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March 16, 2020

Mr. Joseph E. Batis, MAI, R/W-AC
Edward J. Batis & Associates
313 N. Chicago Street
Joliet, IL 60432

Re: Engineering Report
Water and Wastewater System Appraisal
Eureka, Missouri

Dear Mr. Batis:

Flinn Engineering, LLC is pleased to present the following information regarding the water and wastewater systems owned by the City of Eureka, Missouri (City) as part of the appraisal process you are completing for Missouri American Water. The purpose of this Engineering Report is to provide a high-level review of the condition of the system, estimate the 2019 installation cost, and estimate the depreciated book value of the assets. The City provided limited information on the assets. The original installation costs were not recorded by the City. The above ground assets are listed with 2019-2020 replacement costs in the City's insurance list of assets (**Appendix A**). The City provided the year of installation for the above ground assets. The buried assets (water distribution and sewer collection systems) are not listed in the insurance list of assets. The 2019 estimated cost of installation for the buried assets was calculated using a combination of an engineering opinion of cost to install the assets based on knowledge of other systems of similar size, as well as correspondence from the City, vendors, and contractors. The year of installation for the buried assets was estimated based on the installation of the above ground assets, described in more detail below. The 2019 estimated installation cost was depreciated based on the age of each asset.

The estimated values listed in this report do not include the value of land or easements.

The high-level review of the condition of the system is based on the data provided by the City and photos that were taken by others during a site visit. Flinn Engineering did not visit the site.

The water system include six (6) wells, eight (8) booster pump stations, seven (7) storage tanks, and the water distribution system. The wastewater system includes a treatment plant, ten (10) lift stations, and the sewer collection system.

Wells

The six (6) wells are listed in the insurance asset list with replacement costs. The line items for each well site typically include a separate line for the building, well casing, pump, generator, electrical, disinfection equipment, and softening equipment. The replacement values listed on the insurance asset list were used for the 2019 installation cost. The values were then depreciated based on the age of the asset. **Table 1** summarizes the well information and the

installation date of each well. The installation dates were provided by the City. The capacity and depth are based the "Water Distribution system Evaluation" dated December 28, 2018 by Bartlett & West. Water softening equipment was added at each well site in 2012. The wells appear to be well-maintained and in good condition. Although some assets associated with the wells are fully depreciated (typically the well pump and the generator), they are still in operation and could continue to stay in operation well beyond the depreciation period.

Table 1-Well Installation Data

Well No.	Date of Installation	Pump Capacity (gpm)	Depth (ft)
1	1977	830	500
5	1990	860	645
6	1996	460	1235
8	2003	680	865
9	2017	800	635
10	2006	480	695

Storage Tanks

The water system includes seven (7) storage tanks that are listed in the insurance asset list with replacement costs. Six (6) of the tanks have a capacity of 500,000 gallons and one (1) has a capacity of 250,000 gallons. The replacement values listed on the insurance asset list were used for the 2019 installation cost and depreciated based on the age of the asset. **Table 2** summarizes the storage tank information and the installation date of each. The installation dates are from various sources provided by the City. The capacity is based the "Water Distribution system Evaluation" dated December 28, 2018 by Bartlett & West. The storage tanks are welded steel tanks and the exterior paint appears to good condition, with the exception of some mildew. The two (2) Viola tanks are fully depreciated, but are still in operation and could continue to stay in operation well beyond the depreciation period.

Table 2 – Storage Tank Data

Tank Name	Date of Installation	Type	Volume (gallons)
Arbors	2017	Ground Storage	500,000
Forby Road	2005	Ground Storage	500,000
Legends	1996	Ground Storage	500,000
Niehoff/Augustine	2007	Standpipe	500,000
Brock/Palisades	2003	Ground Storage	500,000
Small Viola	1966	Ground Storage	250,000
Large Viola	1977	Ground Storage	500,000

Booster Pump Stations

The water system includes eight (8) booster pump stations that are listed in the insurance asset list with replacement costs. The line items for each booster pump station site typically include a separate line for the building, pump, generator, and electrical. The replacement values listed on the insurance asset list were used for the 2019 installation cost and depreciated based on the

age of the asset. **Table 3** summarizes the booster pump station information and the installation date of each. The installation dates are from various sources provided by the City. The number of pumps and pump capacity is based the "Water Distribution system Evaluation" dated December 28, 2018 by Bartlett & West. Although some assets associated with the booster pump stations are fully depreciated (typically the pump and the generator), they are still in operation and could continue to stay in operation well beyond the depreciation period.

Table 3 – Booster Pump Station Data

Booster Station Name	Date of Installation	Number of Pumps	Design Flow (gpm)
Arbors	2017	4	490
Forby Road	2005	2	80
Legends	1996	2 (and Jockey Pump)	1,000
Niehoff/Augustine	2007	3	
Brock/Palisades	2003	2 (and Jockey Pump)	75
Small Viola	1966	2	600
Large Viola	1977	2	
Emerald Forest	1996	2	96

Water Distribution System

The water distribution system includes approximately 58.8 miles of water main ranging in size from 2-inch to 12-inch, 642 fire hydrants, associated valves and fittings, and 3,947 customer service connections and meters. The City provided a list of water main by type and size. The water main material includes iron, asbestos cement, and PVC. Based on the "Census of Missouri Public Water Systems 2019" (excerpt in **Appendix B**) from the Missouri Department of Natural Resources (MDNR), the City began operating the water system in 1959. We assumed the distribution system was expanded with the addition of each well. The quantity of distribution assets was prorated based on the approximate amount of new buildings in the period between well installations. The St. Louis County GIS parcel data includes the year each building was built. The data was queried for buildings within the municipality of Eureka. The data included 3,925 parcels, which is consistent with the number of customers (3,947). The estimated percent of distribution assets per period is shown in **Table 4**. **Table 4** summarizes the length of main by size and year installed, as well as the number of fire hydrants, services, and meters installed each year.

Table 4 – Distribution System Assets by Year

	1959	1977	1990	1996	2003	2006	2017	Total
2-Inch Water Main	634	1,267	634	634	1,901	634	634	6,336
4-Inch Wate Main	634	1,267	634	634	1,901	634	634	6,336
6-Inch Water Main	11,088	22,176	11,088	11,088	33,264	11,088	11,088	110,880
8-Inch Water Main	12,137	24,274	12,137	12,137	36,410	12,137	12,137	121,368
10-Inch Water Main	5,914	11,827	5,914	5,914	17,741	5,914	5,914	59,136
12-Inch Water Main	655	1,310	655	655	1,965	655	655	6,549
Total	31,061	62,121	31,061	31,061	93,182	31,061	31,061	310,605 feet 58.8 miles
% Main By Year	10%	20%	10%	10%	30%	10%	10%	100%
# Fire Hydrants By Year	64	129	64	64	193	64	64	642
# Services/Meters By Year	395	789	395	395	1183	395	395	3947

The cost to install water main, fire hydrants, and services and meters in 2019 is listed in **Table 5**. The estimate assumes the water main is about 3 feet deep and includes design, excavation, material, installation, required fittings and valves, backfill, and restoration. **Table 5** summarizes the estimated 2019 cost for the distribution system. The water distribution system was not observed for condition. Based on the condition of the above ground assets, it is assumed that the water distribution system is also well-maintained and is assumed to be in good condition.

Table 5 – 2019 Estimated Installation Cost – Distribution System

Asset Description	Quantity	Unit	Estimated Unit Cost 2019	2019 Estimated Installation Cost
2-inch Water Main	6,336	feet	$ 30.00	$ 190,080
4-inch Wate Main	6,336	feet	$ 45.00	$ 285,120
6-inch Water Main	110,880	feet	$ 50.00	$ 5,544,000
8-inch Water Main	121,368	feet	$ 55.00	$ 6,675,240
10-inch Water Main	59,136	feet	$ 65.00	$ 3,843,840
12-inch Water Main	6,549	feet	$ 75.00	$ 491,175
Fire Hydrants	642	each	$3,500.00	$ 2,247,000
Services and Meters	3,947	each	$1,500.00	$ 5,920,500
			Total	**$ 25,196,955**

Wastewater Treatment Plant

The wastewater treatment plant (WWTP) is a three-cell aerated lagoon plant with a design flow of 2.8 million gallons per day, according to the MDNR Operating Permit (excerpt in **Appendix C**). The WWTP is listed in the insurance asset list with replacement costs. The line items for the WWTP include a separate line for buildings, pumps, generator, electrical, and treatment equipment. The replacement values listed on the insurance asset list were used for the 2019 installation cost and depreciated based on the age of the asset. The WWTP was constructed in 2005, according to City staff. In addition to the three-cell lagoon, the WWTP includes an influent lift station, bar screen, fine-bubble air diffusers, Aquamats®, and recirculation pumps. The WWTP appears to be well-maintained and in good condition.

Sewer Lift Stations

The wastewater system includes ten (10) sewer lift stations. Nine (9) of the lift stations are listed in the insurance asset list with replacement costs. The Arbors Lift Station was installed in 2018 at a cost of $350,000, according to City staff. The lift stations are shown as one line item for each lift station on the insurance asset list. The replacement values listed on the insurance asset list and the reported cost of the Arbors Lift Station were used for the 2019 installation cost and depreciated based on the age of the asset. **Table 6** summarizes the installation date of each lift station. The installation dates were provided by the City. Other than the Arbors Lift Station, all lift stations are fully depreciated. Most of the assets associated with the lift stations are underground and could not be observed. Since they are still in operation and could continue to stay in operation well beyond the depreciation period, it is assumed they are in good condition.

Table 6 – Lift Station Data

Lift Station Name	Date of Installation
Cahoon	1950
Kircher (Stonebridge)	1950
Hilltop	1976
Highway 109	1986
KOA-South Fox Creek	1989
North Street - E	1995
North Street - W	1995
Truitt (Raineri)	2000
Enderbush	2004
The Arbors	2018

Sewer Collection System

The sewer collection system includes approximately 62.5 miles of sewer main ranging in size from 4-inch to 48-inch, 1,452 manholes, and 3,888 customer service laterals. The City provided a list of sewer by type and size. The sewer main material includes PVC, clay, and steel. The oldest sewer lift station was installed in 1950. We assumed the sewer system was expanded with the installation of lift stations. The percentage of assets per period were assumed to be similar to the calculation described above for the water distribution assets. **Table 7** summarizes the length of sewer main by size and year installed, as well as the number of manholes and service laterals.

Table 7 – Sewer Collection System Assets by Year

	1950	1976	1987	1995	2000	2005	2018	Total
4-inch Sewer	379	757	379	379	1,136	379	379	3,786
8-inch Sewer	28,661	57,322	28,661	28,661	85,983	28,661	28,661	286,609
10-inch Sewer	969	1,937	969	969	2,906	969	969	9,685
12-inch Sewer	802	1,603	802	802	2,405	802	802	8,017
15-inch Sewer	339	678	339	339	1,017	339	339	3,389
18-inch Sewer	395	789	395	395	1,184	395	395	3,947
24-inch Sewer	90	179	90	90	269	90	90	897
36-inch Sewer	1,324	2,648	1,324	1,324	3,972	1,324	1,324	13,239
48-inch Sewer	47	94	47	47	140	47	47	468
Total	33,004	66,007	33,004	33,004	99,011	33,004	33,004	330,037 feet 62.5 miles
% Sewer By Year	10%	20%	10%	10%	30%	10%	10%	1
# Manholes By Year	145	291	145	145	436	145	145	1452
# Laterals By Year	389	777	389	389	1166	389	389	3888

The cost to install sewer main, manholes, and service laterals in 2019 is listed in **Table 8**. The estimate assumes the sewer is about 6 feet deep and includes design, excavation, material, installation, backfill, and restoration. **Table 8** summarizes the estimated 2019 cost for the sewer collection system. The sewer collection system was not observed for condition. Based on the condition of the above ground assets, it is assumed that the sewer collection system is also well-maintained and is assumed to be in good condition.

Table 8 – 2019 Estimated Installation Cost – Sewer Collection System

Asset Description	Quantity	Unit	Estimated Unit Cost 2018	2018 Estimated Installation Cost
4-inch Sewer	3,786	feet	$ 45.00	$ 170,370
8-inch Sewer	286,609	feet	$ 55.00	$15,763,495
10-inch Sewer	9,685	feet	$ 65.00	$ 629,525
12-inch Sewer	8,017	feet	$ 75.00	$ 601,275
15-inch Sewer	3,389	feet	$ 80.00	$ 271,120
18-inch Sewer	3,947	feet	$ 90.00	$ 355,230
24-inch Sewer	897	feet	$ 95.00	$ 85,215
36-inch Sewer	13,239	feet	$ 100.00	$ 1,323,900
48-inch Sewer	468	feet	$ 110.00	$ 51,480
Manholes	1452	each	$3,500.00	$ 5,082,000
Service Laterals	3888	each	$ 300.00	$ 1,166,400
			Total	**$25,500,010**

Estimated Book Value

Table 9 shows a summary of the estimated cost for installation in 2019 and the depreciated value based on the age of the assets. The depreciation calculation is included in **Appendix D**. The depreciation periods are based on depreciation periods used by the Missouri Public Service Commission (PSC) during recent rate cases. The depreciation schedules from six (6) recent rate cases are included in **Appendix E**. Three (3) are from water systems and three (3) are from wastewater systems. The depreciation periods used are summarized in **Table 10.**

Table 9 - Summary of Book Value

	Estimated 2019 Installation Cost	Estimated Depreciated Book Value
Eureka Water System	$ 35,646,122.00	$ 18,155,170.19
Eureka Wastewater System	$ 28,734,997.00	$ 13,293,844.11
Total	$ 64,381,119.00	$ 31,449,014.30

Table 10 – Depreciation Periods

Asset	Depreciation Period (years)
Buildings (Structures/Improvements)	44
Wells Casing/Hole	55
Well Pumps	12
Generators	15
Electrical (Structures/Improvements)	44
Disinfection/Softening Equipment	35
Booster Pumps	7
Tanks	42
Water Main	50
Fire Hydrants	40
Services and Meters	35
Wastewater Treatment Facilities	22
WW Pumps/Lift Stations	10
Sanitary Sewer, Manholes, Laterals	50

Overall the water and wastewater systems appear to be in good condition and well-maintained. Although many of the assets are fully depreciated, they are still in operation and could continue to stay in operation well beyond the depreciation period.

Thank you for the opportunity to assist you on this project. Please let me know if you have any questions.

Sincerely,

Kelly A. Simpson

Kelly A. Simpson, PE, LEED® AP
Owner

Enclosures:
Appendix A – Insurance Asset List
Appendix B – MDNR 2019 Census
Appendix C – MDNR Operating Permit
Appendix D – Depreciation Calculation
Appendix E – MDNR Depreciation Schedules

SAINT LOUIS AREA INSURANCE TRUST
POLICY YEAR 7/01/19-7/01/20
CITY OF EUREKA

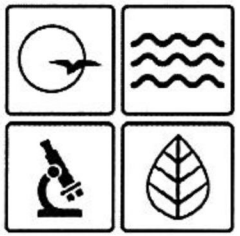
DESCRIPTION	LOCATION	BUILDING 2019-20 VALUES	CONTENTS 2019-20 VALUES
LIFT STATION & GENERATOR BLDG	HWY. 109	$ 11,709	$ 206,623
LIFT STATION & GENERATOR BLDG	HILLTOP CENTER DRIVE	$ 5,854	$ 160,707
LIFT STATION & BUILDING	CAHOON DRIVE	$ 2,928	$ 45,916
WELL 5 BLDG	DREWEL PARK	$ 74,614	$ -
PUMP	DREWEL PARK	$ 73,467	$ -
CASING/HOLE	DREWEL PARK	$ 80,354	$ -
GENERATOR	DREWEL PARK	$ 45,916	$ -
ELECTRICAL	DREWEL PARK	$ 45,916	$ -
DISINFECTION	DREWEL PARK	$ 44,768	$ -
WATER SOFTENING EQUIPMENT	DREWEL PARK	$ 306,000	$ -
S. FOX CREEK LIFT STATION/GEN BLDG.	1850 W. OLD HWY. 66	$ 179,142	$ 44,150
PAVILION	HILLTOP PARK	$ 36,182	$ -
LIFT STATION	NORTH STREET (W) **	$ 25,254	$ -
LIFT STATION	NORTH STREET (E) **	$ 16,071	$ -
LIFT STATION	ENDERBUSH LANE **	$ 34,437	$ -
SEWAGE LIFT STATION	TRUITT DRIVE **	$ 29,857	$ -
LIFT STATION	KIRCHER PARK - WILLIAMS ROAD NEAR I-44 **	$ 149,229	$ -
TANK #1	NIEHOFF DRIVE	$ 126,270	$ -
BOOSTER BUILDING, PUMPS, ELECTRICAL	NIEHOFF DRIVE	$ 274,666	$ -
PUMPS	NIEHOFF DRIVE	$ -	$ -
ELECTRICAL	NIEHOFF DRIVE	$ -	$ -
TANK .5MG #7	NIEHOFF DRIVE	$ 477,939	$ -
TANK #3	BROCK ROAD	$ 376,200	$ -
WELL HOUSE 4	BROCK ROAD	$ -	$ -
ELECTRICAL	BROCK ROAD	$ -	$ -
PALISADES BOOSTER STA. BLDG	BROCK ROAD	$ 57,396	$ -
PUMPS	BROCK ROAD	$ 68,874	$ -
ELECTRICAL	BROCK ROAD	$ 80,354	$ -
GENERATOR	BROCK ROAD	$ 68,874	$ -
WELL 1 BLDG	HOWERTON LANE	$ 74,614	$ -
PUMP	HOWERTON LANE	$ 73,467	$ -
CASING/HOLE	HOWERTON LANE	$ 80,354	$ -
GENERATOR	HOWERTON LANE	$ 45,916	$ -
ELECTRICAL	HOWERTON LANE	$ 45,916	$ -
DISINFECTION	HOWERTON LANE	$ 44,768	$ -
WATER SOFTENING EQUIPMENT	HOWERTON LANE	$ 306,000	$ -
WELL 8 BLDG	VIOLA LANE	$ 74,614	$ -
WATER SOFTENING EQUIPMENT	VIOLA LANE	$ 306,000	$ -
PUMP	VIOLA LANE	$ 73,467	$ -
CASING/HOLE	VIOLA LANE	$ 80,354	$ -
GENERATOR	VIOLA LANE	$ 103,312	$ -
ELECTRICAL	VIOLA LANE	$ 45,916	$ -
DISINFECTION	VIOLA LANE	$ 44,768	$ -
HUNTERS BOOSTER BLDG	VIOLA LANE	$ 57,396	$ -
PUMPS	VIOLA LANE	$ 51,656	$ -
ELECTRICAL	VIOLA LANE	$ 68,874	$ -
HILLTOP BOOSTER BLDG	VIOLA LANE	$ 57,396	$ -
PUMPS	VIOLA LANE	$ 45,916	$ -
ELECTRICAL	VIOLA LANE	$ 57,396	$ -
TANK .5MG #4	VIOLA LANE	$ 376,200	$ -
TANK .2MG #2	VIOLA LANE	$ 286,978	$ -
TANK .5MG #6	FORBY ROAD	$ 376,200	$ -
BOOSTER STATION	FORBY ROAD	$ 110,376	$ -
GENERATOR	FORBY ROAD	$ 44,150	$ -
WELL 6 BLDG. #1	LEGENDS - 503 VISTA HILLS COURT	$ 74,614	$ -
PUMP	LEGENDS - 503 VISTA HILLS COURT	$ 73,467	$ -
CASING/HOLE	LEGENDS - 503 VISTA HILLS COURT	$ 80,354	$ -

SAINT LOUIS AREA INSURANCE TRUST
POLICY YEAR 7/01/19-7/01/20
CITY OF EUREKA

DESCRIPTION	LOCATION	BUILDING 2019-20 VALUES	CONTENTS 2019-20 VALUES
GENERATOR	LEGENDS - 503 VISTA HILLS COURT	$ 103,312	$ -
ELECTRICAL	LEGENDS - 503 VISTA HILLS COURT	$ 45,916	$ -
DISINFECTION	LEGENDS - 503 VISTA HILLS COURT	$ 44,768	$ -
LEGENDS BOOSTER BLDG.	LEGENDS - 503 VISTA HILLS COURT	$ 68,874	$ -
PUMPS	LEGENDS - 503 VISTA HILLS COURT	$ 86,093	$ -
ELECTRICAL	LEGENDS - 503 VISTA HILLS COURT	$ 68,874	$ -
TANK .5 MG #5	LEGENDS - 503 VISTA HILLS COURT	$ 376,200	$ -
WELL 6 BLDG. #2	LEGENDS - 503 VISTA HILLS COURT	$ 83,640	$ -
WATER SOFTENING EQUIPMENT	LEGENDS - 503 VISTA HILLS COURT	$ 306,000	$ -
BOOSTER BUILDING	EMERALD FOREST-832 EMERALD OAKS CT	$ 50,508	$ -
PUMPS	EMERALD FOREST-832 EMERALD OAKS CT	$ 45,916	$ -
ELECTRICAL	EMERALD FOREST-832 EMERALD OAKS CT	$ 34,437	$ -
GENERATOR	EMERALD FOREST-832 EMERALD OAKS CT	$ 45,916	$ -
INFLUENT PUMP STATION	WTF - HWY. 109 & TRUITT DRIVE	$ 109,052	$ -
PUMPS	WTF - HWY. 109 & TRUITT DRIVE	$ 76,336	$ -
SCREENING BUILDING	WTF - HWY. 109 & TRUITT DRIVE	$ 113,506	$ -
SCREEN/WASHER	WTF - HWY. 109 & TRUITT DRIVE	$ 87,815	$ -
ULTRAVIOLET STRUCTURE	WTF - HWY. 109 & TRUITT DRIVE	$ 212,363	$ -
ELECTRICAL	WTF - HWY. 109 & TRUITT DRIVE	$ 153,246	$ -
EFFLUENT PUMP STATION	WTF - HWY. 109 & TRUITT DRIVE	$ 109,052	$ -
PUMPS	WTF - HWY. 109 & TRUITT DRIVE	$ 53,033	$ -
BLOWER BLDG.	WTF - HWY. 109 & TRUITT DRIVE	$ 40,177	$ -
BLOWERS	WTF - HWY. 109 & TRUITT DRIVE	$ 124,307	$ -
ELECTRICAL	WTF - HWY. 109 & TRUITT DRIVE	$ 86,093	$ -
GENERATOR	WTF - HWY. 109 & TRUITT DRIVE	$ 103,312	$ -
LABORATORY BUILDING	WTF - HWY. 109 & TRUITT DRIVE	$ 107,904	$ 22,959
AERATION/BAFFLES/AQUAMATS	WTF - HWY. 109 & TRUITT DRIVE	$ 573,955	$ -
WELL 10 BLDG	1414 W. MAIN STREET	$ 97,517	$ -
PUMP	1414 W. MAIN STREET	$ 43,507	$ -
CASING/HOLE	1414 W. MAIN STREET	$ 59,903	$ -
GENERATOR	1414 W. MAIN STREET	$ 51,437	$ -
ELECTRICAL	1414 W. MAIN STREET	$ 54,652	$ -
DISINFECTION	1414 W. MAIN STREET	$ 39,650	$ -
WATER SOFTENING EQUIPMENT	1414 W. MAIN STREET	$ 306,000	$ -
WELL - Arbors of Rockwood	755 BREWSTER ROAD	$ 160,000	$ -
500,000 GALLON WATER STORAGE TANK	755 BREWSTER ROAD	$ 606,000	$ -
BUILDING INCLUDING WATER SOFTENING EQUIPMENT, FLUORIDATION EQUIPMENT, CHLORINATION EQUIPMENT	755 BREWSTER ROAD	$ 2,308,000	$ -
	TOTALS	$ 12,889,987	$ 480,356

18-19 TOTAL BUILDING AND CONTENTS VALUES:	$ 13,370,343
19-20 TOTAL BUILDING AND CONTENTS VALUES:	$ 13,370,343

CENSUS OF MISSOURI PUBLIC WATER SYSTEMS 2019



Missouri Department of Natural Resources
Division of Environmental Quality
Water Protection Program
Public Drinking Water Branch

City Water Systems

Community Water System Name		Year Began	Operator Level	Owner Code	Population Served	Service Connections	Pct Sur Water	Pct Grd Water	Pct GW Under Infl	Pct Pur Sur Water	Pct Pur Grd Water	Pct Pur GW Und Infl	Supply Capacity MGD	Avg Daily Consumption MGD	Finished Water Storage
ELSBERRY PWS															
System ID Number	County Location														
MO6010250	LINCOLN	1935	C2	L	1,963	850	0	100	0	0	0	0	0.5040	0.1300	0.6400
EMERALD BEACH VILLAGE OF PWS															
System ID Number	County Location														
MO5010999	BARRY	1971	2	L	484	231	0	100	0	0	0	0	0.1440	0.0370	0.0720
EMINENCE PWS															
System ID Number	County Location														
MO4010253	SHANNON	1955	2	L	605	349	0	100	0	0	0	0	0.4320	0.2520	0.2610
EMMA PWS															
System ID Number	County Location														
MO1010254	LAFAYETTE	1968	2	L	205	155	0	0	0	100	0	0		0.3160	0.0500
ESSEX PWS															
System ID Number	County Location														
MO4010255	STODDARD	1957	D2	L	474	260	0	100	0	0	0	0	0.3240	0.0470	0.0690
EUGENE PWS															
System ID Number	County Location														
MO3010257	COLE	1962	1	L	220	45	0	100	0	0	0	0	0.2520	0.0210	0.0250
EUREKA PWS															
System ID Number	County Location														
MO6010258	ST LOUIS	1959	C3	L	10,574	3,901	0	100	0	0	0	0	1.6560	1.4580	3.2600
EVERTON PWS															
System ID Number	County Location														
MO5010259	DADE	1964	2	L	352	131	0	100	0	0	0	0	0.1450	0.0170	0.0500
EXCELSIOR SPRINGS PWS															
System ID Number	County Location														
MO1010261	CLAY	1906	B3	L	11,084	4,244	0	100	0	0	0	0	5.0000	2.0000	7.1000
EXETER PWS															
System ID Number	County Location														
MO5010262	BARRY	1959	2	L	772	315	0	100	0	0	0	0	0.5760	0.0520	0.2500

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0039659
Owner:	City of Eureka
Address:	P.O. Box 125, Eureka, MO 63025
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Eureka Wastewater Treatment Facility
Facility Address:	Truitt Drive, Eureka, MO 63025
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

June 1, 2018
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

September 30, 2022
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #004 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified C Operator.
Influent lift station / bar screen / three-cell aerated lagoon with fine-bubble air diffusers, Aquamats®, and recirculation pumps / ultraviolet disinfection / effluent pump station / sludge retained in lagoon / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater
Design population equivalent is 27,500.
Design flow is 2.8 MGD.
Actual flow is 1.6 MGD.
Design sludge production is 400 dry tons/year.

Legal Description:	Sec. 31, T44N, R4E, St. Louis County
UTM Coordinates:	X= 708568, Y= 4265832
Receiving Stream:	Meramec River (P)
First Classified Stream and ID:	Meramec River (P) (2185) 303(d) List
USGS Basin & Sub-watershed No.:	(07140102-1001)

Permitted Feature #SM1 – Instream Monitoring
Instream monitoring location – Upstream – See Special Condition #24

Classified Stream and ID:	Meramec River (P) (2185) 303(d) List
USGS Basin & Sub-watershed No.:	(07140102-1001)

Permitted Feature #SM2 – Instream Monitoring
Instream monitoring location – Downstream – See Special Condition #24

Classified Stream and ID:	Meramec River (P) (2185) 303(d) List
USGS Basin & Sub-watershed No.:	(07140102-1001)

Eureka, MO
Asset Value Report
Depreciated Value-Water Distribution and Sewer Collection Systems

Asset Description	Year Installed	Estimated Installation Cost 2019	Age (2019)	Depreciation Period [1]	Depreciation [2]	Depreciated Value [3]
Water Main	1959	$ 1,702,945.50	60	50	$ 2,043,534.60	$ -
Water Main	1977	$ 3,405,891.00	42	50	$ 2,860,948.44	$ 544,942.56
Water Main	1990	$ 1,702,945.50	29	50	$ 987,708.39	$ 715,237.11
Water Main	1996	$ 1,702,945.50	23	50	$ 783,354.93	$ 919,590.57
Water Main	2003	$ 5,108,836.50	16	50	$ 1,634,827.68	$ 3,474,008.82
Water Main	2006	$ 1,702,945.50	13	50	$ 442,765.83	$ 1,260,179.67
Water Main	2017	$ 1,702,945.50	2	50	$ 68,117.82	$ 1,634,827.68
Fire Hydrants	1959	$ 224,000.00	60	40	$ 336,000.00	$ -
Fire Hydrants	1977	$ 451,500.00	42	40	$ 474,075.00	$ -
Fire Hydrants	1990	$ 224,000.00	29	40	$ 162,400.00	$ 61,600.00
Fire Hydrants	1996	$ 224,000.00	23	40	$ 128,800.00	$ 95,200.00
Fire Hydrants	2003	$ 675,500.00	16	40	$ 270,200.00	$ 405,300.00
Fire Hydrants	2006	$ 224,000.00	13	40	$ 72,800.00	$ 151,200.00
Fire Hydrants	2017	$ 224,000.00	2	40	$ 11,200.00	$ 212,800.00
Water Services and Meters	1959	$ 592,500.00	60	35	$ 1,015,714.29	$ -
Water Services and Meters	1977	$ 1,183,500.00	42	35	$ 1,420,200.00	$ -
Water Services and Meters	1990	$ 592,500.00	29	35	$ 490,928.57	$ 101,571.43
Water Services and Meters	1996	$ 592,500.00	23	35	$ 389,357.14	$ 203,142.86
Water Services and Meters	2003	$ 1,774,500.00	16	35	$ 811,200.00	$ 963,300.00
Water Services and Meters	2006	$ 592,500.00	13	35	$ 220,071.43	$ 372,428.57
Water Services and Meters	2017	$ 592,500.00	2	35	$ 33,857.14	$ 558,642.86
Total Water Assets		**$ 25,196,955.00**				**$ 11,673,972.12**
Sewer	1950	$ 1,925,161.00	69	50	$ 2,656,722.18	$ -
Sewer	1976	$ 3,850,322.00	43	50	$ 3,311,276.92	$ 539,045.08
Sewer	1987	$ 1,925,161.00	32	50	$ 1,232,103.04	$ 693,057.96
Sewer	1995	$ 1,925,161.00	24	50	$ 924,077.28	$ 1,001,083.72
Sewer	2000	$ 5,775,483.00	19	50	$ 2,194,683.54	$ 3,580,799.46
Sewer	2005	$ 1,925,161.00	14	50	$ 539,045.08	$ 1,386,115.92
Sewer	2018	$ 1,925,161.00	1	50	$ 38,503.22	$ 1,886,657.78
Manholes	1950	$ 507,500.00	69	50	$ 700,350.00	$ -
Manholes	1976	$ 1,018,500.00	43	50	$ 875,910.00	$ 142,590.00
Manholes	1987	$ 507,500.00	32	50	$ 324,800.00	$ 182,700.00
Manholes	1995	$ 507,500.00	24	50	$ 243,600.00	$ 263,900.00
Manholes	2000	$ 1,526,000.00	19	50	$ 579,880.00	$ 946,120.00
Manholes	2005	$ 507,500.00	14	50	$ 142,100.00	$ 365,400.00
Manholes	2018	$ 507,500.00	1	50	$ 10,150.00	$ 497,350.00
Service Laterals	1950	$ 116,700.00	69	50	$ 161,046.00	$ -
Service Laterals	1976	$ 233,100.00	43	50	$ 200,466.00	$ 32,634.00
Service Laterals	1987	$ 116,700.00	32	50	$ 74,688.00	$ 42,012.00
Service Laterals	1995	$ 116,700.00	24	50	$ 56,016.00	$ 60,684.00
Service Laterals	2000	$ 349,800.00	19	50	$ 132,924.00	$ 216,876.00
Service Laterals	2005	$ 116,700.00	14	50	$ 32,676.00	$ 84,024.00
Service Laterals	2018	$ 116,700.00	1	50	$ 2,334.00	$ 114,366.00
Total Wastewater Assets		**$ 25,500,010.00**				**$ 12,035,415.92**

Note 1 - Based on Missouri PSC Rate Case Dockets WR-2015-0138 Village Greens Water Company; WR-2016-0169 Woodland Manor Water Company; WR-2015-0104 Spokane Highlands Water Company; SR-2014-0105 Terre Du Lac Utility Company; SR-2014-0068 P.C B., Inc.; and SR-2013-0435 Rogue Creek Sewer.

Note 2 - Depreciation = Age/Depreciation Period X Estimated Installation Cost

Note 3 - Depreciated Value = Estimated Installation Cost - Depreciation

Eureka, MO
Asset Value Report
Depreciated Value-Assets in Insurance List

APPRAISAL REFERENCE	CITY REFERENCE	DESCRIPTION	BUILDING 2019-20 VALUES	CONTENTS 2019-20 VALUES	TOTAL VALUE	APPROX YEAR INSTALLED	Age (2019)	Depreciation Period [1]	Depreciation [2]	Depreciated Value [3]
W-1	NIEHOFF TANK AND BOOSTER	TANK#1	$126,270		$126,270	2007	12	42	$ 36,077.14	$ 90,192.86
W-1	NIEHOFF TANK AND BOOSTER	BOOSTER BUILDING, PUMPS, ELECTRICAL	$274,666		$274,666	2007	12	44	$ 74,908.91	$ 199,757.09
W-1	NIEHOFF TANK AND BOOSTER	TANK .5MG #7	$477,939		$477,939	2007	12	42	$ 136,554.00	$ 341,385.00
W-10	EMERALD FOREST	BOOSTER BUILDING	$50,508		$50,508	1996	23	44	$ 26,401.91	$ 24,106.09
W-10	EMERALD FOREST	PUMPS	$45,916		$45,916	1996	23	7	$ 150,866.86	$ -
W-10	EMERALD FOREST	ELECTRICAL	$34,437		$34,437	1996	23	44	$ 18,001.16	$ 16,435.84
W-10	EMERALD FOREST	GENERATOR	$45,916		$45,916	1996	23	15	$ 70,404.53	$ -
W-2	BROCK TANK AND PALISADES BOOSTER	TANK #3	$376,200		$376,200	2003	16	42	$ 143,314.29	$ 232,885.71
W-2	BROCK TANK AND PALISADES BOOSTER	PALISADES BOOSTER STA. BLDG	$57,396		$57,396	2003	16	44	$ 20,871.27	$ 36,524.73
W-2	BROCK TANK AND PALISADES BOOSTER	PUMPS	$68,874		$68,874	2003	16	7	$ 157,426.29	$ -
W-2	BROCK TANK AND PALISADES BOOSTER	ELECTRICAL	$80,354		$80,354	2003	16	44	$ 29,219.64	$ 51,134.36
W-2	BROCK TANK AND PALISADES BOOSTER	GENERATOR	$68,874		$68,874	2003	16	15	$ 73,465.60	$ -
W-3	WELL #5	WELL 5 BLDG	$74,614		$74,614	1990	29	44	$ 49,177.41	$ 25,436.59
W-3	WELL #5	PUMP	$73,467		$73,467	1990	29	12	$ 177,545.25	$ -
W-3	WELL #5	CASING/HOLE	$80,354		$80,354	1990	29	55	$ 42,368.47	$ 37,985.53
W-3	WELL #5	GENERATOR	$45,916		$45,916	1990	29	15	$ 88,770.93	$ -
W-3	WELL #5	ELECTRICAL	$45,916		$45,916	1990	29	44	$ 30,262.82	$ 15,653.18
W-3	WELL #5	DISINFECTION	$44,768		$44,768	1990	29	35	$ 37,093.49	$ 7,674.51
W-3	WELL #5	WATER SOFTENING EQUIPMENT	$306,000		$306,000	2012	7	35	$ 61,200.00	$ 244,800.00
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	WELL 6 BLDG. #1	$74,614		$74,614	1996	23	44	$ 39,002.77	$ 35,611.23
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	PUMP	$73,467		$73,467	1996	23	12	$ 140,811.75	$ -
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	CASING/HOLE	$80,354		$80,354	1996	23	55	$ 33,602.58	$ 46,751.42
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	GENERATOR	$103,312		$103,312	1996	23	15	$ 158,411.73	$ -
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	ELECTRICAL	$45,916		$45,916	1996	23	44	$ 24,001.55	$ 21,914.45
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	DISINFECTION	$44,768		$44,768	1996	23	35	$ 29,418.97	$ 15,349.03
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	LEGENDS BOOSTER BLDG	$68,874		$68,874	1996	23	44	$ 36,002.32	$ 32,871.68
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	PUMPS	$86,093		$86,093	1996	23	7	$ 282,877.00	$ -
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	ELECTRICAL	$68,874		$68,874	1996	23	44	$ 36,002.32	$ 32,871.68
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	TANK .5 MG #5	$376,200		$376,200	1996	23	42	$ 206,014.29	$ 170,185.71
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	WELL 6 BLDG. #2	$83,640		$83,640	1996	23	44	$ 43,720.91	$ 39,919.09
W-4	LEGENDS TANK AND WELL #6 AND LEGENDS BOOSTER	WATER SOFTENING EQUIPMENT	$306,000		$306,000	2012	7	35	$ 61,200.00	$ 244,800.00
W-5	WELL #10	WELL 10 BLDG	$97,517		$97,517	2006	13	44	$ 28,811.84	$ 68,705.16
W-5	WELL #10	PUMP	$43,507		$43,507	2006	13	12	$ 47,132.58	$ -
W-5	WELL #10	CAS NG/HOLE	$59,903		$59,903	2006	13	55	$ 14,158.89	$ 45,744.11
W-5	WELL #10	GENERATOR	$51,437		$51,437	2006	13	15	$ 44,578.73	$ 6,858.27
W-5	WELL #10	ELECTRICAL	$54,652		$54,652	2006	13	44	$ 16,147.18	$ 38,504.82
W-5	WELL #10	DISINFECTION	$39,650		$39,650	2006	13	35	$ 14,727.14	$ 24,922.86
W-5	WELL #10	WATER SOFTENING EQUIPMENT	$306,000		$306,000	2012	7	35	$ 61,200.00	$ 244,800.00
W-6	WELL #1	WELL 1 BLDG	$74,614		$74,614	1977	42	44	$ 71,222.45	$ 3,391.55
W-6	WELL #1	PUMP	$73,467		$73,467	1977	42	12	$ 257,134.50	$ -
W-6	WELL #1	CASING/HOLE	$80,354		$80,354	1977	42	55	$ 61,361.24	$ 18,992.76
W-6	WELL #1	GENERATOR	$45,916		$45,916	1977	42	15	$ 128,564.80	$ -
W-6	WELL #1	ELECTRICAL	$45,916		$45,916	1977	42	44	$ 43,828.91	$ 2,087.09
W-6	WELL #1	DISINFECTION	$44,768		$44,768	1977	42	35	$ 53,721.60	$ -
W-6	WELL #1	WATER SOFTENING EQUIPMENT	$306,000		$306,000	2012	7	35	$ 61,200.00	$ 244,800.00
W-7	WELL #9 AND THE ARBORS TANKD AND THE ARBORS BOOSTER	WELL - Arbors of Rockwood	$160,000		$160,000	2017	2	44	$ 7,272.73	$ 152,727.27
W-7	WELL #9 AND THE ARBORS TANKD AND THE ARBORS BOOSTER	500,000 GALLON WATER STORAGE TANK	$606,000		$606,000	2017	2	42	$ 28,857.14	$ 577,142.86
W-7	WELL #9 AND THE ARBORS TANKD AND THE ARBORS BOOSTER	BUILDING INCLUDING WATER	$2,308,000		$2,308,000	2017	2	44	$ 104,909.09	$ 2,203,090.91
W-8	WELL #8 AND VIOLA LANE TANKS	WELL 8 BLDG	$74,614		$74,614	2003	16	44	$ 27,132.36	$ 47,481.64
W-8	WELL #8 AND VIOLA LANE TANKS	WATER SOFTENING EQUIPMENT	$306,000		$306,000	2012	7	35	$ 61,200.00	$ 244,800.00
W-8	WELL #8 AND VIOLA LANE TANKS	PUMP	$73,467		$73,467	2003	16	12	$ 97,956.00	$ -
W-8	WELL #8 AND VIOLA LANE TANKS	CASING/HOLE	$80,354		$80,354	2003	16	55	$ 23,375.71	$ 56,978.29
W-8	WELL #8 AND VIOLA LANE TANKS	GENERATOR	$103,312		$103,312	2003	16	15	$ 110,199.47	$ -
W-8	WELL #8 AND VIOLA LANE TANKS	ELECTRICAL	$45,916		$45,916	2003	16	44	$ 16,696.73	$ 29,219.27
W-8	WELL #8 AND VIOLA LANE TANKS	DISINFECTION	$44,768		$44,768	2003	16	35	$ 20,465.37	$ 24,302.63
W-8	WELL #8 AND VIOLA LANE TANKS	HUNTERS BOOSTER BLDG	$57,396		$57,396	2003	16	44	$ 20,871.27	$ 36,524.73
W-8	WELL #8 AND VIOLA LANE TANKS	PUMPS	$51,656		$51,656	2003	16	7	$ 118,070.86	$ -
W-8	WELL #8 AND VIOLA LANE TANKS	ELECTRICAL	$68,874		$68,874	2003	16	44	$ 25,045.09	$ 43,828.91
W-8	WELL #8 AND VIOLA LANE TANKS	HILLTOP BOOSTER BLDG	$57,396		$57,396	2003	16	44	$ 20,871.27	$ 36,524.73
W-8	WELL #8 AND VIOLA LANE TANKS	PUMPS	$45,916		$45,916	2003	16	7	$ 104,950.86	$ -
W-8	WELL #8 AND VIOLA LANE TANKS	ELECTRICAL	$57,396		$57,396	2003	16	44	$ 20,871.27	$ 36,524.73
W-8	WELL #8 AND VIOLA LANE TANKS	TANK .5MG #4	$376,200		$376,200	1977	42	42	$ 376,200.00	$ -
W-8	WELL #8 AND VIOLA LANE TANKS	TANK .2MG #2	$286,978		$286,978	1966	53	42	$ 362,138.90	$ -
W-9	FORBY ROAD TANK AND BOOSTER	TANK .5MG #6	$376,200		$376,200	2005	14	42	$ 125,400.00	$ 250,800.00
W-9	FORBY ROAD TANK AND BOOSTER	BOOSTER STATION	$110,376		$110,376	2005	14	44	$ 35,119.64	$ 75,256.36
W-9	FORBY ROAD TANK AND BOOSTER	GENERATOR	$44,150		$44,150	2005	14	15	$ 41,206.67	$ 2,943.33
		Water Subtotal	$10,449,167	$0	$10,449,167					$6,481,198

Eureka, MO
Asset Value Report
Depreciated Value-Assets In Insurance List

APPRAISAL REFERENCE	CITY REFERENCE	DESCRIPTION	BUILDING 2019-20 VALUES	CONTENTS 2019-20 VALUES	TOTAL VALUE	APPROX YEAR INSTALLED	Age (2019)	Depreciation Period [1]	Depreciation [2]	Depreciated Value [3]
WW-1	WWTP	INFLUENT PUMP STATION	$109,052		$109,052	2005	14	44	$ 34,698.36	$ 74,353.64
WW-1	WWTP	PUMPS	$76,336		$76,336	2005	14	10	$ 106,870.40	$ -
WW-1	WWTP	SCREENING BUILDING	$113,506		$113,506	2005	14	44	$ 36,115.55	$ 77,390.45
WW-1	WWTP	SCREEN/WASHER	$87,815		$87,815	2005	14	22	$ 55,882.27	$ 31,932.73
WW-1	WWTP	ULTRA VIOLET STRUCTURE	$212,363		$212,363	2005	14	44	$ 67,570.05	$ 144,792.95
WW-1	WWTP	ELECTRICAL	$153,246		$153,246	2005	14	44	$ 48,760.09	$ 104,485.91
WW-1	WWTP	EFFLUENT PUMP STATION	$109,052		$109,052	2005	14	44	$ 34,698.36	$ 74,353.64
WW-1	WWTP	PUMPS	$53,033		$53,033	2005	14	10	$ 74,246.20	$ -
WW-1	WWTP	BLOWER BLDG.	$40,177		$40,177	2005	14	44	$ 12,783.59	$ 27,393.41
WW-1	WWTP	BLOWERS	$124,307		$124,307	2005	14	22	$ 79,104.45	$ 45,202.55
WW-1	WWTP	ELECTRICAL	$86,093		$86,093	2005	14	44	$ 27,393.23	$ 58,699.77
WW-1	WWTP	GENERATOR	$103,312		$103,312	2005	14	15	$ 96,424.53	$ 6,887.47
WW-1	WWTP	LABORATORY BUILDING	$107,904	$22,959	$130,863	2005	14	44	$ 41,638.23	$ 89,224.77
WW-1	WWTP	AERATION/BAFFLES/AQUAMATS	$573,955		$573,955	2005	14	22	$ 365,244.09	$ 208,710.91
WW-10	KOA CAMPGROUND LIFT STATION	S. FOX CREEK LIFT STATION/GEN BLDG.	$179,142	$44,150	$223,292	1989	30	10	$ 669,876.00	$ -
WW-11	CAHOON LIFT STATION	LIFT STATION & BUILDING	$2,928	$45,916	$48,844	1950	69	10	$ 337,023.60	$ -
WW-2	RANERI LIFT STATION	SEWAGE LIFT STATION	$29,857		$29,857	2000	19	10	$ 56,728.30	$ -
WW-3	STONEBRIDGE LIFT STATION	LIFT STATION	$149,229		$149,229	1950	69	10	$ 1,029,680.10	$ -
WW-4	HWY 109 LIFT STATION	LIFT STATION & GENERATOR BLDG	$11,709	$206,623	$218,332	1986	33	10	$ 720,495.60	$ -
WW-5	NORTH STREET #1 LIFT STATION	LIFT STATION	$25,254		$25,254	1995	24	10	$ 60,609.60	$ -
WW-6	NORTH STREET #2 LIFT STATION	LIFT STATION	$16,071		$16,071	1995	24	10	$ 38,570.40	$ -
WW-7	ENDERBUSH LIFT STATION	LIFT STATION	$34,437		$34,437	2004	15	10	$ 51,655.50	$ -
WW-8	HILLTOP LIFT STATION	LIFT STATION & GENERATOR BLDG	$5,854	$160,707	$166,561	1976	43	10	$ 716,212.30	$ -
WW-9	THE ARBORS LIFT STATION		$350,000		$350,000	2018	1	10	$ 35,000.00	$ 315,000.00
		Wastewater Subtotal	$2,754,632	$480,355	$3,234,987					$1,258,428

Note 1 - Based on Missouri PSC Rate Case Dockets WR-2015-0138 Village Greens Water Company; WR-2016-0169 Woodland Manor Water Company; WR-2015-0104 Spokane Highlands Water Company; SR-2014-0105 Terre Du Lac Utility Company; SR-2014-0068 P.C.B., Inc.; and SR-2013-0435 Rogue Creek Sewer.

Note 2 - Depreciation = Age/Depreciation Period X Estimated Installation Cost

Note 3 - Depreciated Value = Estimated Installation Cost - Depreciation

VILLAGE GREENS WATER COMPANY
SCHEDULE of DEPRECIATION RATES
(WATER Class D)
WR-2015-0138 Attachment D

NARUC USOA ACCOUNT NUMBER	ACCOUNT DESCRIPTION	DEPRECIATION RATE	AVERAGE SERVICE LIFE (YEARS)	NET SALVAGE
	Source of Supply			
311	Structures & Improvements	2.5%	44	-10%
314	Wells & Springs	2.0%	55	-8%
	Pumping Plant			
321	Structures & Improvements	2.5%	44	-10%
325.1	Submersible Pumping Equipment	10.0%	12	-20%
	Water Treatment Plant			
331	Structures & Improvements	2.5%	44	-10%
332	Water Treatment Equipment	2.9%	35	0%
	Transmission and Distribution			
342	Distribution Reservoirs & Standpipes	2.5%	42	-5%
343	Transmission & Distribution Mains	2.0%	50	0%
345	Customer Services	2.5%	40	0%
346.1	Customer Meters, Plastic (Throw Aways)	10.0%	10	0%
347	Customer Meter Pits & Installation	2.5%	40	0%
348	Hydrants	2.0%	50	0%
	General Plant CLASS D			
371	Structures & Improvements	2.5%	40	0%
372	Office Furniture & Equipment	5.0%	20	0%
372.1	Office Electronic & Computer Equip.	14.3%	7	0%
373	Transportation Equipment	13.0%	7	9%
379	Other General Equipment (tools, shop equip., backhoes, trenchers, etc.)	10.0%	8.7	13%

*Revised 1/23/2015

For Staff Proposed Adoption by Missouri-American Water Company
WM-2016-0169

Woodland Manor Water Company
SCHEDULE of DEPRECIATION RATES dated 4/1/2013
(WATER Class D)
WR-2013-0326

USOA ACCOUNT NUMBER	ACCOUNT DESCRIPTION	DEPRECIATION RATE	AVERAGE SERVICE LIFE (YEARS)	NET SALVAGE
	Source of Supply			
311	Structures & Improvements	2.5%	44	-10%
314	Wells & Springs	2.0%	55	-8%
	Pumping Plant			
321	Structures & Improvements	2.5%	44	-10%
325	Electric Pumping Equip. (Plus Generator)	6.7%	15	0%
328	Other Pumping Equipment	5.0%	20	0%
	WaterTreatment Plant			
332	Water Treatment Equipment	2.9%	35	$0
	Transmission and Distribution			
342	Distribution Reservoirs & Standpipes	2.5%	42	-5%
343	Transmission & Distribution Mains	2.0%	50	0%
345	Customer Services	2.9%	35	0%
346.1	Customer Meters (Installed after 2012)*	10.0%	10	0%
346.2	Bronze Meters and Installs prior 2013	3.3%	30	0%
347	Meter Installations (Meter Pits after 2012)	2.5%	40	0%
348	Hydrants	2.5%	40	0%
349	Other Transmission & Distribution Plant	3.3%	30	0%
	General Plant			
372	Office Equipment & Furniture	5.0%	20	0%
372.1	Office Electronic Equipment	14.3%	7	0%
373	Transportation Equipment	13.0%	7	9%
379	Other General Equipment	6.7%	13	13%

Customer Meters (Installed after 2012)* Plus 18 plastic meters installed in 2007

The above recommended depreciation rates are based on Staff's review of the Company's operation and records.

Attachment A

SPOKANE HIGHLANDS WATER COMPANY
DEPRECIATION RATES
(WATER)
CASE NO. WR-2015-0104

ACCOUNT NUMBER	ACCOUNT	DEPRECIATION RATE %	AVERAGE SERVICE LIFE (YEARS)	SALVAGE %
311	Structures & Improvements	2.5%	44	-10%
314	Wells & Springs	2.0%	55	-8%
325	Electric Pumping Equipment			
325.1	Submersible (Well Pump) Equipment	10.0%	12	-20%
325.2	High Service or Booster Pumps	2.0%	7	0%
342	Distribution Reservoirs & Standpipes	2.5%	42	-5%
343	Transmission & Distribution Mains	2.0%	50	0%
345	Services	2.9%	35	0%
346	Meters	2.0%	10	0%
347	Meter Installations	1.0%	50	0%
348	Hydrants	2.5%	40	0%
372	Office Furniture & Equipment	5.0%	20	0%
379	Other General Equipment	6.7%	13	13%

Attachment D

Terre Du Lac Utility Company

DEPRECIATION RATES

(SEWER)

SR-2014-0105

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	DEPRECIATION RATE	AVERAGE SERVICE LIFE (YEARS)	NET SALVAGE
300	Stipulated Plant	2.5%	40	0%
311	Structures and Improvements	2.5%	44	-10%
352.1	Collection Sewers (Force)	2.0%	50	0%
352.2	Collection Sewers (Gravity)	2.0%	50	0%
353	Services	2.0%	50	0%
354	Flow Measurement Devices	3.3%	30	0%
362	Receiving Wells	5.0%	26	-5%
363	Electric Pumping Equipment	10.0%	10	0%
371	Treatment Plant Shed	2.5%	44	-10%
372	Treatment & Disposal Equipment	5.0%	22	-10%
390	Structures & Improvements Office/Shop	2.5%	44	-10%
391	Office Furniture & Equipment	5.0%	20	0%
391.1	Electronic Office Equipment	0.0%	Excessively Accrued	
392	Transportation Equipment	13.0%	7	9%
393	Stores Equipment	4.0%	25	0%
394	Tools, Shop, and Garage Equipment	5.0%	18	10%
395	Laboratory Equipment	8.3%	12	0%
396	Power Operated Equipment	6.7%	13	13%
397	Communication Equipment	3.3%	Over Accrued	

Reviewed, 1/7/2014. The above are standard small company depreciation rates modified as a result of Staff's investigation of the Company's operation, records, and physical plant, and are dependent on the Company's implementation of the end of test year adjustments to the Company's plant in service and accumulated reserves as shown in the Staff accounting schedules.

P.C.B., Inc.
SCHEDULE of DEPRECIATION RATES
(SEWER Class C & D)
SR-2014-0068 Attachment D

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	DEPRECIATION RATE	AVERAGE SERVICE LIFE (YEARS)
	COLLECTION PLANT		
311	Structures & Improvements	3.3%	33
352.2	Collection Sewers (Gravity)	2.0%	50
355	Flow Measurement Devices	3.3%	30
	PUMPING PLANT		
362	Receiving Wells	4.0%	26
363	Electric Pumping Equipment	10.0%	10
	TREATMENT & DISPOSAL PLANT		
372	Oxidation Lagoons	4.0%	40
373	Treatment & Disposal Facilities	5.0%	22
375	Outfall Sewer Lines	2.0%	50
	GENERAL PLANT		
391	Office Furniture & Equipment	5.0%	20

Reviewed, 1/07/2014. The above are standard small company depreciation rates modified as a result of Staff's investigation of the Company's operation, records, and physical plant, and are dependent on the Company's implementation of the end of test year adjustments to the Company's plant in service and accumulated reserves as shown in the Staff accounting schedules.

Rogue Creek Sewer
Interim Rate Case
SR-2013-0435
Test Year Ending 12-31-2012
Depreciation Expense - Sewer

Line Number	A Account Number	B Plant Account Description	C Adjusted Jurisdictional	D Depreciation Rate	E Depreciation Expense
1		INTANGIBLE PLANT			
2	301.000	Organization	$135	0.00%	$0
3	302.000	Franchises	$1,127	0.00%	$0
4	303.000	Miscellaneous Intangible Plant	$0	0.00%	$0
5		TOTAL INTANGIBLE PLANT	$1,262		$0
6		SOURCE OF SUPPLY PLANT			
7	310.000	Land & Land Rights	$0	0.00%	$0
8	311.000	Structures & Improvements	$2,532	3.00%	$76
9		TOTAL SOURCE OF SUPPLY PLANT	$2,532		$76
10		COLLECTION PLANT			
11	352.100	Collection Sewers - Force	$12,827	2.00%	$257
12	352.200	Collection Sewers - Gravity	$105,094	2.00%	$2,102
13	353.000	Other Collection Plant Facilities	$0	0.00%	$0
14	354.000	Services to Customers	$18,120	2.00%	$362
15	355.000	Flow Measuring Devices	$0	0.00%	$0
16		TOTAL COLLECTION PLANT	$136,041		$2,721
17		PUMPING PLANT			
18	362.000	Receiving Wells and Pump Pits	$1,804	5.00%	$90
19	363.000	Pumping Equipment (Elec.,Diesel, other)	$24,068	10.00%	$2,407
20		TOTAL PUMPING PLANT	$25,872		$2,497
21		TREATMENT & DISPOSAL PLANT			
22	372.000	Oxidation Lagoon	$0	0.00%	$0
23	373.000	Treatment and Disposal Equipment	$31,190	4.50%	$1,404
24	374.000	Plant Sewers	$0	0.00%	$0
25	375.000	Outfall Sewer Lines	$0	0.00%	$0
26	376.000	Other Treatment & Disposal Plant Equip.	$0	0.00%	$0
27		TOTAL TREATEMENT & DISPOSAL PLANT	$31,190		$1,404
28		GENERAL PLANT			
29	391.000	Office Furniture & Equipment	$467	5.00%	$23
30	391.100	Office Computer Equipment	$371	20.00%	$74
31	392.000	Transportation Equipment	$228	13.00%	$30
32	394.000	Tools Shop & Garage Equipment.	$15	5.00%	$1
33		TOTAL GENERAL PLANT	$1,081		$128
34		Total Depreciation	$197,978		$6,826

Flinn Engineering, LLC
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January 18, 2020

Mr. Joseph E. Batis, MAI, R/W-AC
Edward J. Batis & Associates
313 N. Chicago Street
Joliet, IL 60432

Re: Engineering Report
Water and Wastewater System Appraisal
Eureka, Missouri

Dear Mr. Batis:

Flinn Engineering, LLC is pleased to present the following information regarding the water and wastewater systems owned by the City of Eureka, Missouri (City) as part of the appraisal process you are completing for Missouri American Water. The purpose of this Engineering Report is to provide a high-level review of the condition of the system, estimate the 2019 installation cost, and estimate the depreciated book value of the assets. The City provided limited information on the assets. The original installation costs were not recorded by the City. The above ground assets are listed with 2019-2020 replacement costs in the City's insurance list of assets (**Appendix A**). The City provided the year of installation for the above ground assets. The buried assets (water distribution and sewer collection systems) are not listed in the insurance list of assets. The 2019 estimated cost of installation for the buried assets was calculated using a combination of an engineering opinion of cost to install the assets based on knowledge of other systems of similar size, as well as correspondence from the City, vendors, and contractors. The year of installation for the buried assets was estimated based on the installation of the above ground assets, described in more detail below. The 2019 estimated installation cost was depreciated based on the age of each asset.

The estimated values listed in this report do not include the value of land or easements.

The high-level review of the condition of the system is based on the data provided by the City and photos that were taken by others during a site visit. Flinn Engineering did not visit the site.

The water system include six (6) wells, eight (8) booster pump stations, seven (7) storage tanks, and the water distribution system. The wastewater system includes a treatment plant, ten (10) lift stations, and the sewer collection system.

Wells

The six (6) wells are listed in the insurance asset list with replacement costs. The line items for each well site typically include a separate line for the building, well casing, pump, generator, electrical, disinfection equipment, and softening equipment. The replacement values listed on the insurance asset list were used for the 2019 installation cost. The values were then depreciated based on the age of the asset. **Table 1** summarizes the well information and the