toxics Release Inventory, asbestos releases to water and land totaled nearly 9 million lbs. These releases were primarily from asbestos products industries which use asbestos in roofing materials, friction materials, and cement. The largest releases occurred in Pennsylvania and Louisiana.

What happens to Asbestos when it is released to the environment?

As a naturally occurring substance, asbestos can be present in surface and ground water. Small fibers may be carried long distances by water currents before settling. Asbestos fibers do not bind to soils, but nevertheless do NT migrate to ground water through soils. Asbestos is not expected to accumulate in aquatic life.

How will Asbestos be detected in and removed from my drinking water?

The regulation for asbestos became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples once and analyze them to find out if asbestos is present above 7 M.L.. If it is present above this level, the system must continue to monitor this contaminant once every 3 months.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of asbestos so that it is consistently below that level. The following treatment methods have been approved by EPA for removing asbestos: Coagulation/Filtration, Direct and Diatomite Filtration, Corrosion Control.

How will I know if Asbestos is in my drinking water?

If the levels of asbestos exceed the MCL, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 7 M.L. (million fibers per liter)

MCL: 7 M.L.

Asbestos Releases to Water and Land, 1987 to 1993 (in pounds):

	Water	Land
TOTALS	32,650	8,620,439

Top Five States*		
PA	0	2,945,049

LA	61	2,256,400
TX	0	1,737,200
AR	1,000	568,227
VA	0	480,000

	Major Industries*	
Asbestos products	3,005	2,510,227
Alkalis, chlorine	1,973	2,256,404
Industrial organic chems	0	1,230,000
Asphalt felts, coatings	5	871,067
Auto parts	0	563,694
Petroleum refining	0	314,560
Plastic pipes	0	235,200
Shipbuilding, repairing	0	211,400

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone books government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call: EPAs Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.

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Technical Factsheet on: ASBESTOS

List of Contaminants

As part of the Drinking Water and Health pages, this fact sheet is part of a larger publication:
National Primary Drinking Water Regulations

Drinking Water Standards

MCLG: 7 million fibers per liter (MFL) (fibers > 10 microns in length)
MCL: 7 million fibers per liter (MFL)
HAL(child): none

Health Effects Summary

Acute: No reliable data are available on the acute toxic effects from short-term exposures to asbestos. No Health Advisories have been established for short-term exposures.

Chronic: Asbestos has the potential to cause lung disease from a lifetime exposure at levels above the MCL.

Cancer: Asbestos has the potential to cause cancer of the lung and other internal organs from a lifetime exposure at levels above the MCL.

Usage Patterns

Because asbestos fibers are resistant to heat and most chemicals, they have been mined for use in a variety of products (over 3,000 different products in the United States). In 1988, asbestos was consumed in roofing products, 28%; friction products, 26%; asbestos cement pipe, 14%; packing and gaskets, 13%; paper, 6%; and other 13%.

Pipe products find use in water supply, sewage disposal, & irrigation systems. Asbestos cement sheets are used in a wide variety of construction applications. Other uses of asbestos include fire resistant textiles, friction materials (ie, brake linings), underlayment & roofing papers, & floor tiles.

Crocidolite can be spun & woven using modified cotton industry machinery; the asbestos cloth is used for fireproof clothing & curtains.

Most uses of asbestos were banned in the United States by the EPA on July 12, 1989 because of potential adverse health effects in exposed persons. The remaining, currently allowed uses of asbestos include battery separators, sealant tape, asbestos thread, packing materials, and certain industrial uses of both sheet gaskets and beater-add gaskets.

Release Patterns

Asbestos fibers may enter the environment from natural sources such as erosion of asbestos-containing ores, but the primary source of asbestos in the environment is through the wear or breakdown of asbestos-containing materials. Asbestos fibers have been released into water by the dumping of mining tailings into

lakes, by the runoff of process and air scrubber water into lakes and streams, and by the use of asbestos cement pipes in water supply systems.

Over one million tons of asbestos is contained in friable materials in ships, buildings, power plants, chemical plants, refineries, and other locations of high temperature equipment. Other products may include insulation, automobile brakes, cement pipes, and roofing materials. The maintenance, repair, and removal of this material will account for the principal releases in the future. Asbestos fibers also can be released to the environment from asbestos processing, including milling, manufacturing, and fabrication.

From 1987 to 1993, according to the Toxics Release Inventory, asbestos releases to land totalled nearly 9 million lbs., and releases to water totalled nearly 33,000 lbs. These releases were primarily from asbestos products industries which use asbestos in roofing materials friction materials, and cement. The largest releases occurred in Pennsylvania and Louisiana.

Environmental Fate

As a naturally occurring substance, asbestos can be present in surface and ground water. Because asbestos fibers in water do not evaporate into air or break down in water, small fibers and fiber-containing particles may be carried long distances by water currents before settling to the bottom; larger fibers and particles tend to settle more quickly.

Asbestos does not tend to adsorb to solids normally found in natural water systems, but some materials (trace metals and organic compounds) have an affinity for asbestos minerals. The fibers are not able to move down through soil to ground water.

Asbestos is not affected by photolytic processes and is considered to be non-biodegradable by aquatic organisms. Asbestos fibers are not broken down to other compounds in the environment and, therefore, can remain in the environment for decades or longer.

There are no data regarding the bioaccumulation of asbestos in aquatic organisms.

Chemical/Physical Properties

CAS Number: 1332-21-4

Color/ Form/Odor: White, gray, green or brown crystalline fibers; odorless

Solubilities: insoluble

Soil sorption coefficient: N/A

Bioconcentration Factor: N/A; not expected to bioconcentrate

Common Ores: Amosite, Chrysotile, Crocidiolite; Tremolite; Ascarite

Other Regulatory Information

Monitoring:

– For Ground and Surface Water Sources:

Initial Frequency-1 sample once every 9 years

Repeat Frequency-1 sample once every 9 years

-- Triggers - If detect at > 7 MFL, sample quarterly.

Analysis

Reference Source	Method Number
Transmission Electron Microscopy	EPA 800/4-83-043

Treatment/Best Available Technologies: Coagulation/Filtration; Direct and Diatomite Filtration; Corrosion Control

Toxic Release Inventory - Releases to Water and Land, 1987 to 1993 (In pounds):

		Water	Land	
TOTALS		**32,650**	**8,620,439**	
Top Five States*				
PA	0	2,945,049		
LA	61	2,256,400		
TX	0	1,737,200		
AR	1,000	568,227		
VA	0	480,000		
Major Industries*				
Asbestos products			3,005	2,510,227
Alkalis, chlorine			1,973	2,256,404
Industrial organic chems			0	1,230,000
Asphalt felts, coatings			5	871,067
Auto parts			0	563,694
Petroleum refining			0	314,560
Plastic pipes			0	235,200
Shipbuilding, repairing			0	211,400

* State/Industry totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

For Additional Information:

EPA can provide further regulatory and other general information:
EPA Safe Drinking Water Hotline - 800/426-4791

Other sources of toxicological and environmental fate data include:
Toxic Substance Control Act Information Line - 202/554-1404
Toxics Release Inventory, National Library of Medicine - 301/496-6531
Agency for Toxic Substances and Disease Registry - 404/639-6000

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