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June 30, 2022

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

Re: Engineering Report-Revised
Water and Wastewater System Appraisal
Smithton, Missouri

Dear Mr. Batis:

This report supersedes the previous version dated October 5, 2020. The revision is a result of receiving maps of the water distribution system and the sewer collection system. The previous report relied on discussions with City staff during the site visit for the length of water and sewer main. City staff indicated that they have 14 miles of water main and it was assumed that the length of sewer main was also 14 miles. The water and sewer locations were redrawn and measured using *Google Earth™ mapping service.* The revised length of water main is 5.3 miles and sewer main is 4.3 miles. The following report and tables have been updated accordingly.

Flinn Engineering, LLC is pleased to present the following information regarding the water and wastewater systems owned by the City of Smithton, 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 2020 installation cost, and estimate the depreciated value of the assets. The original installation costs and installation dates were not documented by the City. The 2020 estimated cost of installation 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 2020 estimated installation cost was depreciated based on the estimated age of each asset.

A site visit was conducted on August 13, 2020. The above ground assets were observed to determine a high-level condition for this report. No additional testing was conducted beyond the visual observation of condition.

The water system includes two (2) wells, an elevated storage tank, and the water distribution system. The wastewater system includes a treatment plant, two (2) lift stations, and the sewer collection system.

Wells

The City owns two (2) deep wells. The City did not provide documentation on the wells. The information was provided by City staff during the site visit. Well #1 was constructed in 1929 and had a major improvement completed in 1993. The improvement included a pump replacement

and the addition of chlorine room. In 2010 a new meter was installed on the well and pump controls were installed. The control system is used to operate both wells. The well is 2,300 feet deep and has a pumping capacity of 170 gallons per minute. Well #2 was constructed in 1983 and is 1,980 feet deep. The building includes a chlorine room. The pumping capacity is 200 gpm. **Table 1** summarizes the estimated cost to install the wells in 2020.

Table 1 – Well Estimated Installation Cost in 2020

Description of Work	Well #1	Well #2
Well Depth (feet)	2300	1980
Well Drilling, Casing, Pump, Electrical ($125/foot)	$287,500.00	$247,500.00
Site Piping (5% of Well)	$ 14,375.00	$ 12,375.00
Site Work (Lump sum $5,000)	$ 5,000.00	$ 5,000.00
Subtotal	$309,175.00	$266,855.00
Engineering (10% of Subtotal)	$ 30,917.50	$ 26,685.50
Total	$340,092.50	$293,540.50

The well pump replacement in 1993 is estimated to cost $15,000 in 2020, assuming the pump cost is $5,000 and the labor and installation is $10,000. The new chlorine storage and metering pump equipment is estimated to cost $6,000 in 2020, assuming the tank and metering pump cost is $2,000 and the labor and installation is $4,000. The chlorine storage and metering pump equipment is assumed to be similar for Well #2. The new meter and pump control equipment is estimated to cost $7,500 in 2020, assuming the meter and installation is $2,500 and the control system and programming is $5,000.

The wells and chlorine feed equipment appear to be in good condition. Although Well #1 is fully depreciated, it is still in operation and could continue to be operational beyond the depreciation period.

Water Storage Tank

The water system includes a 50,000-gallon elevated tank. The tank is a riveted steel, multi-leg tank. The City did not provide documentation on the tank. The information was provided by City staff during the site visit. Based on conversations with tank manufacturers, the estimated cost for supplying and constructing a storage tank in 2020 would be in the range of $2.00 to $2.50 per gallon depending on the height of the tank. We estimated the cost of the tank to be $2.50 per gallon because of the height. We estimated the cost of the foundation to be 10% of the tank cost, the site piping to be 5% of the tank cost, and the site work (grading, fencing, etc) to be $5,000. The engineering is estimated at 10% of the subtotal for the tank, foundation, etc. **Table 2** summarizes the estimated cost to install the tank in 2020.

Table 2 – Tank Estimated Installation Cost in 2020

Description of Work	Elevated Tank (50,000 gallons)
Tank ($2.50 per gallon)	$ 125,000.00
Foundation (10% of Tank)	$ 12,500.00
Site Piping (5% of Tank)	$ 6,250.00
Site Work (Lump sum $5,000)	$ 5,000.00
Subtotal	$ 148,750.00
Engineering (10% of Subtotal)	$ 14,875.00
Total	$ 163,625.00

The tank is inspected every year. The tank was painted 8 or 9 years ago and was cleaned when it was painted. It has also been cleaned once since the painting. The tank is covered in a black residue that was tested for mold by MDNR. The black residue is diesel suet from the truck traffic at the facility next to the tank.

Although the tank is fully depreciated, the tank appears to be in good condition and can continue to be in service well beyond the depreciation period.

Water Distribution System

The City provided a .pdf of the Water System Map showing locations of 2-inch, 4-inch, and 6-inch water main and another .pdf showing the water meter locations. The water distribution system was drawn in *Google Earth™ mapping service* to estimate the length of each size. The number of fire hydrants was provided by City staff during the site visit. The water distribution system includes approximately 5.3 miles of C900 PVC water main, 30 fire hydrants, and 256 customer service connections and meters. The entire water distribution system was replaced in 1996 over a 7-month period. The cost for the replacement reported by the City during the site visit was $400,000, which is $14.40 per foot. It is assumed that the City staff performed most of the installation work and the reported $400,000 was mostly for material. We assumed a 2020 cost for the installation of water main, 30 fire hydrants, and 256 services and meters and it is summarized in **Table 3**. The estimated cost assumes the main is approximately 3 feet deep. The estimate includes excavation, material, installation, fittings, valves, backfill, and restoration.

Table 3 – Distribution System Estimated Installation Cost in 2020

Asset Description	Quantity	Unit	Estimated Unit Cost 2020	2020 Estimated Installation Cost
2-inch Water Main	12,200	feet	$ 25.00	$ 305,000
4-inch Water Main	2,300	feet	$ 45.00	$ 103,500
6-inch Water Main	13,300	feet	$ 50.00	$ 665,000
Fire Hydrants	30	each	$ 3,500.00	$ 105,000
Services and Meters	256	each	$ 1,500.00	$ 384,000
			Total	$ 1,154,000

The water distribution system was not observed for condition. Based on the age of the water

distribution system, it is assumed that the water distribution system is in very good condition.

Wastewater Treatment Plant

The wastewater treatment plant is a two-cell lagoon system with a design flow of 62,000 gallons per day, according to the MDNR Operating Permit (**Appendix A**). The City did not provide documentation on the lagoons. The information was provided by City staff during the site visit. There is no chemical feed at the lagoons and sludge is retained in the lagoon. The plant was originally constructed in 1969.

The USEPA published a Technology Fact Sheet on lagoons (**Appendix B**). The Fact Sheet does not list typical installation costs because the costs vary significantly based on the cost of the land, excavation, grading, berm construction, inlet and outlet structures, and permeability of the soil. Based on some recent projects and discussions with contractors, we estimate the 2020 installation cost at $2.50 per gallon treated ($155,000).

The treatment plant is fully depreciated. It appears to be in very good condition and can continue to be in service well beyond the depreciation period.

Sewer Lift Stations

The wastewater system includes two (2) sewer lift stations. The City did not provide documentation on the pump stations. The information was provided by City staff during the site visit. Both lift stations are similar in type and size. They include two (2) pumps. They do not include standby generators. The lift stations include heat sensors on the pumps and are automatically controlled. Each pump station pumps to separate forcemains to the treatment plant. Pump Station #1 is located on Rattlesnake Hill Road near the treatment plant and pumps from the west portion of the City. Pump Station #2 is located on the southeast side of the City and pumps from the east portion of the City.

The lift stations are assumed to date back to 1969 when the treatment plant was installed. Lift Station #1 was replaced in 2000. The cost to install each lift station in 2020 is estimated to be $26,950, which is summarized in **Table 4**.

Table 4 – Sewer Lift Station Estimated Installation Cost in 2020

Description of Work	2020 Estimated Installation Cost
10-hp, 3-ph Sewer Pumps	$ 8,000.00
Installation	$ 10,000.00
Controls	$ 5,000.00
Site Work	$ 1,500.00
Subtotal	$ 24,500.00
Engineering (10% of Subtotal)	$ 2,450.00
Total	$ 26,950.00

Lift station equipment has a depreciation period of only 10 years. Both stations are fully depreciated and are still in service. They could remain in service well beyond the depreciation period if they are continually maintained. Both stations appear to be in good condition.

Sewer Collection System

The City provided a .pdf of the Waste Water System showing locations of the sewer main and manholes. The system was drawn in *Google Earth™ mapping service* to estimate the length of sewer main. The Waste Water System map does not include size and material. During the site visit, City staff indicated that the sewer collection system is mostly 8-inch clay pipe and was installed in 1965. The collection system includes 75 manholes and all manholes have been replaced since the original installation. We assumed the manholes were replaced in 1998 around the same time the entire water distribution system was replaced. We assumed the number of sewer laterals were similar to the number of water meters. **Table 5** summarizes the estimated installation cost for the sewer collection system in 2020. The estimated cost assumes the average depth of the sewer is approximately 6 feet deep. The estimate includes design, excavation, materials, installation, backfill, and restoration.

Table 5 – Sewer Collection System Estimated Installation Cost in 2020

Asset Description	Quantity	Unit	Estimated Unit Cost 2020	2020 Estimated Installation Cost
Sewer	22,600	feet	$ 55.00	$ 1,243,000
Manholes	75	each	$ 3,500.00	$ 262,500
Service Laterals	256	each	$ 300.00	$ 76,800
			Total	$ 1,582,300

The sewer collection system was not observed for condition. The city reported that the inflow and infiltration in the collection system is approximately 10-15% on the eastern portion of the City and considerably higher in the western portion of the City. The entire sewer system has been inspected using CCTV equipment. Although the majority of the sewer collection system is completely depreciated, the system is still in use and could continue to be in use well beyond the depreciation period. Based on the age and material, the collection system is assumed to be in fair condition.

Estimated Depreciated Value

Table 6 shows a summary of the estimated cost for installation in 2020 and the depreciated value based on the age of the assets. The depreciation calculation is included in **Appendix C**. 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 D**. Three (3) are from water systems and three (3) are from wastewater systems. The depreciation periods used are summarized in **Table 7**.

Table 6 - Summary of Estimated Depreciated Value

	Estimated 2020 Installation Cost	Depreciated from 2020 Estimate
Smithton Water System	$ 2,394,258.00	$ 836,302.09
Smithton Wastewater System	$ 1,791,200.00	$ 147,000.00
Total	$ 4,185,458.00	$ 983,302.09

Table 7 – Depreciation Periods

Asset	Depreciation Period (years)
Water Treatment Equipment	35
Tanks	42
Water Main	50
Fire Hydrants	50
Services and Meters	35
WWTP-Lagoon	40
Lift Station	10
Sanitary Sewer, Manholes, Laterals	50

Overall the water and wastewater systems appear to be in good condition. 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 – MDNR Operating Permit
Appendix B – USEPA Fact Sheet on Lagoons
Appendix C – Depreciation Calculation
Appendix D – Missouri PSC Depreciation Schedules

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-0025828
Owner:	City of Smithton
Address:	101 W. Washington, Smithton, MO, 65350
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Smithton Wastewater Treatment Facility
Facility Address:	Rattlesnake Hill Rd. Smithton, MO, 65350
Legal Description:	NE ¼, NE ¼, Sec. 15, T45N, R20W, Pettis County
UTM Coordinates:	X=491323, Y=4280837
Receiving Stream:	Tributary to Tributary to Flat Creek (C)
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.:	(10300103-0306)

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

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "D" Operator.
Two cell lagoon /sludge retained in lagoon
Design population equivalent is 620.
Design flow is 62,000 gallons per day.
Actual flow is 40,000 gallons per day.
Design sludge production is 9.3 dry tons/year.

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.

September 1, 2016 — Effective Date
June 1, 2017 — Modification Date

Edward B. Galbraith, Director, Division of Environmental Quality

March 31, 2021 — Expiration Date

David J. Lamb, Acting Director, Water Protection Program

OUTFALL #001	**TABLE A-1. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**	PAGE NUMBER 2 of 8
		PERMIT NUMBER MO-0025828

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **September 1, 2016** and remain in effect through **January 31, 2021**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	twice/week	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		65	45	once/month	grab
Total Suspended Solids	mg/L		120	80	once/month	grab
E. coli (Note 1, Page 3)	#/100mL		*	*	once/month	grab
Ammonia as N	mg/L	*		*	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2016. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units **	SU	6.5			once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2016.

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged.

OUTFALL #001	**TABLE A-2.** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**	PAGE NUMBER 3 of 8 PERMIT NUMBER MO-0025828

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **February 1, 2021**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	twice/week	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		65	45	once/month	grab
Total Suspended Solids	mg/L		120	80	once/month	grab
E. coli (Note 1, Page 3)	#/100mL		1030	206	once/month	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	 5.0 9.0		 1.3 2.8	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units **	SU	6.5			once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2021.

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged.

Note 1 - Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

OUTFALL #001	**TABLE A-3.** **WHOLE EFFLUENT TOXICITY** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**	 PERMIT NUMBER MO-0025828

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **September 1, 2016** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Acute Whole Effluent Toxicity (Note 2)	TU_a	*			once/5 years***	grab

MONITORING REPORTS SHALL BE SUBMITTED ONCE EVERY 5 YEARS***; THE FIRST REPORT IS DUE SEPTEMBER 28, 2022

* Monitoring requirement only.
*** Five year period from 2018 to 2023
Note 2 –See Special Condition #22 for additional requirements.

TABLE B. INFLUENT MONITORING REQUIREMENTS	PAGE NUMBER 4 of 8
	PERMIT NUMBER MO-0025828

The facility is required to meet a removal efficiency of 65%or more as a monthly average. The monitoring requirements shall become effective on **September 1, 2016** and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand$_5$	mg/L	once/quarter*****	grab
Total Suspended Solids	mg/L	once/quarter*****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2017.

**** See table below for quarterly sampling requirements

Minimum Sampling Requirements			
Quarter	**Months**	**Influent Parameters**	**Report is Due**
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and March 1, 2015, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources has initiated stakeholder discussions on how to best incorporate these new criteria into the State's rules. A date for when this rule change will occur has not been determined. Also, refer to Section VI of this permit's factsheet for further information including estimated future effluent limits for this facility. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at http://dnr.mo.gov/pubs/pub2481.htm.

2. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test including acute and chronic Whole Effluent Toxicity (WET) tests, or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
   (d) Incorporate the requirement to develop a pretreatment program pursuant to 40 CFR 403.8(a) when the Director of the Water Protection Program determines that a pretreatment program is necessary due to any new introduction of pollutants into the Publically Owned Treatment Works or any substantial change in the volume or character of pollutants being introduced.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

3. All outfalls must be clearly marked in the field.

4. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards
   (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Reporting of Non-Detects:
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
   (c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
   (d) The permittee shall use one-half of the detection limit for the non-detect result when calculating monthly averages.
   (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.

8. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002) or the Departments' CMOM Model located at http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc . For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at http://dnr.mo.gov/pubs/pub2574.htm .

   The permittee shall also submit a report to the Kansas City Regional Office annually, by January 28th, for the previous calendar year. The report shall contain the following information:
   (a) A summary of the efforts to locate and eliminate sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
   (b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
   (c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.

D. SPECIAL CONDITIONS (continued)

9. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Kansas City Regional Office or by using the online Sanitary Sewer Overflow/Facility Bypass Application, located at: http://dnr.mo.gov/modnrcag/ during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.

10. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

11. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.

12. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.

13. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.

14. An all-weather access road shall be provided to the treatment facility.

15. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

16. A minimum of two (2) feet freeboard must be maintained in each lagoon cell. A lagoon level gauge, which clearly marks the minimum freeboard level, shall be provided in each lagoon cell. .

17. The berms of the lagoons shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.

18. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the lagoon and to divert stormwater runoff around the lagoon and protect embankments from erosion.

19. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
   (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
      - The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
      - The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).

   (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.

D. SPECIAL CONDITIONS (continued)

(c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
(d) The Allowable Effluent Concentration (AEC) for this facility is 100% with the dilution series being: 100%, 50%, 25%, 12.5%, and 6.25%.
(e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
(f) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°F), pH (SU), Conductivity (µmohs/cm), Dissolved Oxygen (mg/L), Un-ionized Ammonia (mg/L), Total Alkalinity (mg/L), and Total Hardness (mg/L).
(g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

20. Electronic Discharge Monitoring Report (eDMR) Submission System.
(a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
(b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
(1) Collection System Maintenance Annual Reports;
(2) Schedule of Compliance Progress Reports;
(3) Sludge/Biosolids Annual Reports; and
(4) Any additional report required by the permit excluding bypass reporting.
After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
(c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
(1) General Permit Applications/Notices of Intent to discharge (NOIs);
(2) Notices of Termination (NOTs); and
(3) Bypass reporting, See Special Condition #9 for 24-hr. bypass reporting requirements.
(d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx .
(e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf . The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

E. SCHEDULE OF COMPLIANCE

The previous permit included the following schedule of compliance. The six **(6)** year schedule of compliance will be continued as it were originally written.

The facility shall attain compliance with final effluent limitations as soon as reasonably achievable.

1. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from February 1, 2015.

2. By February 1, 2021, the permittee shall attain compliance with the final effluent limits.

Please submit progress reports to the Missouri Department of Natural Resources, Kansas City Regional Office, 500 NE Colburn Rd, Lee Summit Missouri, 64086

MISSOURI DEPARTMENT OF NATURAL RESOURCES
EDMR STATEMENT OF BASIS
MO-0025828
SMITHTON WASTEWATER TREATMENT FACILITY

This Statement of Basis gives pertinent information regarding an internal minor permit modification to the above listed operating permit without the need for a public comment process. A statement of basis is not an enforceable part of a Missouri State Operating Permit.

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description:
Single Cell Lagoon /Sludge Retained in Lagoon

Part II – Modification Rationale

This operating permit was modified by adding a special condition to the permit to require the permittee to submit all discharge monitoring reports electronically (eDMR) to the department. The final rule (eReporting Rule) substitutes electronic reporting for paper-based reports and, over the long term, saves time and resources for permittees, states, tribes, territories, and EPA, while improving compliance and better protecting the Nation's waters. The final rule requires permittees and regulators to use existing, available information technology to electronically report information and data related to the NPDES permit program in lieu of filing paper-based reports. All authorized programs are required to electronically transmit the federally-required data (identified in appendix A to 40 CFR part 127) to EPA. The purpose and need for this rule was highlighted in the development of the Clean Water Act Enforcement Action Plan (Plan).

Announced by EPA in October 2009, the Plan was a collaborative effort by EPA and state environmental agencies to explore opportunities to improve water quality by emphasizing and adopting new approaches that will improve how the NPDES permitting and enforcement program is administered. The goals of the Plan include improving transparency of the information on compliance and enforcement activities in each state, connecting this information to local water quality, and providing the public with real-time, easy access to this information.

No other changes were made at this time to this permit.

Part III –Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit.

DATE OF STATEMENT OF BASIS: MAY 22, 2017

COMPLETED BY:

ANGELA FALLS, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0025828
SMITHTON WASTEWATER TREATMENT FACILITY

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Minor

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description:
Single Cell Lagoon /Sludge Retained in Lagoon

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

☒ - No.

Application Date: 09/23/2015
Expiration Date: 03/31/2016

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.093	Equivalent to Secondary	Domestic

Facility Performance History:
This facility was last inspected on 08/15/2013. The inspection showed the following unsatisfactory features; failed to provide locked gate, failed to provide adequate fencing to prevent unauthorized access. Failed to provide and all weather access road. The facility has since returned to compliance. Review of the previous five years of discharge monitoring reports shows the following reported exceedences:

Limit value exceeded	08/31/2011	Total Suspended Solids (TSS)
Limit value exceeded	10/31/2011	Total Suspended Solids (TSS)
Limit value exceeded	08/31/2012	Total Suspended Solids (TSS)
Limit value exceeded	09/30/2012	Total Suspended Solids (TSS)
Limit value exceeded	09/30/2012	pH
Limit value exceeded	09/30/2012	BOD, 5-day, 20 deg. C
Limit value exceeded	04/30/2014	Total Suspended Solids (TSS)

Comments:
Changes in this permit include the removal of the schedule of compliance to submit a Wasteload Allocation Study. See Part VII of the Fact Sheet for further information regarding the addition and removal of effluent parameters. Special conditions were updated to include the reporting of Non-detects

Part II – Operator Certification Requirements

☒ - This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Owned or operated by or for a

- ☒ - Municipalities
- ☐ - State agency
- ☐ - Federal agency
- ☐ - Public Sewer District
- ☐ - County
- ☐ - Public Water Supply Districts
- ☐ - Private Sewer Company regulated by the Public Service Commission
- ☐ - State agency
- ☐ - Federal agency

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) or fifty (50) or more service connections.

This facility currently requires an operator with a D Certification Level. Please see **Appendix - Classification Worksheet** Modifications made to the wastewater treatment facility may cause the classification to be modified.

http://www.dnr.mo.gov/operator/index.do
Operator's Name: Joel Hughes
Certification Number: 13920
Certification Level: D

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

Part III– Operational Monitoring

☒ - As per [10 CSR 20-9.010(4))], the facility is required to conduct operational monitoring.

Part IV – Receiving Stream Information

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(4)].

RECEIVING STREAM(S) TABLE: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
8-20-13 MUDD V1.0	C	3960	AQL, IRR, LWW, SCR, WBCB, HHP	10300103-0306	0

*As per 10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:
AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = Whole body contact recreation that supports swimming uses and has public access;
WBC-B = Whole body contact recreation that supports swimming;
SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:
HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation for use on crops utilized for human or livestock consumption;
LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply;
IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)
WSA = Storm- and flood-water storage and attenuation; WHP = Habitat for resident and migratory wildlife species; WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): GRW = Groundwater

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (C, E, P, P1)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Tributary to Flat Creek (C)	0	0	0

MIXING CONSIDERATIONS
Mixing Zone: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:
No receiving water monitoring requirements recommended at this time.

Receiving Water Body's Water Quality
A stream survey was conducted on the receiving water body on 09/10/2013. The stream survey found 50 yards below the lagoon anaerobic substrate, discoloration, organic suspended solids and sphaeroltilis. The second survey site observed at the same time 0.8 miles below the lagoon, pools, no flow, minnows and sunfish.

Part V – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

☒ - The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(o); 40 CFR Part 122.44(l)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☒ - All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

☒ - No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(3)(B)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 , items WQ422 through WQ449.

☒ - Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from lagoons.

COMPLIANCE AND ENFORCEMENT:
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

☒ - The facility is not currently under Water Protection Program enforcement action.

DISCHARGE MONITORING REPORTS:
On July 30, 2013, EPA proposed the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which requires electronic reporting of NPDES information rather than the currently-required paper-based reports from permitted facilities. To comply with the upcoming federal rule, the Department is asking all permittees to begin submitting discharge monitoring data online. For permittees already using the Department's eDMR data reporting system, those permittees will be required to exclusively use the eDMR data reporting system.

☒ - The permittee/facility is not currently using the eDMR data reporting system. To sign up for the eDMR system, visit the Department's eDMR page at http://dnr.mo.gov/env/wpp/edmr.htm.

PRETREATMENT PROGRAM:
The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:
- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

☒ - The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

☒ - An RPA analysis was completed for the last permit cycle. Due to permit synchronization, the previous permit cycle was reduced to a time period of less than 5 years. Therefore, all RPA results from short term permit have been carried over to this permit

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

☒ - Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):
Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur.

☒ - At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at http://dnr.mo.gov/pubs/pub2574.htm. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015 the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

☒ - The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia and E. coli. The six year schedule of compliance allowed for this facility should provide adequate time to evaluate operations, obtain an engineering report, hold a bond election, obtain a construction permit and implement upgrades required to meet effluent limits. This schedule of compliance was originally included in the previous permit cycle, due to the schedule of compliance exceeding the length of the previous permit the schedule will be continued unchanged as it were originally written.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges.

In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan. A facility can apply for conditional exclusion for "no exposure" of industrial activities and materials to stormwater by submitting to the Department a completed NPDES Form 3510-11 – No Exposure Certification for Exclusion from NPDES Stormwater Permitting. That document and additional information may be found at http://water.epa.gov/polwaste/npdes/stormwater/Conditional-No-Exposure-Exclusion.cfm. Upon approval of the "No Exposure", the permit can be modified to remove the SWPPP requirements. If the facility chooses to retain the conditional exclusion for "no exposure", the facility is required to renew the "No Exposure" exemption during the permit renewal period by submitting NPDES Form 3510-11 with Form B2.

☒ - At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:
As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

☒ - This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

☒ - Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration Ce = effluent concentration
Cs = upstream concentration Qe = effluent flow
Qs = upstream flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":
Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used

WLA MODELING:
There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

☒ - A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(4)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

☒ - The permittee is required to conduct WET test for this facility.

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

- ☐ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility that exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
- ☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- ☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
- ☒ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- ☐ Other – please justify.

40 CFR 122.41(M) - BYPASSES:
The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from "bypassing" untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

☒ - This facility does not anticipate bypassing.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

☒ - This facility does not discharge to a 303(d) listed stream.

Part VI –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Current effluent limitations in this permit are:

Summer – 5.0 mg/L daily maximum, 1.3 mg/L monthly average.
Winter – 9.0 mg/L daily maximum, 2.8 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this that discharges to a receiving stream with no mixing consideration listed in Part IV of the Fact Sheet will be:

Summer – 1.7 mg/L daily maximum, 0.6 mg/L monthly average.
Winter – 5.6 mg/L daily maximum, 2.1 mg/L monthly average.

These estimated limits above are based in part on the actual performance of the plant at the time of the drafting of this permit and should not be construed as future effluent limitations. Future effluent limits, based on the EPA's 2013 water quality criteria for ammonia, will depend in part on the actual performance of the facility at the time the permit is renewed.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VII – Effluent Limits Determination

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

☐ Missouri or Mississippi River [10 CSR 20-7.015(2)]
☐ Lake or Reservoir [10 CSR 20-7.015(3)]
☐ Losing [10 CSR 20-7.015(4)]
☐ Metropolitan No-Discharge [10 CSR 20-7.015(5)]
☐ Subsurface Water [10 CSR 20-7.015(7)]
☒ All Other Waters [10 CSR 20-7.015(8)]

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	twice /week	monthly	E
BOD_5	mg/L	1		65	45	65/45	1/month	monthly	G
TSS	mg/L	1		120	80	120/80	1/month	monthly	G
Escherichia coli **	#/100mL	1, 3		1030	206	1030/ 206	1/month	monthly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	5.0		1.3	5.0/1.3	1/month	monthly	G
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	9.0		2.8	9.0/2.8	1/month	monthly	G
Oil & Grease	mg/L	1, 3	15		10	15/10	1/month	monthly	G
Acute Whole Effluent Toxicity	TUa	1, 9	*			*	1/five years	once/five years	G

PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.5			≥6.5	1/month	monthly	G

* - Monitoring requirement only.
** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
*** - Parameter not previously established in previous state operating permit.

**** - C = 24-hour composite
G = Grab
T = 24-hr. total
E = 24-hr. estimate

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review
5. Antidegradation Policy
6. Water Quality Model
7. Best Professional Judgment
8. TMDL or Permit in lieu of TMDL
9. WET Test Policy

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD_5).**

  ☒ - Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**
- **Total Suspended Solids (TSS).**

  ☒ - Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

Please note that the final effluent limits for BOD and TSS contained in the permit are Equivalent to Secondary limits as per 10 CSR 20-7.015. Any changes made to the lagoon system that modifies it such that it no longer functions as a typical lagoon will result in the facility no longer qualifying for Equivalent to Secondary limitations. The facility may be required to also to follow the Missouri Antidegradation Rule and Implementation Procedure if the discharge is expanded.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation B designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five E. coli samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen**. Effluent limitations have been retained from previous operating permit as the previous permit cycle was less than 5 years due to permit synchronization.

- **Oil & Grease**. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

- **pH**. – ≥ 6.5 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. 10 CSR 20-7.015 allows pH for lagoons to be maintained above 6.0 SU. With no mixing zone, the water quality standard, ≥ 6.5 SU, must be met at the outfall. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity**. Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards. Where no mixing is allowed, the acute criterion must be met at the end of the pipe. However, when using an LC50 as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC50 value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration is 100% a limit of 1.0 TUa will apply. If more than 50% of the organisms survive at 100% effluent, the permittee should report TUa <1.

  Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Sampling Frequency Justification:

Sampling and Reporting Frequency was retained from previous permit. Sampling for *E. coli* is set at monthly per 10 CSR 20-7.015(9)(D)6.C.

WET Test Sampling Frequency Justification. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.

Acute Whole Effluent Toxicity

☒ -No less than **ONCE/PERMIT CYCLE:**
☒ -Municipality with a design flow ≥ 22,500 gpd, but less than 1.0 MGD.
☐ - Other, please justify.

Sampling Type Justification:

As per 10 CSR 20-7.015, BOD_5, TSS and WET test samples collected for lagoons may be grab samples. Grab samples must be collected for pH, Ammonia as N, *E. coli*, and Oil & Grease. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia and Oil & Grease samples must be immediately preserved, these samples are to be collected as a grab. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

Part VIII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a "finding of affordability" on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

Cost Analysis for Compliance - The Department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of Department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **Appendix – Cost Analysis for Compliance**

☒ - The Department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility. Due to length of the schedule of compliance implemented in the previous permit extending through this permit cycle the Cost Analysis for Compliance conducted during the previous permit renewal has been attached.

Part IX – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit was from April 22nd 2016 to May 23rd 2016. No comments were received during this time period.

DATE OF FACT SHEET: 03/09/2016

COMPLETED BY:

SHAWN MASSEY, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	0
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	0
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	0
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	0
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	0
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	0
Grit removal	3	0
Plant pumping of main flow (lift station at the headworks)	3	0
PRIMARY TREATMENT		
Primary clarifiers	5	0
Combined sedimentation/digestion	5	0
Chemical addition (except chlorine, enzymes)	4	0
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Push – button or visual methods for simple test such as pH, Settleable solids	3	3
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	0
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	0
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	0
Land Disposal – low rate	3	0
High rate	5	0
Overland flow	4	0
Total from page **ONE (1)**	----	11

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	0
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	0
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	0
Raw wastes subject to toxic waste discharge	6	0
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	0
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	0
Stabilization ponds without aeration	5	5
Aerated lagoon	8	0
Advanced Waste Treatment Polishing Pond	2	0
Chemical/physical – without secondary	15	0
Chemical/physical – following secondary	10	0
Biological or chemical/biological	12	0
Carbon regeneration	4	0
DISINFECTION		
Chlorination or comparable	5	0
Dechlorination	2	0
On-site generation of disinfectant (except UV light)	5	0
UV light	4	0
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	0
Anaerobic digestion	10	0
Aerobic digestion	6	0
Evaporative sludge drying	2	0
Mechanical dewatering	8	0
Solids reduction (incineration, wet oxidation)	12	0
Land application	6	0
Total from page **TWO (2)**	----	5
Total from page **ONE (1)**	---	11
Grand Total	---	16

☐ - A: 71 points and greater
☐ - B: 51 points – 70 points
☐ - C: 26 points – 50 points
☒ - D: 0 points – 25 points

APPENDIX – COST ANALYSIS FOR COMPLIANCE

Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)

Smithton WWTF, Permit Renewal
City of Smithton
Missouri State Operating Permit #MO-0025828

Section 644.145 RSMo requires the Department of Natural Resources (DNR) to make a "finding of affordability" when "issuing permits under" or "enforcing provisions of" state or federal clean water laws "pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works."

This cost analysis is based on data available to the Department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City's financial and socioeconomic situation. A request for information was sent to the permittee, seeking data for input into this analysis prior to its development. The Department currently uses software to estimate the cost for reconstruction of a treatment plant titled CAPDETWORKS (CapDet). CapDet is a preliminary design and costing software program from Hydromantis[1] for wastewater treatment plants that uses national indices, such as the Marshall and Swift Index and Engineering News Records Cost Index for pricing in development of capital, operating, maintenance, material, and energy costs for each treatment technology. As the program works from national indices and each community is unique in its budget commitments and treatment design, the estimated costs are expected to be higher than actual costs. The cost estimates located within this document are for the construction of a brand new treatment facility or system that is the most practical to facilitate compliance with new requirements. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City's financial and socioeconomic situation.

The Department is required to issue a permit with final effluent limits in accordance with 644.051.1.(1) RSMo, 644.051.1.(2) RSMo, and the Clean Water Act. The table below summarizes the results of this cost analysis for the Village of Smithton. The practical result of this analysis is to incorporate a long compliance schedule into the permit in order to mitigate adverse impact to distressed populations resulting from the costs of upgrading the wastewater treatment facility.

Cost Analysis for Compliance Summary Table

Estimated present worth to upgrade to land application	Median Household Income (MHI) for the City of Smithton	Estimated monthly cost per user as a percent of MHI **with 6 year schedule of compliance**
$917,697 - $1,347,684	$43,680	0.60% - 0.86%

Current Facility Description: Two-cell lagoon / sludge is retained in lagoon.

Flow evaluated: Actual flow of 40,000 GPD

Residential Connections:	209
Commercial Connections:	13
Industrial Connections:	1
Total Connections for this facility:	223

New Permit Requirements:

The permit requires compliance with new effluent limitations for ammonia and *E. coli*, which may require the design, construction and operation of different treatment technology. The cost assumptions in this cost analysis anticipate complete replacement of the existing treatment facility. To calculate the estimated user cost per 5,000 gallons, the Department used the equations currently being used in the Financial Assistance Center's rate calculator. The equations account for replacement of equipment during the life of the treatment facility, debt retirement, capital costs, and an inflation factor. The calculator evaluates multiple technologies through CapDet at a range of flows, then, using a linear interpolation, develops a spreadsheet outlining high and low costs for treatment plants. For this analysis the Department has selected the mechanical treatment technology that could be the most practical solution to meet the new requirements for the community as well as cost estimation to install a land application system. Because the methods used to derive the analysis estimate costs that are greater than actual costs associated with an upgrade, it reflects a conservative estimate anticipated for a community. An overestimation of costs is due to the fact that it is not possible for the permit writer to determine what existing equipment and structures will be reused in the upgraded facility before an engineer completes a facility design.

The size of the facility evaluated for upgrades was chosen based on the permitted actual flow. If significant population growth is expected in the community, or if a significant portion of the flow is due to I&I, the flows used in the Facility Plan prepared by a consulting engineer may be different than this flow.

Anticipated Costs Associated with Complying with the New Requirements:

Costs associated with land application:
The total present worth estimated to purchase land and install a land application system is between $917,697 and $1,347,684 (*CAPDETWORKS cost estimator was used*). The user costs over a thirty year period are estimated to be between $21.60 and $31.58 per household per month. The low cost estimate for land application assumes that the community will not have to construct a new storage basin and the high cost estimate assumes the construction of a storage basin. The estimation includes the purchase of a minimum of 29 acres and a maximum of 32 acres. Four regions divided by highways have been established to estimate the minimum storage time required and the amount of land necessary for land application within the State. The cost of land has been estimated based on county averages. The regions are north of Highway 36, between Highways 36 and 50, between Highways 50 and 60, and south of Highway 60. For communities that are divided by highways, the region selected is where the majority of the county resides. The acreage estimated through CapDet does not reflect site-specific conditions and more or less land may be required based on site-specific considerations, such as streams, sinkholes, severe slopes, or roads. A no discharge facility, of which land application is the most common form, is required to be demonstrated as infeasible before a discharging system may be constructed per [10 CSR 20-6.010(4)(D).] When land is available, it is the Department's stance that land application is an important treatment option to be considered because of the expected lower cost over a longer term associated with construction and operation and maintenance. Also, the no discharge system is of value to the permittee when considering additional costs associated with possible future changes to Water Quality Standards.

Cost associated with mechanical treatment:
The total present worth to add ultraviolet disinfection treatment is estimated at $194,858 (*CAPDETWORKS cost estimator was used*). This cost, if financed through user fees, might cost each household approximately $4.61 per month. Due to the design limitations in the CapDet cost estimator, the costs for disinfection have been over estimated. For any flows less than 100,000 gpd, CapDet assumes a flow of 100,000 gpd when estimating the cost for UV disinfection. The assumptions for chlorine disinfection are that the chlorine used will either be in the liquid or gas phase and not the tablets which are used by many smaller facilities.

The costs estimated in CAPDETWORKS are associated with a complete reconstruction of a new treatment plant. The total present worth for complete replacement of the existing treatment facility in order to meet new ammonia effluent limits is estimated at $1,451,845(*CAPDETWORKS cost estimator was used*). This cost, if financed through user fees, might cost each household approximately $33.43 per month. The Department has estimated the construction and treatment costs for a package plant. The treatment type has been set to meet effluent ammonia limits of less than 1.0 mg/L and losing stream criteria for BOD_5 and TSS. Sludge handling and sludge treatment were not included in the capital, operations, maintenance, and present worth cost estimations as there are multiple ways for sludge handling to occur, including reuse of existing sludge equipment. Disinfection is not represented in the present worth listed in this paragraph, as it was discussed in the previous paragraph. It is the Department's opinion that a package plant is the most practical mechanical treatment technology for your community based on the current actual flow. A more detailed engineering and design report conducted for your specific facility will be completed by your hired engineer. This may reflect a different type of treatment option than what is described within this analysis and may include additional collection system work or additional upgrades at the treatment plant.

The total present worth over a 20 year period of adding both ammonia and disinfection treatment has been estimated to cost approximately $1,461,609. The total capital cost to construct both treatment upgrades may cost approximately $669,000. These costs if financed through user fees, might cost each household in the community approximately $41.84 per month. These costs will be used to complete this analysis.

This cost analysis does not dictate that a permittee will upgrade their facility, or how they will comply with the new permit requirements. For any questions associated with the *CAPDETWORKS cost estimator*, please contact the Engineering Section at (573) 751-6621.

(1) A community's financial capability and ability to raise or secure necessary funding;

Current User Rates:	$17.30
Rate Capacity or Pay as You Go Option:	Pay as You Go
Municipal Bond Rating (if applicable):	Not Provided by Applicant
Bonding Capacity: *(General Obligation Bond capacity allowed by constitution:* *cities=up to 20% of taxable tangible property* *sewer districts or villages=up to 5% of taxable tangible property)*	Not Provided by Applicant
Current outstanding debt for the City of Smithton:	No Debt
Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure:	No Debt
Consideration of integrated planning to address the most significant needs of the municipality	Not Provided by Applicant
Other indicators:	Not Provided by Applicant

(2) Affordability of pollution control options for the individuals or households at or below the median household income level of the community;

A Current Costs

Current operating costs (exclude depreciation):	$17,000
Current user rate:	$17.30

B-1 Estimated Costs for Mechanical Plant Pollution Control Option

Estimated total present worth of pollution control*:	$1,461,609
Estimated capital cost of pollution control**:	$669,000
Annual cost of operation and maintenance***:	$63,601
Estimated resulting user cost per household per month****:	$41.84
Estimated resulting user cost per household per month plus the amount within the current user rate used toward payments on outstanding debt:	No Debt
Median household income(MHI)[2]:	$43,680
Cost per household as a percent of median household income[3]:	1.2%
Estimated cost per household per month plus the amount within the current user rate used toward payments on outstanding debt as a percent of median household income[4]:	No Debt

CAPDET estimates the total present worth to finance a new mechanical treatment facility with disinfection to be approximately $1,461,609. If financed through user costs, the future user costs have the potential to be estimated at $41.84 per month. These costs assume a 5% interest rate over 20 years for mechanical treatment. It is the Department's opinion that a package plant is the most practical mechanical treatment option for design actual flow of this facility. All treatment technologies were set to meet effluent ammonia limits of less than 1.0 mg/L and losing stream criteria for BOD_5 and TSS. Sludge handling, sludge treatment, and disinfection have not been included in the capital, operations and maintenance, and present worth cost estimations.

B-2 Estimated Costs for Land Application Pollution Control Options

Estimated total present worth of pollution control*:	$917,697 - $1,347,684
Estimated capital cost of pollution control**:	$690,810 - $902,301
Land required:	29 acres to 32 acres
Annual cost of operation and maintenance***:	$22,768 - $37,709
Estimated resulting user cost per household per month****:	$21.60 - $31.58
Estimated resulting user cost per household per month plus the amount within the current user rate used toward payments on outstanding debt:	No Debt
Median household income(MHI)[2]:	$43,680
Cost per household as a percent of median household income[5]:	0.60% - 0.86%
Estimated cost per household per month plus the amount within the current user rate used toward payments on outstanding debt as a percent of median household income[6]:	No Debt

CAPDET estimates the total present worth to finance a land application system to be between $917,697 and $1,347,684. If the cost of the upgrade is financed through the user cost, the future user cost is estimated to be between $21.60 and $31.58 per month. The low cost for land application assumes the existing lagoon or storage basin has sufficient storage capacity for conversion to land application. The high cost estimates that a new lagoon or storage basin will need constructed, either at the existing facility or at the land application fields to comply with the storage requirements for land application. All estimated costs for land application assume a 5% interest rate over 30 years. The estimated capital cost assumes the City must purchase the land. If the City already owns the land, the resulting costs will be less than what is described in Table B-2.

The resulting cost per household as a percent of MHI will be used as the residential indicator in Criteria 7 below.

* Total Present Worth includes a five percent interest rate to construct and perform annual operation and maintenance of the new treatment plant over the term of the loan.

** Capital Cost includes project costs from CapDet with design, inspection and contingency costs.

*** O&M cost shown in Tables B-1 and B-2 is includes operations, maintenance, materials, chemical and electrical costs for the facility on an annual basis. It includes items that are expected to replace during operations, such as pumps. O&M is estimated between 15% and 45% of the user cost.

**** The Estimated User Cost shown in Tables B-1 and B-2 is composed of two factors, Operation & Maintenance (O&M), and Debt Retirement Costs.

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System. This permit renewal requires final effluent limitations for Ammonia as N based on Missouri Water Quality Standards (WQS) 10 CSR 20-7.031 and the Clean Water Act. Ammonia (NH_3) is toxic to early stages of aquatic life. NH_3 removal prevents damage to aquatic life and enables the receiving stream to support a healthier and diverse aquatic life community. The technologies evaluated by CapDet are a sequencing batch reactor, extended aeration mechanical plant, and an oxidation ditch. All technologies evaluated have demonstrated the capability of meeting the 2013 ammonia criteria when operated and maintained at a proper level. Land application is another option that has been evaluated within this document. Land application is of value to the permittee when considering costs associated with possible future changes with Water Quality Standards. Please see the Water Protection Program fact sheet titled "Changes to the Water Quality Standard for Ammonia" at http://dnr.mo.gov/pubs/pub2481.htm.

Land application in the state is divided into four regions, based on the minimum storage time, rainfall amounts, and land required for land application to occur. The regions are north of Highway 36, between Highways 36 and 50, between Highways 50 and 60, and south of Highway 60. For communities that are divided by highways, the region selected is where the majority of the county resides. The low cost estimate for land application assumes that the community will not have to construct a new storage basin and the high cost estimate assumes the construction of a storage basin.

For all mechanical treatment technologies calculated by the Department's CapDet calculator, sludge handling, sludge treatment is not included in the capital, operations and maintenance, and annual or present worth costs. All treatment technologies were designed to meet effluent ammonia of less than 1.0 mg/L and losing stream criteria for BOD_5 and TSS of less than 10 mg/L.

E. coli is an indicator of the presence of fecal contamination in water and possible disease-causing bacteria and viruses in water and wastewater. The receiving stream has a WBC (B) designated use to protect human health in accordance with Water Quality Standards (10 CSR 20-7.031) and the Clean Water Act. Disinfection benefits human health by reducing exposure to disease-causing bacteria and viruses. The City of Smithton will have to upgrade the treatment facility with a disinfection system in order to meet the final effluent limitations.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The community has reported that they have no outstanding debts for the current wastewater collection and treatment systems.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

(a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
(b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

Socioeconomic Data[7-9]:

Potentially Distressed Populations – City of Smithton	
Unemployment	6.8%
Adjusted Median Household Income (MHI)	$43,680
Percent Change in MHI (1990-2012)	+106.8%
Percent Population Growth/Decline (1990-2012)	-6.0%
Change in Median Age in Years (1990-2012)	+5.9 years
Percent of Households in Poverty	20.6 %
Percent of Households Relying on Food Stamps	10.2 %

Opportunity for cost savings or cost avoidance:
If available, connection to a larger centralized sewer system in the area may be more cost effective for the community.

The permittee may apply for State Revolving Fund (SRF) financial support in order to help fund a Capital Improvements Plan. Other loans and grants also exist for which the facility may be eligible. Contact information for the Department's Financial Assistance Center (FAC) and more information can be found on the Department's website at http://dnr.mo.gov/env/wpp/srf/wastewater-assistance.htm.

Opportunity for changes to implementation/compliance schedule, new technology, site specific criteria, use attainability analysis:

The facility may propose changes to the schedule of compliance based on their own cost estimate or financial information.

If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, the permittee may use the Use Attainability Analysis (UAA) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. This process could potentially become expensive in itself.

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

The community did not report any other investments relating to environmental improvements

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards;

Secondary indicators for consideration:

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	Not Provided by Applicant
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	No Debt
Unemployment Rate	>1% below Missouri average of 6.0%	± 1% of Missouri average of 6.0%	>1% above Missouri average of 6.0%	2
Median Household Income	More than 25% above Missouri MHI ($47,333)	± 25% of Missouri MHI ($47,333)	More than 25% below Missouri MHI ($47,333)	2
Percent of Households in Poverty*	>10% below Missouri average of 14.0%	± 10% of Missouri average of 14.0%	>10% above Missouri average of 14.0%	2
Percent of Households Relying on Food Stamps*	>5% below Missouri average of 11.4%	± 5% of Missouri average of 11.4%	>5% above Missouri average of 11.4%	2
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	3
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	2

Financial Capability (FCI) Indicators Average Score: 2.2
Mechanical Plant Residential Indicator (RI, from Criteria #2 above): 2.3%
Land Application Residential Indicator (RI, from Criteria #2 above): 0.60% - 0.86%

***** Financial Capability Indicators are specific to the State of Missouri

Financial Capability Matrix:

Financial Capability Indicators Score from above ↓	**Residential Indicator (User cost as a % of MHI)**		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%	High (Above 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden (Land Application)	Medium Burden	High Burden (Mechanical)
Strong (above 2.5)	Low Burden	Medium Burden	High Burden

Estimated Financial Burden for Mechanical Plant: High Burden
Estimated Financial Burden for Land Application: Low Burden

The resulting financial burden has been determined by comparing the Financial Capability Indicator score (FC) with the Residential Indicator (RI) stated in Criteria #2. The cost associated with a mechanical plant could result in a High financial burden placed on the community due to the Mid-Range FC paired with the High RI. The cost associated with a land application system could result in a Low financial burden placed on the community due to the Mid-Range FC paired with the Low RI. Please see Criteria #2 for more information on the costs specific to each treatment technology.

(8) An assessment of any other relevant local community economic condition.

The community did not report any other relevant local economic conditions.

Conclusion and Finding

As a result of new regulations, the Department is proposing modifications to the current operating permit that may require the permittee to upgrade the facility and construct new control technologies. The Department identified the actions for which cost analysis for compliance is required under Section 644.145 RSMo.

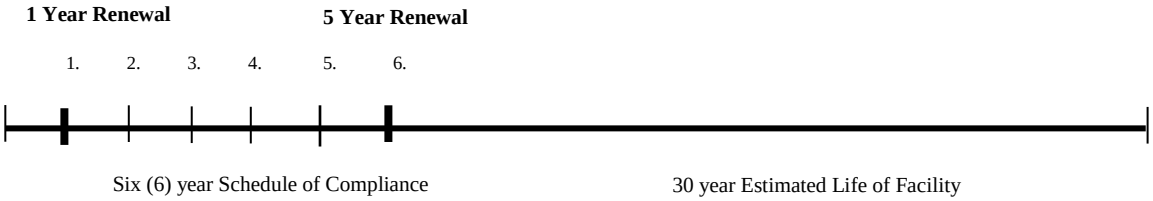
The Department estimates the total present worth for complete replacement of the existing treatment facility in order to meet new ammonia effluent limits is $917,697 for land application and $1,461,609 for mechanical treatment.

The Department considered the eight (8) criteria presented in subsection 644.145.3 when evaluating the cost associated with the relevant actions. Using this analysis, the Department finds that a land application system is the most practical and affordable option for your community. The construction and operation of a land application system will ensure that the individuals within the community will not be required to make unreasonable sacrifices in their essential lifestyle or spending patterns or undergo hardships in order to make the projected monthly payments for sewer connections. Also, a land application treatment system has the potential to generate agricultural revenues that could offset cost. This can include but is not limited to revenue from the sale of a forage or grain crop as well as rent from livestock grazing.

The Department also estimated the costs of four mechanical treatment options appropriate to the design flow of the facility. After estimating the costs associated with an oxidation ditch plant and an package plant, the Department finds that the package plant is the most practical mechanical treatment plant option, though it may require user costs to be as high as 2.3% of the community's MHI (shown in Criteria #2). The Department has determined that the package plant does not meet the definition of affordable over a twenty year period for your community. If this option is selected, the City Smithton will need to apply for a permit modification to obtain a schedule of compliance that will mitigate the cost of compliance.

In accordance with 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. Therefore, the City Smithton has received a six year schedule of compliance to conduct a Wasteload Allocation Study as well as to design and construction of a land application system with the assumption that land is attainable for the purpose of land application of effluent. The following timeline illustrates milestones on which the 6 year schedule of compliance should focus to maintain compliance with the permit requirements.

Timeline 1: (not drawn to scale)



Suggested milestones to meet within each year listed below:
Year 1. Hire an engineer / Evaluation of Rate Structure and Treatment Plant / and Submit an application for renewal of the existing operating permit with new financial and socio-economic data.
Year 2. Hold bond election / Apply for State Revolving Fund loans and/or grants, submit facility plan /and Apply for Construction permit
Year 3. Close on loan / Construction
Year 4. Construction
Year 5. Construction
Year 6 Complete Construction / Submit an application for renewal of the existing operating permit.

The schedule of compliance allows the community the first permit cycle (one year) to hire an engineer and evaluate operations and rate structure. At this time the community will know what the user rates will be based on the present worth of the chosen treatment type decided on by the community and the design engineer hired by the community. It is anticipated by the Department that rates will be increased at the end of the first permit cycle to mitigate the cost of compliance of the new requirements. The Department is committed to reassessing the Cost Analysis for Compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time.

The remaining five (5) years of the schedule give the community ample time to obtain an engineering report, hold a bond election, close on a loan construct the facility and complete the project. If the community wishes to seek funding from the Department, please contact the Financial Assistance Center for more information. http://www.dnr.mo.gov/env/Wpp/srf/index.html

The Department is committed to reassessing the cost analysis for compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time. In this longer time frame, the Department will work with you to explore the wastewater treatment options that make the most sense for your community. By working more closely with your community, the Department and permittees will be able to identify opportunities to extend the schedule of compliance, if appropriate. Because each community is unique, we want to make sure that you have the opportunity to consider all your options and tailor solutions to best meet your community's needs. The Department understands the economic challenges associated with achieving compliance, and is committed to using all available tools to make an accurate and practical finding of affordability for the communities in the State.

This determination is based on readily available data and may overestimate the financial impact on the community. The community's facility plan that is submitted as a part of the construction permit process includes a discussion of community details, what the community can afford, existing obligations, future growth potential, an evaluation of options available to the community with cost information, and a discussion on no-discharge alternatives. The cost information provided through the facility plan process, which is developed by the community and their engineer, is more comprehensive of the community's individual factors in relation to selected treatment technology and costing information.

References:

1. http://www.hydromantis.com/
2. The Median Household Income was found using the American Community Survey by the U.S. Census Bureau
3. (41.84/(43,680/12))100 = 1.2(mechanical)
4. No Debt
5. (21.60/(43,680/12))100 = 0.60 and (31.58/(43,680/12))100 = 0.86 (land application)
6. No Debt
7. Unemployment data was obtained from Missouri Department of Economic Development (July 2014) – http://www.missourieconomy.org/pdfs/urel1407.pdf
8. Population trend data was obtained from online at: 2012 Census Bureau Population Data - http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=table, 2000 Census Bureau Population Data - http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls, 1990 Census Bureau Population Data - http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf
9. Poverty data – American Community Survey- http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

STANDARD CONDITIONS FOR NPDES PERMITS ISSUED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES MISSOURI CLEAN WATER COMMISSION REVISED AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. **Monitoring Requirements**.
   a. Records of monitoring information shall include:
      i. The date, exact place, and time of sampling or measurements;
      ii. The individual(s) who performed the sampling or measurements;
      iii. The date(s) analyses were performed;
      iv. The individual(s) who performed the analyses;
      v. The analytical techniques or methods used; and
      vi. The results of such analyses.
   b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. **Test Procedures**. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
   a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
   b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

2. **Non-compliance Reporting.**
   a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.

c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

3. **Anticipated Noncompliance**. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

6. **Other Information**. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

7. **Discharge Monitoring Reports.**
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. **Definitions.**
   a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
   b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Bypass Requirements.**
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
   b. Notice.
      i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
      ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. Prohibition of bypass.
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement

imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. **Duty to Reapply.**
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. **Proper Operation and Maintenance**. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. **Permit Actions.**
   a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      iv. Any reason set forth in the Law or Regulations.
   b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. **Permit Transfer.**
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
    d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
    a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
    b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
    a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
    b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
    c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
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MISSOURI CLEAN WATER COMMISSION
REVISED
MAY 1, 2013

PART II - SPECIAL CONDITIONS – PUBLICLY OWNED TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the *General Pretreatment Regulation* 10 CSR 20-6.100, the term Significant Industrial User means:

1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's or for violating any Pretreatment Standard or requirement.

Clean Water Act (CWA) is the the federal Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. (2002).

2. Identification of Industrial Discharges

Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information

Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department

Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
3. For purposes of this paragraph, adequate notice shall include information on:
   i. the quality and quantity of effluent introduced into the POTW, and
   ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

Missouri Department of Natural Resources
Water Protection Program
Attn: Pretreatment Coordinator
P.O. Box 176
Jefferson City, MO 65102

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
March 1, 2015

PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND INDUSTRIAL WASTEWATER TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
    a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.
   Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:
    a. A site specific permit must be obtained for each operating location, including application sites.
    b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the Department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
    a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the Department; or
    b. Permittee shall close the lagoon in accordance with Section H.

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
    a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
    b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites:

    Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.
    a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
    b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:

    Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri
    a. Haulers that land apply septage must obtain a state permit
    b. Do not apply more than 30,000 gallons of septage per acre per year.
    c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
    d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
    e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

a. Biosolids shall be monitored to determine the quality for regulated pollutants
b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to reach the maximum concentration of pollutants allowed.
c. Table 1 gives the maximum concentration allowable to protect water quality standards

TABLE 1

Biosolids ceiling concentration [1]	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

[1] Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

TABLE 2

Biosolids Low Metal Concentration [1]	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

[1] You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

TABLE 3

Pollutant	CEC 15+		CEC 5 to 15		CEC 0 to 5	
	Annual	Total [1]	Annual	Total [1]	Annual	Total [1]
Arsenic	1.8	36.0	1.8	36.0	1.8	36.0
Cadmium	1.7	35.0	0.9	9.0	0.4	4.5
Copper	66.0	1,335.0	25.0	250.0	12.0	125.0
Lead	13.0	267.0	13.0	267.0	13.0	133.0
Mercury	0.7	15.0	0.7	15.0	0.7	15.0
Nickel	19.0	347.0	19.0	250.0	12.0	125.0
Selenium	4.5	89.0	4.5	44.0	1.6	16.0
Zinc	124.0	2,492.0	50.0	500.0	25.0	250.0

[1] Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

TABLE 4 - Guidelines for land application of other trace substances [1]

Cumulative Loading	
Pollutant	Pounds per acre
Aluminum	4,000[2]
Beryllium	100
Cobalt	50
Fluoride	800
Manganese	500
Silver	200
Tin	1,000
Dioxin	(10 ppt in soil)[3]
Other	[4]

[1] Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

[2] This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

[3] Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

[4] Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426 (WQ426) published by the University of Missouri

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
    i. PAN can be determined as follows and is in accordance with WQ426
    (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
    [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
g. Buffer zones are as follows:
    i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
    ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
    iii. 150 feet if dwellings;
    iv. 100 feet of wetlands or permanent flowing streams;
    v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
h. Slope limitation for application sites are as follows;
    i. A slope 0 to 6 percent has no rate limitation
    ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
    iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
        i. PAN can be determined as follows:

        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).

        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered "septage" under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
    b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
    c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Design Sludge Production (dry tons per year)	Monitoring Frequency (See Notes 1, 2, and 3)			
	Metals, Pathogens and Vectors	Nitrogen TKN [1]	Nitrogen PAN [2]	Priority Pollutants and TCLP [3]
0 to 100	1 per year	1 per year	1 per month	1 per year
101 to 200	biannual	biannual	1 per month	1 per year
201 to 1,000	quarterly	quarterly	1 per month	1 per year
1,001 to 10,000	1 per month	1 per month	1 per week	--[4]
10,001 +	1 per week	1 per week	1 per day	--[4]

[1] Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.
[2] Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
[3] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.
[4] One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.
Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.
Note 3: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the Department.
4. At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
    a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
    b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
11201 Renner Blvd.
Lenexa, KS 66219

5. Annual report contents. The annual report shall include the following:
    a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
    b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
        ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
        iii. Report the method used for compliance with pathogen and vector attraction requirements.
        iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

RECEIVED
SEP 23 2015
Water Protection Program

AP 21965

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED 9/23/15	FEE SUBMITTED 0

READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. THIS APPLICATION IS FOR:

☐ An operating permit for a new or unpermitted facility. Construction Permit # ____
(Include completed antidegradation review or request for antidegradation review, see instructions)

☐ A new site-specific operating permit formerly general permit #MOG ____

☒ A site-specific operating permit renewal: Permit #MO- 0025828 Expiration Date ____

☐ A site-specific operating permit modification: Permit #MO- ____ Reason: ____

☐ General permit (MOGD – Non POTWs discharging < 50,000 GPD *or* MOG823 – Land Application of Domestic Wastewater):
Permit #MO- ____ Expiration Date ____

1.1 Is the appropriate fee included with the application (see instructions for appropriate fee)? ☐ YES ☒ NO NA

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE
Smithton Lagoon		660-343-5444
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
Rattlesnake Hill Rd.	Smithton	Mo. / 65350

2.1 Legal description: NE ¼, NE ¼, ¼, Sec. 15, T 45N, R 20W County Pettis

2.2 UTM Coordinates ~~Easting~~ (X): ~~Northing~~ (Y): 38° 4036.51 N 93° 05' 58.11 W.
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Unamed tributory to Flat Creek

2.4 Number of outfalls: Wastewater outfalls: Stormwater outfalls: Instream monitoring sites:

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
City of Smithton	cityofsmithton63@yahoo	660-343-5444
ADDRESS	CITY	STATE / ZIP CODE
101 W Washington	Smithton	Mo / 65350

3.1 Request review of draft permit prior to public notice? (YES) NO

3.2 Are you a publicly owned treatment works? YES (NO)
If yes, is the Financial Questionnaire attached? YES NO

3.3 Are you a privately owned treatment works? YES (NO)

3.4 Are you a privately owned treatment facility regulated by the Public Service Commission? YES (NO)

4. CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
City of Smithton	cityofsmithton63@yahoo	660-343-5444
ADDRESS	CITY	STATE / ZIP CODE
101 W Washington	Smithton	Mo / 65350

If the continuing authority is different than the owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

5. OPERATOR

NAME	TITLE	CERTIFICATE NUMBER
Joel Hughes		13920
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE
f1502010@yahoo.com		660-619-4565

6. FACILITY CONTACT

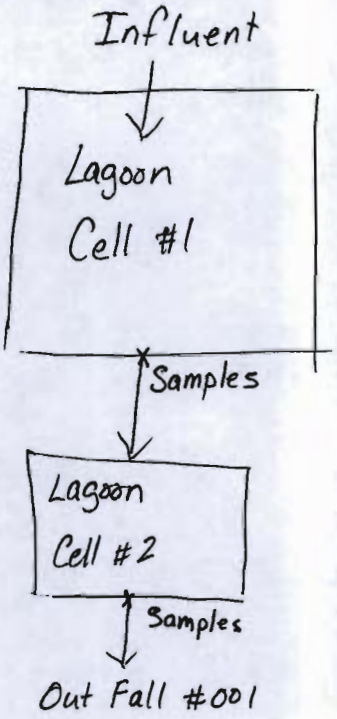
NAME	TITLE
Paul Williams	Water Supt
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
	660-343-5444

ADDRESS	CITY	STATE	ZIP CODE
101 W. Washington	Smithton	Mo	65350

MO 780-1512 (03-15)

7. DESCRIPTION OF FACILITY

7.1 Process Flow Diagram or Schematic: Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – chlorination and dechlorination), influents, and outfalls. Specify where samples are taken. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram.
Attach sheets as necessary.



7.2 Attach an aerial photograph or USGS topographic map showing the location of the facility and outfall.

8. ADDITIONAL FACILITY INFORMATION

8.1 Facility SIC code: 4952 Discharge SIC code: 001

8.2 Number of people presently connected or population equivalent (P.E.) Design P.E.

8.3 Connections to the facility:

Number of units presently connected:

Homes 196 Trailers 2 Apartments 11 Other (including industrial) 1

Number of commercial establishments: 13

8.4 Design flow: 62,000 gpd | Actual flow: 40,000 gpd

8.5 Will discharge be continuous through the year? ☒ Yes ☐ No N/A

Discharge will occur during the following months: N/A

How many days of the week will discharge occur? N/A

8.6 Is industrial wastewater discharged to the facility? ☐ Yes ☒ No

If yes, attach a list of the industries that discharge to your facility

8.7 Does the facility accept or process leachate from landfills? Yes X No

8.8 Is wastewater land applied? Yes X No

If yes, is Form I attached? Yes No

8.9 Does the facility discharge to a losing stream or sinkhole? X Yes No

8.10 Has a wasteload allocation study been completed for this facility? X Yes No

9. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant. X Yes ☐ No

Push-button or visual methods for simple test such as pH, settlable solids. X Yes ☐ No

Additional procedures such as dissolved oxygen, chemical oxygen demand, biological oxygen demand, titrations, solids, volatile content. X Yes ☐ No

More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc. Yes X No

Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph. Yes X No

10. COLLECTION SYSTEM

10.1 Length of pipe in the sewer collection system? ____ Feet, or 4.0 Miles (either unit is appropriate)

10.2 Does significant infiltration occur in the collection system? Yes No

If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

11. BYPASSING

Does any bypassing occur in the collection system or at the treatment facility? Yes X No

If yes, explain:

12. SLUDGE HANDLING, USE AND DISPOSAL

12.1 Is the sludge a hazardous waste as defined by 10 CSR 25? ☐ Yes ☒ No

12.2 Sludge production, including sludge received from others: 9.3 Design dry tons/year 8.25 Actual dry tons/year

12.3 Capacity of sludge holding structures: 2 cell lagoon 3.04 acres
Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge;
☐ No sludge storage is provided. ☐ Sludge is stored in lagoon.

12.4 Type of Storage:
☐ Holding tank ☐ Building
☐ Basin ☒ Lagoon
☐ Concrete Pad ☐ Other (Describe) _____

12.5 Sludge Treatment:
☐ Anaerobic Digester ☒ Lagoon ☐ Composting
☐ Storage Tank ☐ Aerobic Digester ☐ Other (Attach description)
☐ Lime Stabilization ☐ Air or Heat Drying

12.6 Sludge Use or Disposal:
☐ Land Application ☐ Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
☐ Contract Hauler ☐ Hauled to Another treatment facility
☐ Incineration ☒ Sludge Retained in Wastewater treatment lagoon
☐ Solid waste landfill

12.7 Person responsible for hauling sludge to disposal facility: N/A
☐ By applicant ☐ By others (complete below)

NAME	EMAIL ADDRESS		
N/A			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	

12.8 Sludge use or disposal facility
☐ By applicant ☐ By others (Complete below.)

NAME	EMAIL ADDRESS		
None			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	

12.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?
☒ Yes ☐ No (Explain)

13. CERTIFICATION

I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.

NAME (TYPE OR PRINT)	OFFICIAL TITLE	TELEPHONE NUMBER WITH AREA CODE
Damian Lemens	MAYOR	660-343-5239
SIGNATURE		DATE SIGNED
Damian Lemens		09-18-2015

MO 780-1512 (13-15)

Google Maps Google Maps

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United States
Environmental Protection
Agency

Wastewater Technology Fact Sheet

Facultative Lagoons

DESCRIPTION

Facultative waste stabilization ponds, sometimes referred to as lagoons or ponds, are frequently used to treat municipal and industrial wastewater in the United States. The technology associated with facultative lagoons has been in widespread use in the United States for at least 90 years, with more than 7,000 facultative lagoons in operation today. These earthen lagoons are usually 1.2 to 2.4 m (4 to 8 feet) in depth and are not mechanically mixed or aerated. The layer of water near the surface contains dissolved oxygen due to atmospheric reaeration and algal respiration, a condition that supports aerobic and facultative organisms. The bottom layer of the lagoon includes sludge deposits and supports anaerobic organisms. The intermediate anoxic layer, termed the facultative zone, ranges from aerobic near the top to anaerobic at the bottom. These layers may persist for long periods due to temperature-induced water-density variations. Inversions can occur in the spring and fall when the surface water layer may have a higher density than lower layers due to temperature fluctuations. This higher density water sinks during these unstable periods, creates turbidity, and produces objectionable odors.

The presence of algae in the aerobic and facultative zones is essential to the successful performance of facultative ponds. In sunlight, the algal cells utilize CO_2 from the water and release O_2 produced from photosynthesis. On warm, sunny days, the oxygen concentration in the surface water can exceed saturation levels. Conversely, oxygen levels are decreased at night. In addition, the pH of the near surface water can exceed 10 due to the intense use of CO_2 by algae, creating conditions favorable for ammonia removal via volatilization. This photosynthetic activity occurs on a diurnal basis, causing both oxygen and pH levels to shift from a maximum in daylight hours to a minimum at night.

The oxygen, produced by algae and surface reaeration, is used by aerobic and facultative bacteria to stabilize organic material in the upper layer of water. Anaerobic fermentation is the dominant activity in the bottom layer in the lagoon. In cold climates, oxygenation and fermentation reaction rates are significantly reduced during the winter and early spring and effluent quality may be reduced to the equivalent of primary effluent when an ice cover persists on the water surface. As a result, many states in the northern United States and Canada prohibit discharge from facultative lagoons during the winter.

Although the facultative lagoon concept is land intensive, especially in northern climates, it offers a reliable and easy-to-operate process that is attractive to small, rural communities.

Common Modifications

A common operational modification to facultative lagoons is the "controlled discharge" mode, where pond discharge is prohibited during the winter months in cold climates and/or during peak algal growth periods in the summer. In this approach, each cell in the system is isolated, then discharged sequentially. A similar modification, the “hydrograph controlled release” (HCR), retains liquid in the pond until flow volume and conditions in the receiving stream are adequate for discharge.

A recently developed physical modification uses plastic curtains, supported by floats and anchored to the bottom, to divide lagoons into multiple cells and/or to serve as baffles to improve hydraulic conditions. Another recent development uses a floating plastic grid to support the growth of duckweed (*Lemna* sp.) plants on the surface of the final cell(s) in the lagoon system, which restricts the penetration of light and thus reduces algae (with

sufficient detention time ≥ 20 days), improving the final effluent quality.

APPLICABILITY

The concept is well suited for rural communities and industries where land costs are not a limiting factor. Facultative lagoons can be used to treat raw, screened, or primary settled municipal wastewater and biodegradable industrial wastewaters.

ADVANTAGES AND DISADVANTAGES

Some advantages and disadvantages of facultative lagoons are listed below:

Advantages

Moderately effective in removing settleable solids, BOD, pathogens, fecal coliform, and ammonia.

Easy to operate.

Require little energy, with systems designed to operate with gravity flow.

The quantity of removed material will be relatively small compared to other secondary treatment processes.

Disadvantages

Settled sludges and inert material require periodic removal.

Difficult to control or predict ammonia levels in effluent.

Sludge accumulation will be higher in cold climates due to reduced microbial activity.

Mosquitos and similar insect vectors can be a problem if emergent vegetation is not controlled.

Requires relatively large areas of land.

Strong odors occur when the aerobic blanket disappears and during spring and fall lagoon turnovers.

Burrowing animals may be a problem.

DESIGN CRITERIA

Waste stabilization pond systems are simplistic in appearance, however, the reactions are as complicated as any other treatment process. Typical equipment used in facultative lagoons includes lining systems to control seepage to groundwater (if needed), inlet and outlet structures, hydraulic controls, floating dividers, and baffles. Many existing facultative lagoons are large, single-cell systems with the inlet constructed near the center of the cell. This configuration can result in short-circuiting and ineffective use of the design volume of the system. A multiple-cell system with at least three cells in series is recommended, with appropriate inlet and outlet structures to maximize effectiveness of the design volume. Most states have design criteria that specify the areal organic loading (kg/ha/d or lbs/acre/d) and/or the hydraulic residence time. Typical organic loading values range from 15 to 80 kg/ha/d (13 to 71 lbs/acre/d). Typical detention times range from 20 to 180 days depending on the location. Detention times can approach 200 days in northern climates where discharge restrictions prevail. Effluent biochemical oxygen demand (BOD) ≤ 30 mg/L can usually be achieved, while effluent TSS may range from ≤ 30 mg/L to more than 100 mg/L, depending on the algal concentrations and design of discharge structures.

A number of empirical and rational models exist for the design of simple and series constructed facultative lagoons. These include first-order plug flow, first-order complete mix, and models proposed by Gloyna, Marais, Oswald, and Thirumurthi. None of these has been shown to be clearly superior to the others. All provide a reasonable design as long as the basis for the formula is understood, proper parameters are selected, and the hydraulic detention and sludge retention characteristics of the system are known. This last element is critical because short circuiting in a poorly designed cell can result in

detention time of 40 percent or less than the theoretical design value.

PERFORMANCE

Overall, facultative lagoon systems are simple to operate, but only partially reliable in performance. BOD_5 removal can range up to 95 percent. However, the TSS range may exceed 150 mg/L. Removal of ammonia nitrogen can be significant (up to 80 percent), depending on temperature, pH, and detention time in the system. However, the removal cannot be sustained over the winter season. Due to precipitation reactions occurring simultaneously with the daily high pH (alkaline) conditions in the lagoon, approximately 50 percent phosphorus removal can be expected. Removal of pathogens and coliforms can be effective, depending on temperature and detention time.

Limitations

Limitations may include the inability of the process to meet a 30 mg/L limit for TSS due to the presence of algae in the effluent, particularly during warm weather, and not meeting effluent criteria consistently throughout the year. In cold climates, low temperatures and ice formation will limit process efficiency during the winter. Odors may be a problem in the spring and fall during periods of excessive algal blooms and unfavorable weather conditions.

OPERATION AND MAINTENANCE

Most facultative lagoons are designed to operate by gravity flow. The system is not maintenance intensive and power costs are minimal because pumps and other electrically operated devices may not be required. Although some analytical work is essential to ensure proper operation, an extensive sampling and monitoring program is usually not necessary. In addition, earthen structures used as impoundments must be inspected for rodent damage.

COSTS

Cost information for facultative lagoons varies significantly. Construction costs include cost of the land, excavation, grading, berm construction, and inlet and outlet structures. If the soil is permeable, an additional cost for lining the lagoon should be considered.

REFERENCES

Other Related Fact Sheets

Other EPA Fact Sheets can be found at the following web address:

http://ww.epa.gov/owm/mtb/mtbfact.htm

1. Middlebrooks, E.J., et al., 1982. *Wastewater Stabilization Lagoon Design, Performance and Upgrading*, McMillan Publishing Co., New York, NY.

2. Pano, A. and Middlebrooks, E.T., 1982. Ammonia Nitrogen Removal in Facultative Wastewater Stabilization Ponds. Water Pollution Control Federation Journal, 54 (4) 344-351.

3. Reed, S.C., et al., 1995, 2nd Ed. *Natural Systems for Waste Management and Treatment*, McGraw Hill Book Co., New York, NY.

4. Reed, S.C., 1985. *Nitrogen Removal in Wastewater Stabilization Ponds*, Water Pollution Control Federation Journal. 57(1)39-45.

5. U.S. EPA, 1983. *Design Manual - Municipal Wastewater Stabilization Ponds*, EPA-625/1-83-015, US EPA CERI. Cincinnati, OH.

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ADDITIONAL INFORMATION

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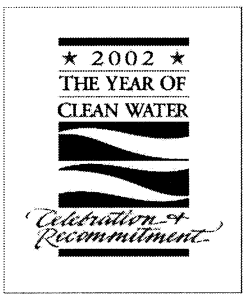
Office of Water
EPA 832-F-02-014
September 2002

For more information contact:

Municipal Technology Branch
U.S. EPA
1200 Pennsylvania Ave., NW
Mail Code 4201M



OWM MTB
Excellence in compliance through optimal technical solutions
MUNICIPAL TECHNOLOGY BRANCH

Smithton, MO
Asset Report
Depreciated Value of 2020 Cost

June 30, 2022

Asset Description	Year Installed	Estimated Installation Cost 2020	Age (2020)	Depreciation Period [1]	Depreciation [2]	Depreciated Value [3]
Well #1	1929	$ 340,092.50	91	55	$ 562,698.50	$ -
Well #1 Improvement-Pump	1993	$ 15,000.00	27	12	$ 33,750.00	$ -
Well #1 Improvement-Chlorine Feed Equipment	1993	$ 6,000.00	27	35	$ 4,628.57	$ 1,371.43
Well #1 Improvement-New Meter & Controls	2010	$ 7,500.00	10	35	$ 2,142.86	$ 5,357.14
Well #2	1983	$ 293,540.50	37	55	$ 197,472.70	$ 96,067.80
Well #2 Chlorine Feed Equipment	1983	$ 6,000.00	37	35	$ 6,342.86	$ -
Elevated Tank	1953	$ 163,625.00	67	42	$ 261,020.83	$ -
2-inch Water Main	1996	$ 305,000.00	24	50	$ 146,400.00	$ 158,600.00
4-inch Water Main	1996	$ 103,500.00	24	50	$ 49,680.00	$ 53,820.00
6-inch Water Main	1996	$ 665,000.00	24	50	$ 319,200.00	$ 345,800.00
Hydrants	1996	$ 105,000.00	24	50	$ 50,400.00	$ 54,600.00
Water Services and Meters	1996	$ 384,000.00	24	35	$ 263,314.29	$ 120,685.71
Total Water Assets		$ 2,394,258.00				$ 836,302.09
Wastewater Treatment Plant	1969	$ 155,000.00	51	40	$ 197,625.00	$ -
Lift Station #1	2000	$ 26,950.00	20	10	$ 53,900.00	$ -
Lift Station #2	1969	$ 26,950.00	51	10	$ 137,445.00	$ -
Sewer	1965	$ 1,243,000.00	55	50	$ 1,367,300.00	$ -
Manholes	1998	$ 262,500.00	22	50	$ 115,500.00	$ 147,000.00
Service Laterals	1965	$ 76,800.00	55	50	$ 84,480.00	$ -
Total Wastewater Assets		$ 1,791,200.00				$ 147,000.00

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%

https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=WR-2015-0138&attach_id=2015030930

*Revised 1/23/2015

ATTACHMENT C

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.

https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=WM-2016-0169&attach_id=2016015052

ATTACHMENT C

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 C

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.

https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=SR-2014-0105&attach_id=2014014505

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.

https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=SR-2014-0068&attach_id=2014016258

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

https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=SR-2013-0435&attach_id=2013018070

Accounting Schedule:06
Sponsor: Paul R. Harrison
Page: 1 of 1

ATTACHMENT C

Appendix I-C has been marked CONFIDENTIAL in its entirety.

Appendix J-C has been marked CONFIDENTIAL in its entirety.

Customer Service Transition
City of Smithton Acquisition

Current Smithton Practice		Proposed MAWC Practice	
Customer Service Physical Location			
Office Location: Smithton City Hall 101 West Washington Smithton, MO 65350	Hours of Operation: Tuesday & Thursday 8:30 am-12:30 pm 1:30 pm-5:30 pm Wednesday 8:30 am-12:30 pm	Office Location: Missouri-American Water 1705 Montserrat Park Rd Warrensburg, MO 64093	Hours of Operation: Monday - Friday 7:30 am to 4:00 pm
Customer Service Contact Information			
Contact: Smithton City Hall 101 West Washington Smithton, MO 65350	Hours Available: Tuesday & Thursday 8:30 am-12:30 pm 1:30 pm-5:30 pm Wednesday 8:30 am-12:30 pm	Contact: Customer Service Center (866-430-0820) *OR* Customer Portal www.missouriamwater.com *OR* Direct E-mail welcomemoaw@amwater.com	Hours Available: Customer Service Center Monday – Friday 7:00 am – 7:00 pm (24/7 for emergencies)
Payment Options			
Cash or Check Debit/Credit Card Pay in-person, drop-off, via mail, and online.		Cash or Check Debit/Credit Card Electronic Funds Transfer ("EFT") Pay via mail, telephone, online or at select third party payment locations. No transaction fees for debit/credit cards	
Billing Process			
Meters are read around the 18th of every month. Bills are sent out a few days after meters are read. A $10.00 late fee is added to the account balance if a payment is not made by the 10th day of the month. Service is discontinued if not paid by the 17th of the month.		Standard MAWC billing process Bill generated within 3 days of meter read, with due date of 21 days from invoice date.	

Note: Customers will be integrated into the MAWC systems, and do not need to apply for service at the time of transition.

Other Customer Service Documentation

Attachment K1	MAWC Collections Process Timeline
Attachment K2	Sample Customer Discontinuance, Final Discontinuance & Overdue Payment Notices
Attachment K3	Sample Customer Welcome Letter & Customer Rights and Responsibilities
Attachment K4	Sample Customer Bill

1017	Missouri	Missouri	Missouri	Missouri
Strategy	Residential	Non-Residential	Sewer Only	MultiDwelling
Threshold	$75	$75	$135	$100
Day Zero = Invoice Postmark				
Day 1	Invoice	Invoice	Invoice	Invoice
Day 2	↓	↓	↓	↓
Day 3	↓	↓	↓	↓
Day 4	↓	↓	↓	↓
Day 5	↓	↓	↓	↓
Day 6	↓	↓	↓	↓
Day 7	↓	↓	↓	↓
Day 8	↓	↓	↓	↓
Day 9	↓	↓	↓	↓
Day 10	↓	↓	↓	↓
Day 11	↓	↓	↓	↓
Day 12	↓	↓	↓	↓
Day 13	↓	↓	↓	↓
Day 14	↓	↓	↓	↓
Day 15	↓	↓	↓	↓
Day 16	↓	↓	↓	↓
Day 17	↓	↓	↓	↓
Day 18	↓	↓	↓	↓
Day 19	↓	↓	↓	↓
Day 20	↓	↓	↓	↓
Day 21	Due Date	Due Date	Due Date	Due Date
Day 22	DD+1	DD+1	DD+1	DD+1
Day 23	DD+2	DD+2	DD+2	DD+2
Day 24	DD+3	DD+3	DD+3	DD+3
Day 25	DD+4	DD+4	DD+4	DD+4
Day 26	DD+5	DD+5	DD+5	DD+5
Day 27	LDSN	LDSN	LSON	MDDN
Day 28	DD+7	DD+7	DD+7	DD+7
Day 29	DD+8	DD+8	DD+8	DD+8
Day 30	CAF1	CAF1	DD+9	CAF1
Day 31	CAFP	CAFP	CAF1	CAFP
Day 32	DD+11	DD+11	CAFP	DD+11
Day 33	LDMO	LDMO	BSEW	DD+12
Day 34	DD+13	DD+13		DD+13
Day 35	DD+14	DD+14		DD+14
Day 36	DD+15	DD+15		DD+15
Day 37	DD+16	DD+16		DD+16
Day 38	ODSN	ODSN		OPNL
Day 39	DD+18	DD+18		DD+18
Day 40	DD+19	DD+19		DD+19
Day 41	DD+20	DD+20		DD+20
Day 42	DD+21	DD+21		DD+21
Day 43	DD+22	DD+22		DD+22

Day 44	DD+23	DD+23		DD+23
Day 45	**MOUT**	**MOUT**		DD+24
Day 46				DD+25
Day 47				DD+26
Day 48				DD+27
Day 49				DD+28
Day 50				**OMDN**
Day 51				DD+30
Day 52				DD+31
Day 53				DD+32
Day 54				DD+33
Day 55				DD+34
Day 56				DD+35
Day 57				DD+36
Day 58				**MOUT**

Write Off Occurs 90 Days after final bills due.

MISSOURI AMERICAN WATER

AMERICAN WATER, PO BOX 578, ALTON IL, 62002

08/11/2022

For Service To:

Account Number	
Pay Before	08/22/2022
Total Due	371.73

TIME SENSITIVE NOTICE:

To ensure timely receipt of your payment, please use one of the payment options noted below. Do not mail your payment.

IMPORTANT: DISCONTINUANCE NOTICE

Please read and take the steps needed to avoid your service from being discontinued.

PAY THIS AMOUNT **$371.73** **PRIOR TO** **08/22/2022**

Payment on your Water account is overdue. If payment is not received, your service may be shut off on or after 08/22/2022. You can prevent discontinuation of water service by paying the amount printed above. Please use one of our convenient payment options listed below to ensure your payment is applied to your account immediately.

It is our sincere goal to work with you to correct this situation before further action becomes necessary. Please respond immediately so that we can assist you as best as possible. If you do not respond to this notice and your service is disconnected, any installment plan may be considered in default and you may be required to pay the full amount due including a disconnection charge, a restoration charge, along with an excavation charge, if required.

Please note, someone must be available at the premises when service is restored.

Disconnection Charge: $27.50
Regular Hour Restoration Charge: $27.50
Off Hour Restoration Charge: $159.00
Excavation Charge: Actual Cost

Payment must be made before 3:00 pm to have service restored the same day and to avoid the off-hour restoration charge.

If discontinuance of service becomes necessary, operation of the customer owned stop cock will be necessary. If the stop cock is found inoperable or breaks in the process of either discontinuing or restoring service, you will be required to repair or replace the stop cock prior to service being restored.

CONVENIENT PAYMENT OPTIONS

8 **Pay your bill online:** www.amwater.com/myaccount

) **Pay by Phone: 855-748-6066** 24 hours a day, seven days a week TTY/TDD FOR THE HEARING IMPAIRED: 711 (and then reference Customer Service number listed above)

€ **Pay in person:** for a list of approved payment locations, visit www.amwater.com/myaccount

Customer Service: M-F 7am to 7pm Emergency: 24/7: 1-855-669-8753 www.missouriamwater.com

ZZ_LDSNCOL_FICA

MISSOURI AMERICAN WATER CUSTOMER SERVICE

1-866-430-0820

HOURS: M-F, 7am-7pm ▪ Emergencies: 24/7

TTY/TDD FOR THE HEARING IMPAIRED: 711 (and then reference Customer Service number listed above)

Esto es un aviso importante sobre su servicio de agua. Para la ayuda de la traducción, por favor llamas a Missouri American Water al numero 1-866-430-0820.

ADDRESS, EMAIL OR PHONE NUMBER CHANGE REQUEST

Please let us know if we need to update your contact information in our records. NOTE: If you are moving or need to make a name change, please contact our customer service center at the phone number listed on the front of this notice. Updates to your contact information can also be made through our online self-service tool, **MyWater**. Access MyWater by visiting amwater.com/mywater.

EASY PAYMENT OPTIONS

- **Online:** Visit www.amwater.com/billpay.
- **By phone:** 24/7 at 1-855-748-6066.
- **In person:** To find an authorized payment location near you, visit us online at missouriamwater.com. See Customer Service & Billing or call.

Want to avoid late payments in the future? Consider enrolling in Auto Pay. Enroll in Auto Pay, and your bill will be paid on time, every time. Each month, payments are automatically deducted from your checking or savings account on the due date. No stamps required.

Want to cut down on clutter and save some trees? Consider enrolling in our Paperless Billing Program. You must first sign up for MyWater by visiting amwater.com/mywater. After you enroll, you will only receive your bills online.

CUSTOMER ASSISTANCE PROGRAMS

If you're experiencing financial hardship, please reach out to us. We may be able to assist. Here are some of the programs we offer to help keep your life flowing:

FINANCIAL ASSISTANCE

Through our H2O Help to Others Program, we offer financial assistance to customers who qualify, as well as a Low-Income Assistance Program for eligible customers in certain areas.

Learn more online at missouriamwater.com. Under Customer Service & Billing, select Payment Assistance Program.

INSTALLMENT PLANS

You may be eligible for an installment plan to extend the time you have to pay a past due balance. Installment plans vary based on your past due amount and the information you provide to us about your ability to pay. We collect this information, including household income and number of people in your household, to determine what options we can provide to you.

BUDGET BILLING

Budget billing is a free service that is available to eligible residential customers. The program makes managing your cash flow easier by providing predictable monthly payments and avoiding unplanned seasonal spikes that may be difficult to pay.

WATER SAVING TIPS AND TOOLS

We offer tips and tools to help customers save water and money:

- **Leak Detection Kit** to help identify common and not-so-common household leaks.
- **Conservation Tips**

Visit missouriamwater.com. Under Water Information, select Detecting Leaks and Wise Water Use.

MANAGE YOUR ACCOUNT ONLINE WITH MYWATER

MyWater is a fast and easy way to access and manage your account online.
Here are a few things you can do through MyWater:

- View and pay your bill
- Sign up for our Auto Pay and Paperless Billing programs.
- Check your account balance.
- Update your contact information.
- Sign up to receive emergency and non-urgent alerts by email, phone and text.
- View your water use history. (See in which months you use the most water to help determine ways you can save water and money.)

Access MyWater online at **amwater.com/mywater**.

MISSOURI AMERICAN WATER
P.O. Box 2798, Camden, NJ 08101

08/11/2022

For Service To:
Account Number:
Service Address:

FINAL DISCONTINUANCE NOTICE
PAY THIS AMOUNT: $156.28 PRIOR TO: 08/16/2022

Payment on your Water account is overdue. If payment is not received, your service may be shut off on or after 08/16/2022. You can prevent discontinuation of water service by paying $156.28.

It is our sincere goal to work with you to correct this situation before further action becomes necessary. Please respond immediately so that we can assist you as best as possible. If you do not respond to this notice and your service is disconnected, any installment plan may be considered in default and you may be required to pay the full amount due including a disconnection charge, restoration charge, along with an excavation charge, if required. Please call customer service at the number listed below to ensure payment is applied to your account immediately.

Please note, someone must be available at the premises when service is restored.

Disconnection Charge: $27.50
Regular Hour Restoration Charge: $27.50
Off Hour Restoration Charge: $159.00
Excavation Charge: Actual Cost

Payment must be made before 3:00 pm to have service restored the same day and to avoid the off-hour restoration charge.

For St. Louis County customers only: If discontinuance of service becomes necessary, operation of the customer owned stop cock will be necessary. If the stop cock is found inoperable or breaks in the process of either discontinuing or restoring service, you will be required to repair or replace the stop cock prior to service being restored.

CONVENIENT PAYMENT OPTIONS

8 **Pay your bill online:** www.amwater.com/myaccount

) **Pay by Phone: 855-748-6066** 24 hours a day, seven days a week TTY/TDD FOR THE HEARING IMPAIRED: 711 (and then reference Customer Service number listed above)

€ **Pay in person:** for a list of approved payment locations, visit www.amwater.com/myaccount

ZZ_LDMOCOL_FICA

MISSOURI AMERICAN WATER

AMERICAN WATER, PO BOX 578, ALTON IL, 62002

08/11/2022

For Service To:

Account Number	
Pay Before	08/17/2022
Total Due	131.96

TIME SENSITIVE NOTICE:

To ensure timely receipt of your payment, please use one of the payment options noted below. Do not mail your payment.

IMPORTANT: OVERDUE NOTICE

Please read and take the steps needed to avoid your service from being terminated.

PAY THIS AMOUNT **$131.96** **PRIOR TO** **08/17/2022**

Providing reliable, quality wastewater service to our customers is a top priority. That's why we are contacting you today about a very important matter regarding your account. Your wastewater bill for the amount shown above is now overdue. To assure continued service, payment is due upon receipt of this notice. If you have already submitted your payment, thank you and please disregard this notice.
As a reminder, we provide our customers with several convenient ways to pay their bills.

1. Register for a self-service account and submit payment at www.amwater.com/MyAccount.
2. Sign up for our automatic payment program through our web site.
3. Mail your payment using the return envelope enclosed with your bill.
4. Pay by phone by calling 855-748-6066. (A small fee is charged for this service.)
5. Pay at a local authorized payment location. You can search for sites by zip code on our website.
6. If you do not respond to this notice and your service is disconnected, any installment plan may be considered in default and you may be required to pay the full amount due and a service charge of $0.00 before service is reconnected.

If you are unable to make payment in full, you may contact the company within the next 10 days to see if you are eligible to make payment arrangements.

Again, thank you for the opportunity to provide quality, reliable wastewater service in your community. If you have additional questions, please contact our customer service center at 1-855-669-8753.

CONVENIENT PAYMENT OPTIONS

8 **Pay your bill online:** www.amwater.com/myaccount

) **Pay by Phone: 855-748-6066** 24 hours a day, seven days a week TTY/TDD FOR THE HEARING IMPAIRED: 711 (and then reference Customer Service number listed above)

€ **Pay in person:** for a list of approved payment locations, visit www.amwater.com/myaccount

Customer Service: M-F 7am to 7pm Emergency: 24/7: 1-855-669-8753 www.missouriamwater.com

ZZ_LSONCOL_FICA

ADDRESS, EMAIL OR PHONE NUMBER CHANGE REQUEST

Please let us know if we need to update your contact information in our records. NOTE: If you are moving or need to make a name change, please contact our customer service center at the phone number listed on the front of this notice. Updates to your contact information can also be made through our online self-service tool, **MyAccount**. Access MyAccount from any electronic device by visiting www.amwater.com/MyAccount.

MISSOURI AMERICAN WATER

February 25, 2022

Dear City of Hallsville Customer:

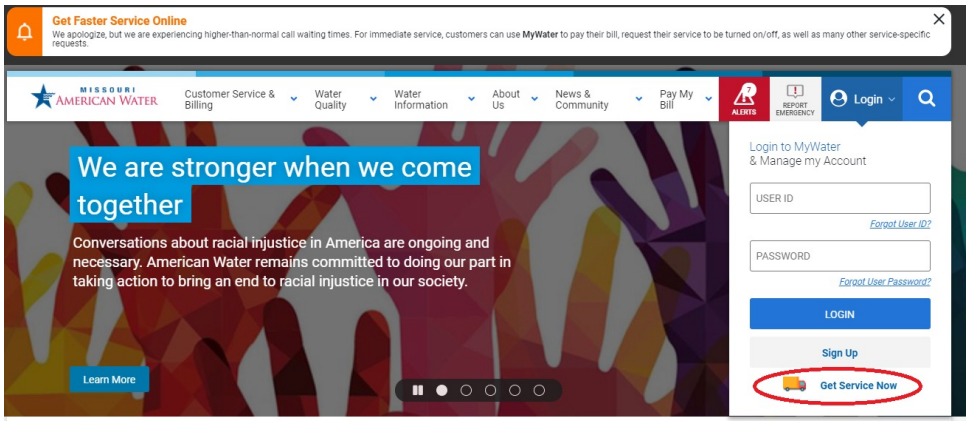
Welcome to the Missouri American Water family! We are thrilled to have you as a customer since February 25, 2022.

The transfer of your wastewater service account is being completed. There are no additional steps you need to take for your service to continue. Billing information is being transferred to our system. Your first bill from Missouri American Water is scheduled for the week of March 28.

Below are helpful tips as we transition to being your wastewater service provider. This information can also be found on our website at **missouriamwater.com > Customer Service & Billing**.

CUSTOMER SERVICE AT YOUR FINGERTIPS

As a customer of Missouri American Water, you have access to a self-service website allowing you to manage your account and get emergency updates any time, day or night. With MyWater, you can pay your bill and turn wastewater service on and off. When emergencies do occur, be sure you have access to the most up-to-date information by also signing up for alerts.



Signing up for MyWater is easy, free and simple! Visit **missouriamwater.com** and click on “Sign Up” in the “Login to MyWater” box in the top right corner. Make sure you have your Missouri American Water account number handy which is listed on the top corner of your bill.

MyWater provides you with 24/7 payment ability. With MyWater, you can view and pay your bill, manage your account, set up paperless billing, and enroll in autopay. Payments can also be made by phone or via mail. You can also pay by cash, check, or credit card. To learn more about these options, please visit **missouriamwater.com**. You can also contact customer service at **1-866-430-0820** or email **welcomemoaw@amwater.com** with any questions or concerns.

continued on reverse

Missouri American Water
506 S. Western St
Mexico, MO 65265
P 1-866-430-0820
missouriamwater.com

YOUR SERVICE

Missouri American Water operates under regulations established by the Missouri Public Service Commission (MoPSC). If you believe we have not responded to an issue in a satisfactory manner, you have the right to request that the MoPSC review the unresolved issue. You may contact them at:

Missouri Public Service Commission
Governor Office Building
200 Madison St, PO Box 360
Jefferson City, MO 65102-0360
800-392-4211 or psc.mo.gov

Included in this packet you will find a copy of our welcome booklet, our bill redesign fact sheet and our rights and responsibilities outline, which provides specific information about our policies regarding your wastewater service with us. It defines your rights and responsibilities and provides information about your bill, how to pay your bill and who to contact for questions regarding your service.

Our team of dedicated professionals is committed to providing exceptional wastewater and customer service. From customer service representatives to plant operators, our employees recognize the critical role they play in meeting your daily wastewater service needs. You will notice our employees are easily recognizable as they wear uniforms and carry company identification.

As a subsidiary of American Water, we have been providing reliable water and wastewater services for more than 140 years. We are a proud community partner, dedicated to making your customer experience a pleasant one. We look forward to serving your community.

Sincerely,

Patrick K Kelly

Patrick Kelly
Manager of Operations
Missouri American Water

Your Rights and Responsibilities as a Customer of Missouri American Water

If You Have a Question or Complaint

Missouri American Water customer service representatives are dedicated to handling every customer inquiry with attention and care. Our goal is to answer your question or resolve your issue quickly and effectively. We encourage customers to call us at 866-430-0820 as soon as an issue arises.

Bill Payment/Discontinuance of Service

Bill payments are due 21 days after the billing date. The due date is printed on the front of the bill. A delinquent charge may be applied to all accounts not paid in full by the due date. Bills become delinquent after the due date stated on the bill. If the bill is not paid, service may be disconnected.

We will mail a written notice at least 10 days before we discontinue service for water customers (including customers that are both water and wastewater customers of Missouri American Water), and at least 30 days before we discontinue service for wastewater-only customers. The notice explains the reason for the discontinuance of service and the amount of money owed in the case of a past due bill. For wastewater customers, the 30-day notice may be waived if there is any waste discharge that might be detrimental to the health and safety of the public or cause damage to the wastewater system.

If you receive a notice, please take immediate action to avoid service discontinuance. Call our Customer Service Center at 866-430-0820.

We will restore service when the bill has been paid or the conditions that caused the disconnection have been corrected. There is a reconnection fee. If you will be absent from your home or business for a period of time, you may avoid discontinuance of service by:

1. Forwarding your mail to an address where your bill will reach you.
2. Signing up for automatic payment.
3. Requesting termination of your service.

If you have a question about your bill that we cannot resolve to your satisfaction, you may pay the bill in full and Missouri American Water will credit any overpayment if the matter is resolved in your favor. If you do not pay the bill in full, Missouri American Water and the Missouri Public Service Commission (MoPSC) have complaint procedures in place that are available to customers to resolve disputes and avoid service discontinuance.

1. Customers must register a complaint by phone or in writing at least 24 hours before the date stated in the notice of discontinuance.
2. Within four days after registering the complaint, the customer must pay the part of the bill not in dispute. If the company and the customer cannot agree on the undisputed amount, at the company's discretion, it may be set at 50 percent of the disputed bill or at the amount of the customer's bill during the same time a year ago.
3. Missouri American Water will thoroughly investigate the complaint and attempt to resolve the problem. If, at the conclusion, the customer is still dissatisfied, we will mail a written notice explaining the MoPSC's informal complaint process. Informal complaints must be made to the MoPSC within five days after the date of the notice to avoid service disconnection. Informal complaints can be made by phone at 800-392-4211 or through the MoPSC's website at psc.mo.gov.
4. The MoPSC staff will investigate the informal complaint and issue findings. Missouri American Water or the customer may elect to file a formal complaint following the issuance of the finding.
5. A formal customer complaint must be filed within 30 days of the MoPSC findings to avoid disconnection. Formal complaints must follow specific rules set out in the MoPSC's Rules of Practice and Procedures, which is available on the MoPSC website at psc.mo.gov.

continued on reverse

Missouri American Water operates under regulations established by the Missouri Public Service Commission. If you feel we have not responded to your issue in a satisfactory manner, you have the right to request that the MoPSC review the unresolved issue. You may contact the MoPSC at:

Missouri Public Service Commission
Governor Office Building
200 Madison Street, PO Box 360
Jefferson City, MO 65102-0360
800-392-4211
psc.mo.gov

The Office of Public Counsel (OPC) provides an additional resource for Missouri utility customers. The OPC represents the interests of the public and utility customers in proceedings before the Missouri Public Service Commission and in appeals in the courts. You may contact the OPC at:

Office of Public Counsel
Governor Office Building
200 Madison Street, PO Box 2230
Jefferson City, MO 65102-2230
866-922-2959
opc.mo.gov

From time to time, Missouri American Water's policies may change, so please visit our website at **missouriamwater.com** for the latest information.

WELCOME NEW CUSTOMERS

MISSOURI
AMERICAN WATER

WE KEEP LIFE FLOWING®

WELCOME TO MISSOURI AMERICAN WATER! We look forward to serving you. Inside this booklet, you will find information on the following:

- Water and wastewater service
- System investment
- Emergency notifications
- Saving water and money
- Customer service
- Payment options
- Payment assistance program

For additional information, visit our website at **missouriamwater.com**.

RICHARD SVINDLAND
President

A Message from Missouri American Water President RICHARD SVINDLAND

Dear Customer,

Welcome to Missouri American Water. We are proud to be your water and/or wastewater service provider. Our team of experts delivers high-quality drinking water to nearly one in four Missourians, and we also treat wastewater for thousands of homes and businesses to protect the environment. **We're dedicated to providing our customers and communities with safe, clean, reliable and affordable water and wastewater service.**

This guide will answer questions you may have about our company and the services we offer. We hope you will review its contents and keep it for future reference. If you have questions about Missouri American Water, please call our Customer Service Center at 866-430-0820.

Sincerely,

RICHARD SVINDLAND
President

PROVIDING YOU WITH HIGH-QUALITY WATER

Nothing is more important than the safety and quality of our water. We work closely with the U.S. Environmental Protection Agency and the Missouri Department of Natural Resources to provide water that consistently meets or surpasses federal and state standards. To do this, we closely monitor our treatment process by performing more than 500,000 tests each year.

Our commitment to exceptional water quality is recognized in Missouri and across the country. Our parent company American Water has received more than 150 awards for superior water quality. All six of Missouri American Water's surface water treatment plants are recognized by the Partnership for Safe Water, an honor achieved by less than 1% of all water utilities.

RELIABLE WASTEWATER TREATMENT

We only have one environment, so we provide communities with scientifically proven solutions for the safe collection, treatment, and release of wastewater.

Below are a few examples of technology we implement:

- **Membrane Bioreactors:** A powerful and efficient solution for the treatment of wastewater.
- **Biological Nutrient Removal:** The removal of nutrients through an activated sludge system.
- **UV Disinfection:** Replacing chlorine with more environmentally friendly technologies for a safer, more efficient way to treat the water making it safe enough to return to the environment.

INVESTMENT YOU CAN COUNT ON

We continuously monitor, maintain and upgrade our facilities so they operate efficiently and meet all regulatory standards. This requires investing in our treatment plants, tanks, pump stations, fire hydrants and metering equipment.

Statewide, we invest more than $200 million per year in water and wastewater system improvements. Our ongoing commitment to investing in and updating our plants, pumps and pipelines helps provide safe, clean, and reliable service.

EMERGENCY INFORMATION YOU NEED

Missouri American Water uses a high-speed mass notification system to keep customers informed about water-emergencies and planned temporary service interruptions.

Make sure we can reach you by updating your contact information today through **MyWater** at **amwater.com/mywater** or by calling us at **866-430-0820.**

CONVENIENT CUSTOMER SERVICE

We know you're busy, so we've made it easier than ever to manage your account online through **MyWater**:

- Turn water service on and off
- Track water use
- Sign up for emergency alerts
- Manage your account
- View and pay your bill
- Set up paperless billing

Sign up today by visiting **missouriamwater.com**. You can also contact us at **866-430-0820** to speak with a U.S.-based customer service representative. Call anytime for a water emergency or 7 a.m. – 7 p.m. for non-emergency issues.

PAYMENT OPTIONS

Missouri American Water offers a number of payment options to fit into your busy lifestyle.

AUTOMATIC PAYMENTS: Pay your bill on time, every time. Each month, payments will be automatically deducted from your checking or savings account on the due date.

PAY ONLINE: Visit **amwater.com/billpay**. Be sure to have your 16-digit account number handy.

PAY BY PHONE: Call **855-748-6066** and use your Visa or MasterCard.

PAY BY MAIL: Send your payment and payment stub in the envelope provided. No cash, staples or paper clips.

PAY IN PERSON: Visit our website to find a location near you. Locations DO NOT accept payments by mail.

PAYMENT ASSISTANCE

Sometimes customers face circumstances that stretch their financial resources. Missouri American Water is here to assist. Our customer service representatives will work with you on a plan to pay the balance of your bill over time. You may also be qualified to receive emergency assistance through our H2O Help to Others Program™, which is supported by voluntary donations from our customers and the company.

For more information about payment assistance options, contact our Customer Service Center at **866-430-0820** or visit us online at **missouriamwater.com > Customer Service & Billing > Payment Assistance Program**.

CONTACT US

Our customer service representatives are dedicated to handling every customer inquiry with attention and care.

866-430-0820
Hours: 7 a.m.–7 p.m.
For emergencies, we're available 24/7.

infomo@amwater.com

missouriamwater.com

/missouriaw

/moamwater

/moamwater

727 Craig Road
St. Louis, MO 63141

506 S. Western St
Mexico, MO 65265

SERVICE. ONE MORE WAY WE KEEP LIFE FLOWING.

MISSOURI AMERICAN WATER

WE KEEP LIFE FLOWING™

Statement

Account No. **1017-200000000001**

Total Amount Due:	**$96.03**
Payment Due By:	**February 15, 2022**

Service Address:
JUANITA SAMPLE
123 WATER WAY
SMITHTON, MO 65350-0001

Billing Date:	January 24, 2022
Service Period:	Dec 29 to Jan 28 (31 Days)
Total Gallons:	4,000

THANK YOU FOR BEING OUR CUSTOMER.

Important Account Messages

- Want to get to know us better? Visit www.missouriamwater.com to learn more about the services we provide.

For more information, visit www.missouriamwater.com

Account Summary – *See page 3 for Account Detail*

Prior Billing:		$0.00
Payments:	-	$0.00
Balance Forward:	=	**$0.00**
Service Related Charges:	+	$94.64
Pass Through Charges:	+	$0.44
Taxes:	+	$0.95
Total Amount Due:	=	**$96.03**

View your account information or pay your bill anytime at: www.amwater.com/MyAccount

Pay by Phone*: Pay anytime at 1-855-748-6066
**A convenience fee may apply*

Customer Service: 1-866-430-0820
M-F 7:00am to 7:00pm – Emergencies 24/7

MISSOURI AMERICAN WATER
PO BOX 6029
CAROL STREAM, IL 60197-6029

Please return bottom portion with your payment. DO NOT send cash. Retain upper portion for your records.

MISSOURI AMERICAN WATER

WE KEEP LIFE FLOWING™

P.O. BOX 91623
RANTOUL, IL 61866-8623

Account No. **1017-200000000001**

Total Amount Due:	**$96.03**
Payment Due By:	**February 15, 2022**

If paying after 2/15/22, pay this amount: $97.18

Service to: 123 WATER WAY
SMITHTON, MO 65350-0001

Amount Enclosed $

JUANITA SAMPLE
123 WATER WAY
SMITHTON, MO 65350-0001

MISSOURI AMERICAN WATER
PO BOX 6029
CAROL STREAM, IL 60197-6029

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Messages from Missouri American Water

- Effective 02/01/22, the Water and Sewer Infrastructure Rate Adjustment (WSIRA) per 1,000 gallons is $0.2559 for Rate A (residential & commercial), $0.0825 for Rate B (sale for resale), and $0.0894 for Rate J (large industrial). The WSIRA funds completed water infrastructure replacements and related improvements for our Missouri customers. WSIRA is implemented pursuant to Sections 393.1500 through 393.1509, RSMo. Additional information is available on our website at www.missouriamwater.com

CUSTOMER SERVICE
1-866-430-0820

HOURS: M-F, 7am-7pm ▪ Emergencies: 24/7
TTY/TDD FOR THE HEARING IMPAIRED:
711 (and then reference Customer Service number listed above)

SERVICES

Go Paperless: Save time. Save money. Sign up for **Paperless Billing** and **Auto Pay** on My Account at amwater.com/myaccount. Not registered? Log in and be sure to have your account number handy.

Water Quality: We take water quality seriously. When it comes to complying with federal drinking water standards, we consistently score better than the industry average. For a copy of the annual water quality report for your area, visit missouriamwater.com. Under Water Quality, select Water Quality Reports.

H_2O Help To Others: H_2O Help to Others is an emergency assistance program created by Missouri American Water and Missouri's Community Action Agencies. The program helps provide supplemental funding to Missouri American Water customers who would otherwise have trouble paying their bills. H_2O Help to Others is supported by contributions from Missouri American Water and voluntary contributions from customers.

EXPLANATION OF OTHER TERMS

Payment by Check: Paying by check authorizes American Water to send the information from your check electronically to your bank for payment. The transaction will appear on your bank statement. The physical check will not be presented to your financial institution or returned to you.

Estimated Bill: This occurs when we are unable to read the water meter. Your usage from the same billing period the prior year is used to calculate the estimated bill. The next actual meter reading corrects any over or under estimates.

Disputes: If you have questions or complaints about your bill, please call us at 1-866-430-0820 before the due date. If your bill is unusually high, it may indicate that there is a leak in your plumbing. For tips on how to detect leaks and use water wisely, visit us online. You'll find helpful tools under the Water Information menu. Every drop counts!

Rates: A detailed listing of charges that make up your bill is available upon request by contacting Customer Service or visiting us online at missouriamwater.com. Under Customer Service & Billing, select Your Water and Sewer Rates.

Correspondence: Please send written correspondence to PO Box 578, Alton, IL 62002-0578. Be sure to include your name, account number, service address, mailing address and phone number including area code. Please do not send correspondence with your payment, as it may delay processing your payment and correspondence.

H2O HELP TO OTHERS PROGRAM - lend a hand to customers in need

☐ I'm adding a one time contribution of $_____ with my payment.
☐ I'd like to add a recurring contribution to each bill of $_____. I understand this amount will be added to each bill.

Address Change(s)

Name

Address

City

State

Zip Code

( ) Phone Number

☐ Mobile Number

E-mail Address

Other ways to pay your bill

Auto Pay

Save time and money. Enroll in Auto Pay, and your bill will be paid on time, every time, directly from your bank account on the due date. No stamps required!

Online

With My Account, you can pay your bill anytime, anywhere. Registration is fast and easy. Visit www.amwater.com/MyAccount or pay without registration at www.amwater.com/billpay (fee may apply).

In Person

We have agreements with several authorized payment locations in our service areas. Visit our website to find one near you.

MISSOURI AMERICAN WATER
WE KEEP LIFE FLOWING™

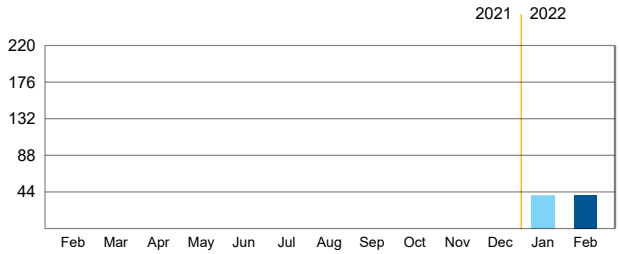
Meter Reading and Usage Summary

Meter No.	Measure	Size	From Date	To Date	Previous Read	Current Read	Meter Units	Billing Units	Total Gallons
12345678	100 gal	5/8"	12/29/2021	01/28/2022	1,548 (A)	1,588 (A)	40	40.00	4,000

A = Actual E = Estimate 1 Billing Unit = 100 gallons Total Gallons: 4,000

Billed Usage History (graph shown in 100 gallons)

n 4,000 gallons = usage for this period



Next Scheduled Read Date: on or about February 25, 2022
Account Type: Residential

Average daily use for this period is: (31 days)

129 gallons

Year to Date Billed Usage: 8,000 gallons

Account Detail

Account No. 1017-200000000001
Service To: 123 WATER WAY SMITHTON, MO 65350-0001

Prior Billing		**0.00**
Payments		**0.00**
Balance Forward		**0.00**
Service Related Charges - 12/29/21 to 01/28/22		
Water Service		**35.01**
Water Service Charge		9.00
Water Usage Charge	(40 x $0.62469)	24.99
WSIRA Surcharge	(40 x $0.025591)	1.02
Wastewater Service		**59.63**
Wastewater Service Charge		58.13
WSIRA Surcharge	($58.13 x 2.5882%)	1.50
Total Service Related Charges		**94.64**
Pass Through Charges		**0.44**
Water Primacy Fee 12/29/21 to 01/28/22	(1 x $0.44)	0.44
Taxes		**0.95**
City Sales Tax		0.95
Total Current Period Charges		**96.03**
Total Amount Due		**$96.03**

Understanding Your Bill

The information below defines some of the new terms you may find on your bill:

- **Service Related Charges:** This section includes charges for services related to water, wastewater and fire protection. If applicable, credits and debits for correction to previously billed charges are itemized in this section.
- **Fees and Adjustments:** This section provides details related to additional charges or adjustments for the service period referenced. Fees, when applicable, would include items such as service activation and late payment charges.
- **Pass Through Charges:** Charges in this section, when applicable, are separated from other service related charges to provide visibility into what portion of your bill is being remitted to other entities. Payment received for these charges does not remain with American Water. While we may bill and collect for them, the payments received are passed along to other companies and agencies.
- **Billing Units:** One billing unit equals 100 gallons of water used. If the meter serving your property measures your water use in cubic feet or a different unit of measure, we convert the usage to gallons to make it easier to understand.
- **Average Daily Use:** The gallons shown in the water droplet above represent your average daily water use for the current billing period. Tracking the amount of water you use can help you manage your overall water use from month to month.
- **Still have questions?** We are here to help. Our customer service representatives are available M–F, 7 a.m. to 7 p.m. More information on understanding your bill and charges can also be found on our website. See the link below.

For more information about your charges and rates, please visit:
https://amwater.com/moaw/rates

<This page is intentionally left blank and reserved for future messages>

WATER MAIN BREAKS
WHAT YOU NEED TO KNOW

MISSOURI AMERICAN WATER

Our employees work around the clock in all types of weather to restore service to you as quickly as possible.

We also work to prevent breaks – this year we're investing nearly $150 million to replace aging pipe.

We can be reached at our Customer Service Center:

1-866-430-0820

Hours: Mon-Fri, 7am – 7pm

For emergencies, we're available 24/7.

What causes a water main break?

WEATHER

- In winter the water flowing through pipes can drop to near freezing, causing old pipes to contract and break.
- Freezing and thawing can cause soil to shrink, swell, and shift, leaving pipes unsupported.

DEMAND

- Higher demand means higher pressure, which can break weak spots in pipes.

How long do repairs take?

Most breaks are repaired within 6-8 hours. However, the time it can take to repair varies on a number of factors including:

- The time it takes to identify and locate other utility lines (gas, electric and sewer)
- How quickly we can pinpoint the location of the break
- The severity of the break
- If other utilities are in close proximity to the break

REPORT EMERGENCY

WAYS TO REPORT

» missouriamwater.com
» MyWater account
» 1-866-430-0820

To receive Alerts during a water emergency, sign up for MyWater at **amwater.com/mywater**

Will water be shut off?

Water service may be interrupted. We make every attempt to repair breaks without shutting off water, but this is not always possible.

Will the water be safe to drink?

Water quality is often not affected by main breaks, but in some cases we issue precautionary boil advisories due to a loss of pressure in the water system. If this happens water should be brought to a rolling boil for 3 minutes before drinking or cooking.

You may notice air in the pipes after a repair or discoloration, which will go away after letting your cold water run briefly.

Bill Inserts and Important Notices

We encourage you to click the link(s) below to view any bill inserts and other important notices you would have received with your printed bill.

https://amwater.com/files/Smithton.pdf