

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-0109274

Owner: Village of Freistatt
Address: 105 E. 3RD Street, Freistatt, MO 65654

Continuing Authority: Same as Above
Address: Same as Above

Facility Name: Village of Freistatt WWTF, **Class D Operator Required**
Facility Address: 105 E. 3RD Street, Freistatt, MO 65654

Legal Description: SW¹/₄, NE¹/₄, Sec. 29, T27N, R27W, Lawrence County
UTM (X,Y): 419595 / 4098187

Receiving Stream: Unnamed Tributary to Spring River (U)
First Classified Stream and ID: Spring River (P) (03164)
USGS Basin & Sub-watershed No.: (11070207-010004)

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

FACILITY DESCRIPTION

POTW / Sewerage Works – SIC #4952 / 4952

Single cell lagoon / spray irrigation / sludge retained in lagoon.

Design organic population equivalent is 234.
Design average daily flow is 0.0234 MGD (dry weather flows).
Design sludge production is 3.5 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 644.051.6 of the Law.

June 21, 2010

Effective Date

Mark N. Templeton, Director Department of Natural Resources

June 20, 2015

Expiration Date

Cynthia S. Davies, Regional Director, Southwest Regional Office

FACILITY DESCRIPTION (continued)

Land Application:

Irrigation volume per year: 8,541,000 gallons (including 1-in-10 year flows)
Irrigation areas: 8.5 acres at design loading
Application rates per acre: 0.04 inch / hour; 0.105 inch / day; 0.738 inches / week; 38.38 inches / year
Field slopes: less than 3 percent
Equipment type: sprinklers
Vegetation: grass land / pasture
Application rate is based on: hydraulic loading rate

Monitoring Well #1 (MW#1)

Legal Description: SW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 29, T27N, R27W, Lawrence County
UTM (X / Y): 419595 / 4098188

Monitoring Well #2 (MW#2)

Legal Description: SE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 29, T27N, R27W, Lawrence County
UTM (X / Y): 419371 / 4098054

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 8	
					PERMIT NUMBER MO-0109274	
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 upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u> – (Note 1, 2, and 3)						
Lagoon Freeboard	feet	*		*	once/month	measured
Rainfall	inches	*		*	daily	total
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE October 28, 2010 .						
<u>Outfall #002</u> – Land Application Operational Monitoring (Notes 2 & 3)						
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches / acre	*			daily	total
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE October 28, 2010 .						
<u>Outfall #002</u> – Irrigated Wastewater (Notes 4)						
pH – Units	SU	***			once/quarter****	grab
Total Kjeldahl Nitrogen as N	mg/L	*			once/quarter****	grab
Nitrate / Nitrite as N	mg/L	*			once/quarter****	grab
Ammonia Nitrogen as N	mg/L	*			once/quarter****	grab
Total Phosphorus as P	mg/L	*			once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE October 28, 2010 . THERE SHALL BE NO DISCHARGE OF FLOATING OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<u>Monitoring Wells #1 & #2</u> – Ground Water Monitoring Wells						
Groundwater Depth*****	feet	*			once/month**	grab
Nitrate, Total as NO ₃	mg/L	10			once/month**	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE October 28, 2010 .						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the month of March (samples collected daily and monthly), report due by April 28th.
- *** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units.
- **** **Sampling shall occur once per quarter in the periods of January through March, April through June, July through September, and October through December, please note that monitoring reports shall be submitted no later than the 28th day of the month following the monitoring period (April 28th, July 28th, October 28th, and January 28th, respectively).**
- ***** Measure depth of groundwater as feet below the ground surface.

Note 1 - No-discharge Facility requirements: Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10 year 365 day rainfall (53 inches) or the 25-year-24-hour storm event (6.8).

- Note 2 Records shall be maintained and summarized into an annual operating report, which shall be submitted by **January 28th** of each year for the previous calendar year. The report shall include the following:
- a. Record of maintenance and repairs during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
 - b. The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharged occurred and effluent analysis performed; and
 - c. A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the application rate in inches per acre per day and for the year, the monthly and annual precipitation received at the facility and summary of testing results.

Note 3 – Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

Note 4 – Wastewater that is irrigated shall be sampled at the irrigation pump or wet well.

C. SPECIAL CONDITIONS

1. Emergency Discharge. Outfall 001 may only discharge if rainfall exceeds the 1 in 10 year (Data taken from the Missouri Climate Atlas) or the 24 hour, 25 year (Data taken from NRCS Urban Hydrology for Small Watersheds) rainfall events. **Discharge for any other reason shall constitute a permit violation and shall be recorded in accordance with Standard Conditions, Part 1, Section B.2.b.** Monitoring shall take place once per day while discharging. Test results are due on the 28th day of the month after the cessation of the discharge. Permittee shall monitor for the following constituents:

Constituent	Units
Flow	MGD
Biochemical Oxygen Demand ₅	mg/L
Total Suspended Solids	mg/l
Total Ammonia Nitrogen	mg/L
Temperature	°C
pH – Units	Standard Units

2. Report as no-discharge when a discharge does not occur during the reporting period.
3. Outfalls must be marked in the field and on the topographic site map submitted with the permit application.

C. SPECIAL CONDITIONS (continued)

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. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

(1) One hundred micrograms per liter (100 µg/L);

(2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

(3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;

(4) The level established in Part A of the permit by the Director.

(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

6. Water Quality Standards

(a) Discharges to waters of the state shall not cause a violation of water quality standards rule 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. 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

C. SPECIAL CONDITIONS (continued)

(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 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.

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

- 8. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained in accordance with 10 CSR 20-8.020(13)(A)4. If operating records indicate, excessive percolation, the department may require a water balance test in accordance with 10 CSR 20-8.020(16) or other investigations to evaluate adequacy of the lagoon seal. The department may require corrective action as necessary to eliminate excess leakage.
- 9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report on **November 28** each year to the Southwest Regional Office which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
- 10. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

11. Wastewater Irrigation System

- (a) Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
- (b) Irrigation Design. Permittee shall operate the land application system in accordance with 10 CSR 20-8.020(15). Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:
 - (1) No-discharge System. When the Facility Description is "No-discharge", wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.
- (c) Lagoon Operating Levels – No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot (1') below the overflow point except due to any exceedance of the 1-in-10 year or 25-year-24-hour rainfall events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30th.
- (d) Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot (1') below the top of berm. The department may waive the requirement for overflow structures on small existing basins.
- (e) General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.

C. SPECIAL CONDITIONS (continued)

- (f) Saturated / Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions. There shall be no irrigation on days when more than 0.2 inches of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.
- (g) Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwellings; or 50 feet of the property line.
- (h) Public Access Restrictions. Public access shall not be allowed to the irrigation site(s). Fencing and public access restrictions to land application sites shall be in accordance with requirements in 10 CSR 20-8.020(15)(B)(5).
- (i) Equipment Checks During Irrigation. The irrigation system and application site shall be visually inspected at least once per day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.
- (j) Operation and Maintenance Manual. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to the departments' Water Pollution Control Program and the appropriate Regional Office for review and approval. The O&M Manual shall be reviewed and updated at least every five years.
- (k) Nitrogen Loading Rates. Wastewater irrigation rates shall not exceed a nitrogen application rate of 150 pounds total nitrogen per acre per year. The calculation procedures are as follows: $(\text{Total N}) \times (0.226) \times (\text{inches per acre irrigated}) = \text{pounds total N per acre}$. Where $\text{Total N} = [\text{Total Kjeldahl Nitrogen (TKN) as N}] + [\text{Nitrate Nitrogen as N}]$. If the applied wastewater exceeds 150 pounds total nitrogen per acre/year or if the applied wastewater exceeds ten (10) mg/L of nitrate nitrogen as N, the permittee must reduce the application rates or submit a revised permit application to request use of the Plant Available Nitrogen (PAN) method based on crop nitrogen requirements for harvested crops. PAN availability factors for surface application are: $[\text{Ammonia N} \times 0.6] + [\text{Nitrate N} \times 0.9] + [\text{Organic N} \times 0.6] = \text{PAN}$.

12. Nutrient Management

- (a) Nitrogen. The permittee shall not exceed the plant available nitrogen management approach as listed in this permit.
- (b) Phosphorus. When soil test phosphorus (P) levels are above 120 pounds per acres using Bray P-1 test method, the sludge application rate shall not exceed the annual crop requirements for available phosphorus in accordance with state NRCS guidelines. When state NRCS standards and guidelines become available, the permit will be revised to include the Phosphorus Threshold and Phosphorus Index methods to be developed under the USDA, NRCS National Policy, General Manual, Part 402.06.
- (c) The actual application rates for a given year or growing season must be adjusted based on the approved management approach and the actual sludge and soil testing results and crop requirement. If crop yields are less than that predicted in the permit application, the application rates must be reduced or the yields increased through appropriate changes in management practice.
- (d) This permit will be modified to require a Nutrient Management Plan (NMP) after promulgation of applicable state, EPA and USDA rules and guidelines. The NMP will replace the current PAN and phosphorus methods.

**Missouri Department of Natural Resources
Statement of Basis
Village of Freistatt
MSOP #: MO-0109274
Lawrence County**

A Statement of Basis (Statement) gives pertinent information regarding the applicable regulations and rationale for the development of the NPDES Missouri State Operating Permit (operating permit). This Statement includes Wasteload Allocations, Water Quality Based Effluent Limitations, and Reasonable Potential Analysis calculations as well as any other calculations that effect the effluent limitations of this operating permit. This Statement does not pertain to operating permits that include sewage sludge land application plans and variance procedures, and does not include the public comment process for this operating permit.

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

Part I – Facility Information

Facility Type: POTW
Facility SIC Code(s): 4952

Facility Description: Single cell lagoon / spray irrigation / sludge retained in lagoon.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.0362	Primary	Domestic Reissuance	6.9

Receiving Water Body’s Water Quality & Facility Performance History:

A Notice of Violation was issued on January 20, 2010 for a bypass that caused pollution of waters of the state.

This is for a renewal and modification of the design flow from 234,000 gallons per day to 23,400 gallons per day because of a typographical error.

Comments: The facility was last inspected on October 06, 2005. The conditions of the facility at the time of inspection were found to be satisfactory.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees 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 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Population Equivalent greater than two hundred (200):
- Fifty (50) or more service connections:

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County
 - Public Water Supply Districts:

- Private sewer company regulated by the Public Service Commission:
- State or Federal agencies:

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

Operator's Name: Charles E. Stearns
 Certification Number: 4550
 Certification Level: C

Part III – Receiving Stream Information

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 list 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)]:
- Lossing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

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(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed Tributary to Spring River	U	N/A	General Criteria	11070207	Ozark/Neosho
Spring River	P	03164	IRR, LWW, AQL, CDF, WBC-A, SCR, IND		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND).

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed Tributary to Spring River	0	0	0

MIXING CONSIDERATIONS

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

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

Part IV – 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.

Not Applicable ;

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(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(8)(A)10.], when a Continuing Authority under paragraph 10 CSR 20-6.010(3)(B)1. or 2. is expected to be available for connection within the next five (5) years, any operating permit issued to a permittee under this paragraph, located within the service area of the paragraph (3)(B)1. or 2. facility, shall contain the following special condition... This language is contained in Special Condition #3 of this operating permit.

ANTIDegradation:

Policies which ensure protection of water quality for a particular water body where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as outstanding natural resource waters. Antidegradation requirements are consistent with 40 CFR 131.12 that outlines methods used to assess activities that may impact the integrity of a water and protect existing uses. This policy may compel the state to maintain a level of water quality above those mandated by criteria.

Not Applicable ;

Renewal no degradation proposed and no further review necessary.

APPLICABLE PERMIT PARAMETERS:

Effluent parameters for conventional, non-conventional, and toxic pollutants have been obtained from the previous NPDES operating permit for this facility, technology based effluent limits, and from appropriate sections of the renewal application.

COMPLIANCE AND ENFORCEMENT:

Action taken by the department to resolve violations of the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

Applicable ;

The permittee/facility is currently under enforcement action due to a dry weather bypass at a manhole.

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)].

Not Applicable ;

At this time, the permittee is not required to implement and enforce a Pretreatment Program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Limitations must control all pollutants or pollutant parameters that are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above the Missouri Water Quality Standards.

Not Applicable ;

A RPA was not conducted for this facility.

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 (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs). Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

Not Applicable ;

This facility is designed as a No Discharge Facility.

SANITARY SEWER OVERFLOWS (SSOs), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:

Sanitary Sewer Systems (SSSs) are municipal wastewater collection systems that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSOs is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

Applicable ;

In accordance with 40 CFR Part 122.41(e), the permittee is required to develop and/or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance. In addition, the department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

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). The CMOM identifies some of the criteria used by the EPA 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):

A schedule of remedial measures included in a permit, including 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.

Not Applicable ;

This permit does not contain a SOC.

STORM WATER 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 storm water 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 *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* [EPA 832-R-92-006] (Storm Water Management), 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 Storm Water 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 storm water discharges.

Not Applicable ;

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

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 to total amount of pollutant that may be discharged into that stream without endangering its water quality.

Not Applicable ;

WLA MODELING:

Not Applicable ;

A WLA study was either not submitted or determined not applicable by department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], 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:

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.

Not Applicable ;

This facility is designed as a No Discharge Facility.

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

Applicable ;

Spring River is listed on the 2004 / 2006 Missouri 303(d) List for Bacteria.

– This facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s). However it is a no discharge facility therefore there should be no affect to the stream.

Adjusted Design Flow:

10 CSR 20-6.011(1)(B)1. provides for an Adjusted Design Flow when calculating permit fees on human sewage treatment facilities. If the average flow is sixty percent (60%) or less than the system’s design flow, the average flow may be substituted for the design flow when calculating the permit fee on human sewage treatment facilities. If the facility’s actual average flow is consistently 60% or less than the permitted design flow, the facility may qualify for a reduction in your fee when:

- The facility has a valid permit, or has applied for re-issuance, is in compliance with the terms, conditions and effluent limitations of the permit, and the facility has a good compliance history; and
- Flow is not expected to exceed 60% of design flow for the remaining term of the existing operating permit.

Not Applicable ;

Municipalities, POTWs, and Industrials do not qualify for Adjusted Design flows.

Outfall #001 – Storage Basin

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
LAGOON FREEBOARD	FEET	1	*	--	*	NO	SAME
RAINFALL	INCHES	1	*	--	*	NO	SAME
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring Only
N/A - Not applicable

Outfall #002 Land Application

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
IRRIGATION PERIOD	HOURS	1	*	--	--	No	*
VOLUME IRRIGATED	GALLONS	1	*	--	--	No	*
APPLICATION AREA	ACRES	1	*	--	--	No	*
APPLICATION RATE	INCHES/ACRE	1	*	--	--	No	*
pH – UNITS	SU	1	*	--	--	No	*
TOTAL KJELDAHL NITROGEN AS N	MG/L	1	*	--	--	No	*
NITRATE / NITRITE AS N	MG/L	1	*	--	--	No	*
AMMONIA NITROGEN AS N	MG/L	1	*	--	--	No	*
TOTAL PHOSPHORUS A P	MG/L	1	*	--	--	No	*
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring Only

Groundwater Monitoring Wells (MW1 & MW2)

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
GROUNDWATER DEPTH	FEET	1	*	--	--	No	*
NITRATE / NITRITE	MG/L	1	10	--	--	No	SAME
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring Only

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | |

DERIVATION AND DISCUSSION OF LIMITS:

OUTFALL #001

All parameters for this outfall are monitoring requirements only with the exception of pH.

- **Minimum Sampling and Reporting Frequency Requirements #001:** Permittee shall notify the Southwest Regional Office immediately when a discharge begins and when the discharge ceases.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
LAGOON FREEBOARD	MONTHLY	QUARTERLY
RAINFALL	DAILY	QUARTERLY

OUTFALL #002

All parameters for this outfall are monitoring requirements only

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
IRRIGATION PERIOD	DAILY	QUARTERLY
VOLUME IRRIGATED	DAILY	QUARTERLY
APPLICATION AREA	DAILY	QUARTERLY
APPLICATION RATE	DAILY	QUARTERLY
pH – UNITS	QUARTERLY	QUARTERLY
TOTAL KJELDAHL NITROGEN AS N	QUARTERLY	QUARTERLY
NITRATE / NITRITE AS N	QUARTERLY	QUARTERLY
AMMONIA NITROGEN AS N	QUARTERLY	QUARTERLY
TOTAL PHOSPHORUS AS P	QUARTERLY	QUARTERLY

MONITORING WELLS #001 AND #002

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
GROUNDWATER DEPTH	MONTHLY	QUARTERLY
NITRATE / NITRITE	MONTHLY	QUARTERLY

Land application and Irrigation

The land application Operational Monitoring and the Monitoring Tests for the Irrigated Wastewater are standard for all land application permits. The Irrigated Wastewater monitoring is necessary to determine Phosphorus and Nitrogen loading for the plants.

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.

Date of Factsheet:

Mr. Joshua L. Grosvenor, EI
WP Engineering Unit
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Appendix A

10 CSR 20-9.020

All wastewater treatment systems serving a population equivalent greater than two hundred (200) or with fifty (50) or more service connections, owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and the state or federal agencies.

Column A			Column B		
Item	Points Possible	Points Assigned	Item	Points Possible	Points Assigned
Maximum population equivalent (P.E.) served, peak day	1 pt. Per 10,000 PE or major fraction thereof		EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY		
Design flow (avg. day) or peak month's flow, (avg. day) whichever is larger	Maximum: 10 Points 1 pt. Per MGD or major fraction thereof		Missouri or Mississippi River	0	
REQUIRED LABORATORY CONTROL Performed by plant personnel (highest level only)			All other stream discharges except to losing streams and stream reaches supporting whole body contact reaction	1	
Lab work done outside the plant	0		Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Push – button or visual methods for simple tests such as pH, settleable solids	3		Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
			HEADWORKS - PRELIMINARY TREATMENT		
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5	Raw wastes subject to toxic waste discharges	6	
			Screening and/or comminution	3	
			Grit removal	3	
More advanced determinations such as BOD seeding procedure, fecal coliform, nutrients, total oils, phenols, etc.	7		Plant pumping of main flow (If 51% or greater flow comes into plant)	3	
			PRIMARY TREATMENT		
			Primary clarifiers (Flow EQ basins)	5	
			Combined sedimentation/digestion (includes big septic tank or if cities clean out STEP system)	5	
			Chemical addition (except chlorine, enzymes)	4	
TOTAL Page 1 Column A		5	TOTAL Page 1 Column B		3

Column A				Column B		
Item		Points Possible	Points Assigned	Item	Points Possible	Points Assigned
Direct reuse or recycle of effluent		6		SECONDARY TREATMENT		
Land Disposal – Low rate (Irrigation) < 24” year		3		Trickling filter and other fixed film media with secondary clarifiers (recirculating sand filters)	10	
Land Disposal – High rate (Irrigation) > 24” year		5	5	Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	
Overland flow		4		Stabilization ponds without aeration	5	5
Variation in Raw Wastes (highest level only) (DMR exceedances & Design Flow exceedances)				Aerated lagoon (Lemna)	8	
Variations do not exceed those normally or typically expected		0		Advanced Waste Treatment Polishing pond (Lemna)	2	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow (use design flow for determination)		2		Chemical/physical – without secondary (carbon filters such as at Wilson’s Creek WWTF)	15	
Recurring deviations or excessive variations of more than 200 percent in strength and/or flow (use design flow for determination)		4		Chemical/physical – following secondary (adding alum if not at headworks, tertiary filters)	10	
SOLIDS HANDLING - SLUDGE				Biological or chemical biological (multi stage biological treatment, SBR and 3-phase biological treatment)	20	
Thickening (Lagoon sludge holding basin)		5		Carbon Regeneration	4	
Anaerobic digestion		10		DISINFECTION		
Aerobic digestion		6		Chlorination or comparable	5	
Evaporative sludge drying		2		Dechlorination	2	
Mechanical dewatering (belt thickeners)		8		On-site generation of disinfectant (ozone)	5	
Solids reduction (incineration, wet oxidation, composting)		12		Ultraviolet light	4	
Land application		6		TOTAL Page 2 Column B		5
TOTAL Page 2 Column A			5	TOTAL Page 2 Column B		
Grand Total			18	PREPARED BY:		
Level of Certification Required				Mr. Joshua L. Grosvenor, EI		
D	C	B	A	March 10, 2010		
≤ 25	26 – 50	51 – 70	≥ 71	(Date)		