

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, RSMo. as amended, hereinafter, the Law) and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No.: MO-G64XXXX

Owner: < name >  
Address: < address >

Continuing Authority: < name, or Same as above >  
Address: < address, or Same as above >

Facility Name: < name >  
Facility Address: < physical address >

Legal Description: ¼, ¼, ¼, Sec. xx, TxxN, RxxW, < county > County  
UTM Coordinates: X = , Y =

Receiving Stream: < receiving stream > < (C, P, L1, L2, L3) >  
First Classified Stream and ID: < 1<sup>st</sup> classified stream > <(C, P, etc.)> <(ID number)> 303(d) List  
USGS Basin and Sub-watershed No.: < (USGS HUC12 #) >

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

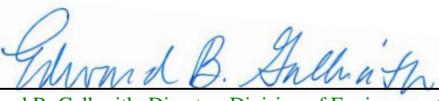
**FACILITY DESCRIPTION**

All Outfalls – SIC Code #4941

Process wastewater discharges associated with water treatment plant filter backwash water and solids. Allows operation of wastewater and sludge holding systems as well as land application of water treatment plant sludge.

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 §§ 621.250, 640.013, and 644.051.6, RSMo. 10 CSR 20-1.020 and 20-6.020.

February 25, 2019  
Effective Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

February 24, 2024  
Expiration Date

  
Chris Wieberg, Director, Water Protection Program

## APPLICABILITY

1. This permit authorizes water treatment plant discharges of filter backwash water and treated sludge blowdown to waters of the State of Missouri and authorizes operation of settling basins, holding basins, sludge lagoons, and land application sites for water treatment sludge and residuals. This permit does not apply to the discharge of any effluent other than filter backwash water and treated sludge blowdown.
2. This permit does not apply to discharges of backwash water from potable water supply softening units and zeolite filter backwash. Facilities wishing to discharge filter backwash from these treatment methods should apply for Missouri State Operating Permit MO-G641xxx, or a site specific permit, as appropriate. This permit is applicable to water softening and zeolite filter facilities that are land applying.
3. This permit does not apply to water treatment plants producing water for any purpose other than human consumption, e.g., water treatment plants producing water to be used in an industrial process.
4. Discharge of wastewater to the watersheds of a Metropolitan No-Discharge Stream (10 CSR 20-7.031 Table F) is prohibited under this permit. Existing interim discharges may be allowed until interceptors are available within 2,000 feet or a distance deemed feasible by the department, or unless construction of outfalls to alternative receiving waters not listed in Table F is deemed feasible by the department. This permit authorizes no-discharge facilities [as defined in 10 CSR 20-6.015(1)(B)7.] to operate in these watersheds.
5. This permit does not authorize discharges which are located in a way to allow water to be released into sinkholes, caves, fissures, or other openings in the ground which could drain into aquifers directly or indirectly (except losing streams) per 10 CSR 20-7.015(7).
6. For facilities which would discharge directly to Outstanding State Resource Waters and within the watersheds of Outstanding National Resource Waters (which includes the Ozark National Scenic Riverways and the National Wild and Scenic Rivers System):
  - (a) Outstanding State and National Resource Waters are protected against any degradation in quality as defined in 10 CSR 20-7.015(6) and 7.031(3)(C).
  - (b) This permit does not authorize discharge of wastewater directly into Outstanding State Resource Waters or into the watersheds of Outstanding National Resource Waters.
  - (c) This permit authorizes no-discharge facilities [as defined in 10 CSR 20-6.015(1)(B)7.] to operate in these watersheds.
  - (d) Any discharge from a no-discharge facility will be considered a violation of this permit unless a catastrophic or chronic storm event [as defined in 10 CSR 20-6.015(1)(B)2.-3.] occurs. In the event of a catastrophic or chronic storm event, the no-discharge facility is authorized to release only the amount of stormwater required to prevent damage to the facility or established Best Management Practices (BMPs).
7. Facilities located within the watershed of an impaired water as designated in the 305(b) Report must be evaluated on a case-by-case basis for inclusion under this permit. Missouri's impaired waters can be found at <https://dnr.mo.gov/env/wpp/waterquality/index.html>. Facilities found to be discharging the listed pollutant(s) of concern for any impaired water may be required to obtain a site-specific permit.
8. The Department may require any facility authorized by a general permit to apply for a site-specific permit [10 CSR 20-6.010(13)(C)]. Cases where a site-specific permit may be required include, but are not limited to, the following:
  - (a) The discharge(s) is a significant contributor of a pollutant(s) which impairs the beneficial uses of the receiving stream;
  - (b) The discharger is not in compliance with the conditions of the general permit;
  - (c) A Total Maximum Daily Load (TMDL) containing requirements applicable to the discharge(s) is approved.
9. If a facility covered under a current general permit desires to apply for a site-specific permit, the facility may do so by contacting the Department for application requirements and procedures.
10. Facilities covered under a current site-specific permit who desire to apply for inclusion under this general permit may contact the Department for application requirements and procedures.

## EXEMPTIONS

1. Facilities discharging wastewater to a publicly owned treatment works are exempt from permit requirements, if the following conditions are met:
  - (a) Discharge must be direct, via pipe or pump and haul;
  - (b) Consent from the publicly owned treatment works receiving the discharge is required; and
  - (c) Facilities land applying sludge are not exempted from permit requirements.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

TABLE A		<i>Filter Backwash and Treated Sludge Blowdown Discharge</i> FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The facility is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. These final effluent limitations shall be effective at issuance of the Master General Permit. All discharges shall be controlled, limited, and monitored by the facility as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS***	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	SAMPLING FREQUENCY	SAMPLE TYPE
<b>LIMIT SET: FW</b>						
<b>PHYSICAL</b>						
Flow	MGD	*		*	once/quarter ◇	24 hr. est.
<b>CONVENTIONAL</b>						
Chlorine, Total Residual †	µg/L	ML 130 †		ML 130 †	once/quarter ◇	grab
pH	SU	6.5-9.0		-	once/quarter ◇	grab
Settleable Solids	mL/L/hr	1.0		1.0	once/quarter ◇	grab
<b>NUTRIENTS</b>						
Phosphorus	mg/L	*		*	once/quarter ◇	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> VIA THE DEPARTMENT'S eDMR SYSTEM. THE FIRST REPORT IS DUE <u>MONTH 28, 20XX</u> . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

\* Monitoring requirement only.

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

\*\*\* Report as no-discharge when a discharge does not occur during the reporting period. If multiple samples are collected and analyzed during the sampling period, the multiple samples are not to be averaged at intervals exceeding one calendar month.

† This permit contains a Total Residual Chlorine (TRC) limit.

(a) The limitations for chlorine are determined based on aquatic habitat use designation. The Minimum Quantification Level (ML) is 130 µg/L for each aquatic habitat use designation.

**For warm water habitats (WWH) and cool water habitats (CLH):**

Daily maximum limit: 18 µg/L

Monthly average limit: 9 µg/L

**For cold water habitats (CDH):**

Daily maximum limit: 3 µg/L

Monthly average limit: 2 µg/L

(b) These effluent limits are below the ML of the most common and practical U.S. Environmental Protection Agency approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than the ML of 130 µg/L will be considered violations of the permit and values less than or equal to the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The ML does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

(c) Do not chemically dechlorinate if it is not needed to meet the limits in your permit.

◇ **Quarterly sampling**

MINIMUM QUARTERLY SAMPLING REQUIREMENTS			
QUARTER	MONTHS	QUARTERLY EFFLUENT PARAMETERS	REPORT IS DUE
First	January, February, March	Sample at least once during any month of the quarter	April 28 <sup>th</sup>
Second	April, May, June	Sample at least once during any month of the quarter	July 28 <sup>th</sup>
Third	July, August, September	Sample at least once during any month of the quarter	October 28 <sup>th</sup>
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 <sup>th</sup>

LAND APPLICATION MONITORING – SLUDGE

TABLE B		SLUDGE MONITORING FOR LAND APPLICATION				
The facility is authorized to conduct land application of water treatment sludge and residuals as specified in this permit. The land application of water treatment sludge and residuals shall be controlled, limited, and monitored by the facility as specified below:						
PARAMETERS	UNITS	FINAL LIMITATIONS			MONITORING REQUIREMENTS † †	
		Daily Maximum	WEEKLY AVERAGE	Monthly Average	Sampling Frequency	Sample Type
<b>LIMIT SET: LA</b>						
<b>CONVENTIONAL</b>						
pH **	SU	*		-	once/year	grab † †
<b>METALS</b>						
Aluminum	mg/kg	*		‡	once/year	grab † †
Arsenic	mg/kg	*		‡	once/year	grab † †
Cadmium	mg/kg	*		‡	once/year	grab † †
Chromium	mg/kg	*		‡	once/year	grab † †
Copper	mg/kg	*		‡	once/year	grab † †
Lead	mg/kg	*		‡	once/year	grab † †
Mercury	mg/kg	*		‡	once/year	grab † †
Molybdenum	mg/kg	*		‡	once/year	grab † †
Nickel	mg/kg	*		‡	once/year	grab † †
Selenium	mg/kg	*		‡	once/year	grab † †
Zinc	mg/kg	*		‡	once/year	grab † †
<b>NUTRIENTS</b>						
Total Kjeldahl Nitrogen (TKN)	mg/kg	*		‡	once/year	grab † †
Total Phosphorus as P	mg/kg	*		‡	once/year	grab † †
Total Sodium	mg/kg	*		‡	once/year	grab † †
Total Chloride as Cl	mg/kg	*		‡	once/year	grab † †
Effective Neutralizing Material (ENM) ◇◇	lbs/ton	*		‡	once/year	grab † †
<b>OTHER</b>						
Annual Report ◇◇◇	-	-		-	once/year	report ◇◇◇
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> VIA THE DEPARTMENT'S eDMR SYSTEM. THE FIRST REPORT IS DUE <u>MONTH 28, 20XX</u> . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

\* Monitoring requirement only.

\*\* Facility will report the maximum value. pH is not to be averaged.

‡ Monitor and report annually. If more than one sample is analyzed in the reporting period, obtain the monthly average for each particular month, and report the highest monthly average that occurred during the year.

◇◇ Sampled per MU Guide G9102 *Liming Missouri Soils* (<https://extension2.missouri.edu/g9102>) and G9107 *MO Limestone Quality: What is ENM?* (<https://extension2.missouri.edu/g9107>) published by the University of Missouri Extension Service. In eDMR this parameter will be listed as “Total Production, Mass”.

◇◇◇ Annual Report for land application operation and maintenance, see LAND APPLICATION REQUIREMENTS #12 below.

† † Sludge that is land applied shall be sampled at the storage basin or application equipment prior to land application

LAND APPLICATION MONITORING, SOIL

TABLE C		SOIL MONITORING FOR LAND APPLICATION				
The facility is authorized to conduct land application of water treatment sludge and residuals as specified in this permit. The land application of water treatment sludge and residuals shall be controlled, limited, and monitored by the facility as specified below:						
PARAMETERS	UNITS	FINAL LIMITATIONS			MONITORING REQUIREMENTS † †	
		Daily Maximum	Weekly Average	Monthly Average	Sampling Frequency	Sample Type
<b>LIMIT SET: SM</b>						
<b>CONVENTIONAL</b>						
pH † † †	SU	***		-	once/five years	grab † †
<b>METALS</b>						
Aluminum	mg/kg	*		‡	once/five years	grab † †
Arsenic	mg/kg	*		‡	once/five years	grab † †
Cadmium	mg/kg	*		‡	once/five years	grab † †
Chromium	mg/kg	*		‡	once/five years	grab † †
Copper	mg/kg	*		‡	once/five years	grab † †
Lead	mg/kg	*		‡	once/five years	grab † †
Mercury	mg/kg	*		‡	once/five years	grab † †
Molybdenum	mg/kg	*		‡	once/five years	grab † †
Nickel	mg/kg	*		‡	once/five years	grab † †
Selenium	mg/kg	*		‡	once/five years	grab † †
Zinc	mg/kg	*		‡	once/five years	grab † †
<b>NUTRIENTS</b>						
Total Kjeldahl Nitrogen (TKN)	mg/kg	*		‡	once/five years	grab † †
Total Phosphorus as P	mg/kg	*		‡	once/five years	grab † †
Total Sodium as Na	mg/kg	*		‡	once/five years	grab † †
Total Chloride as Cl	mg/kg	*		‡	once/five years	grab † †
MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE EVERY FIVE YEARS</u> VIA THE DEPARTMENT'S eDMR SYSTEM. THE FIRST REPORT IS DUE <u>MONTH 28, 20XX</u> . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

\* Monitoring requirement only.

‡ If more than one sample is analyzed in the reporting period, obtain the monthly average for each particular month, and report the highest monthly average that occurred during the year.

‡ † Sample the upper 6 to 8 inches of soil.

- A sample must be taken at each land application field once every five years. Standard Conditions Part III authorizes land application sites within a 20 mile radius of the treatment facility. Each field within a 20 mile radius does not need to be an individual permitted feature; however, a sample must still be taken at each field once every five years. In those instances, one sample shall be entered into the eDMR system with additional sample results reported as attachments to the submitted eDMR data. The additional sample results must include the address, legal description, or GPS coordinates for each field reported. In addition, fields larger than 80 acres must obtain one sample for each 80 acres, as detailed below. If a field is outside the 20 mile radius, it must be a separate permitted feature.
- Samples shall be collected from each permitted land application field less than or equal to 80 acres.
- If the field is larger than 80 acres, it shall still be considered one permitted feature, but there shall be one sample per each 80 acres. In those instances, one sample shall be entered into the eDMR system with additional sample results reported as attachments to the submitted eDMR data.

‡ † † Sample shall be tested using a salt based test. Soil pH shall be maintained in a range that is optimal for plant growth.

## LAND APPLICATION REQUIREMENTS

1. Soil testing shall be conducted at least once every five (5) years on each field where land application of water treatment plant sludge has occurred in the last 12 months (See Table C above for specific soil testing requirements). No land application shall occur on fields listed in this permit if soil sample results are more the five (5) years old. If land application is to occur for the first time on a field, soil testing must be conducted before land application may begin. If no land application is planned within the next five (5) years, no soil testing is required.
2. Soil sampling shall be in accordance with the MU Guides G9215 *Soil Sampling Pastures* (<https://extension2.missouri.edu/g9215>) and G9217 *Soil Sampling Hayfields and Row Crops* (<https://extension2.missouri.edu/g9217>) published by the University of Missouri Extension Service. Analytical testing shall conform to Recommended Chemical Soil Testing Procedures for North Central Region (*North Central Regional Research Publication 221 Revised*, <https://extension2.missouri.edu/sb1001>), or Soil Testing in Missouri (*MU Extension Guide EC923*, <https://extension2.missouri.edu/ec923>), or other methods approved by the department.
3. Land application of sludge also shall not exceed the most restrictive of the following criteria:
  - (a) Effective Neutralizing Material (ENM) amount to raise soil pH per soil test recommendations for crop needs.
  - (b) Metal limitations in Standard Conditions Part III, Tables 3 & 4.
  - (c) Pesticide amounts not to exceed 10 percent of the application rate on the pesticide label.
  - (d) Lime sludge shall not be land applied if the soil pH exceeds pH 7.5 (salt based test) or pH 8.0 (water based test).
4. Land application:
  - (a) Shall not result in a discharge from any land application fields;
  - (b) Shall not occur during frozen, snow covered, or saturated soil conditions; during a precipitation event; or if a precipitation event likely to create runoff is forecasted to occur within 24 hours of a planned application;
  - (c) Shall occur only during daylight hours, unless staff is present to monitor the irrigation system during irrigation periods. If an automated system is in place to send notification of equipment malfunctions, staff is not required to be present;
  - (d) Shall not cause surface ponding or runoff of sludge from the application site during land application; and
  - (e) Shall not occur within:
    - (1) 50 feet of the property line or public road;
    - (2) 100 feet of wetlands, gaining streams, or tributaries;
    - (3) 150 feet of an occupied residence, public building, or public use area;
    - (4) 300 feet up gradient of a public or privately owned drinking water impoundment or intake, or water supply well; and
    - (5) 300 feet of a sinkhole, losing stream, or other direct conduit to groundwater.
5. Land application of sludge containing aluminum additives (alum sludge, lime/alum sludge, etc.) shall meet the following additional requirements:
  - (a) Land application sites shall be maintained at a soil pH between 5.5 SU and 7.5 SU, for the salt based pH test; or 6.0 SU to 8.0 SU for the water based test.
  - (b) Land application of sludge shall not exceed cumulative aluminum loadings of 4,000 pounds aluminum per acre above soil background levels. Background soil levels of aluminum shall be based on soil testing of the site prior to sludge application or testing of similar soils in the immediate vicinity.
  - (c) If sludge application rates do not exceed 2 dry tons per acre per year, and if the sludge contains less than 4,000 ppm total aluminum on a dry weight basis, permittees are not required to retain records of cumulative aluminum loading.
  - (d) Sludge containing equal to or more than 4,000 ppm total aluminum on a dry weight basis may be applied to land with established vegetation, or to land without established vegetation but with less than a 5% slope, or shall be incorporated into the ground by discing, plowing, or equivalent methods within two weeks after land application, or prior to a known precipitation event, whichever is sooner. Under no circumstances shall land application result in sludge entering waters of the state.
6. The land application system shall be operated so as to provide uniform distribution over the entire application site.
7. The Department may require the submittal of a site-specific sludge management plan where deemed appropriate to protect the environment.
8. Per Standard Conditions Part III, slope limitations for sludge application sites are as follows:
  - (a) Slopes of 6 percent or less, there are no limitations.
  - (b) Slopes of 7 to 12 percent, sludge may be applied with no limitation when soil conservation practices are used to meet the minimum erosion levels.
  - (c) Slopes greater than 12 percent, apply sludge only when soil is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

9. The land application site and system shall be visually inspected at least daily during land application to check for runoff and equipment malfunctions. The inspection should focus on the perimeter of the application fields where runoff is likely to occur, to ensure the applied sludge does not run off the fields. If a discharge from any land application field is observed, sludge application shall cease until the cause is corrected, and noncompliance shall be reported to the Department, in accordance with Standard Conditions Part I. A log of inspections shall be kept on-site and made available to the Department upon request.
10. There shall be no land application of any pollutant in sufficient amounts to cause harm to the soil structure or productivity, or cause stress or toxicity to plant life.
11. Sludge and soil test results shall be retained by the permittee for at least five years.
12. Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28<sup>th</sup> of each year for the previous calendar year period, and shall be uploaded to the Department via the eDMR system. The summarized annual report shall include the following:
  - (a) Record of maintenance and repairs performed 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 any no-discharge storage basin(s) [as defined in 10 CSR 20-6.015(1)(B)7.] discharged during the year, the discharge flow, the reasons discharge occurred, and any effluent analysis performed;
  - (c) A summary of sludge disposal activities, including the amount of sludge generated, amount stored, amount disposed, and disposal method.
  - (d) If sludge is land applied: a summary of the land application operations including freeboard at the start and end of the year, the number of days of land application for each month, the total gallons land applied, the total acres used, crops grown, crop yields per acre, the application rate in inches/acre/day and a summary for the year, the monthly and annual precipitation received at the facility, and a summary of testing results for sludge;
  - (e) A summary of any problems or deficiencies encountered, corrective action taken, and improvements planned; and
  - (f) If soil testing is conducted during the reporting period, soil test results must be reported in the annual report.

#### STORAGE BASIN REQUIREMENTS

No-discharge Systems [as defined in 10 CSR 20-6.015(1)(B)7.] are required for facilities in Outstanding State and National Resource Water areas. These systems may include no-discharge holding basins. If a no-discharge holding basin is employed at a facility, the following requirements apply:

- (a) The minimum and maximum operating water levels for the storage basin shall be clearly marked. Each basin shall be operated so the maximum water elevation does not exceed two feet below the emergency spillway except due to exceedances of the catastrophic or chronic storm events [as defined in 10 CSR 20-6.015(1)(B)2.-3.] according to National Weather Service data. Design Storm Maps and Tables can be found at [http://ag3.agebb.missouri.edu/design\\_storm/](http://ag3.agebb.missouri.edu/design_storm/) or [http://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=mo](http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=mo). Process wastewater shall be land applied whenever feasible based on soil, weather conditions, and following all permit requirements. Storage basin(s) shall be lowered to the minimum operating level prior to each winter by November 30.
- (b) Earthen storage basins shall have an emergency spillway to protect the structural integrity in the event of overflow conditions. The spillway shall be at least one foot below top of berm. It is a violation of this permit to place material in the emergency spillway or otherwise cause it to cease to function properly, as this may result in a catastrophic failure of the storage basin.
- (c) Storage basin berms shall be mowed and kept free of any deep-rooted vegetation, muskrat dens, or other potential sources of damage to the berms.
- (d) Any unauthorized discharge from the storage basin shall be reported to the Department as soon as possible but always within 24 hours of the facility becoming aware of the discharge. Reports should be made to the appropriate Regional Office during normal business hours or to the Spill Hotline after hours and on weekends at 573-635-2436.
- (e) The facility shall ensure adequate provisions are established to prevent surface water intrusion into the storage basin(s); to divert stormwater runoff around the storage basin(s); and protect embankments from erosion.

#### PERMIT CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program. All general permit covered facilities under this master general permit shall comply with the Department's requirements for electronic reporting.
  - (a) Discharge Monitoring Reporting Requirements.
    - (1) Registration to participate in the Department's eDMR system is required as part of the application for general permit coverage in order to constitute a complete permit application and may be accessed at [dnr.mo.gov/env/wpp/edmr.htm](http://dnr.mo.gov/env/wpp/edmr.htm).

- (2) 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) 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);
    - (3) No Exposure Certifications (NOEs); and
    - (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs).
  - (c) 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>. If you experience difficulties with using the eDMR system you may contact [edmr@dnr.mo.gov](mailto:edmr@dnr.mo.gov) or call 855-789-3889 or 573-526-2082 for assistance.
  - (d) Waivers from Electronic Reporting.
    - (1) 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.
    - (2) The permittee may obtain a temporary or permanent electronic reporting waiver by first submitting an eDMR Waiver Request Form (Form 780-2692): <http://dnr.mo.gov/forms/780-2692-f.pdf>, by contacting the appropriate permitting office, or emailing [edmr@dnr.mo.gov](mailto:edmr@dnr.mo.gov). The Department will either approve or deny this electronic reporting waiver request within 120 calendar days of receipt.
    - (3) Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period the approved electronic reporting waiver is effective.
2. The discharge shall not contain floating solids or visible foam in other than trace amounts.
  3. Facilities shall manage materials (stockpiles, waste piles, etc.) to ensure these materials are not washed off-site or into a water of the state.
  4. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (Section 644.055, RSMo). The fees can be found at 10 CSR 20-6.011.
  5. Compliance with all requirements in this permit does not supersede nor remove liability for compliance with county and other local ordinances.
  6. The permittee shall at all times properly maintain and operate 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.
  7. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.
  8. This permit does not convey any property rights of any sort or any exclusive privilege.
  9. Outfalls must be:
    - (a) Clearly marked in the field. On classified waters the outfall signs must be clearly visible from land and water perspectives;
    - (b) Free of weeds, brush or obstructive vegetation;
    - (c) Above the normal high water mark of the waterbody to which it discharges; and
    - (d) Maintained so a sample of the discharge can be obtained at a point after the final treatment process and before the discharge mixes with receiving waters.
  10. The permittee shall furnish to the Department, within a reasonable time, any information which the Department requests to determine whether cause exists for modifying, revoking and reissuing, terminating this permit, or to determine if the permittee is in 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. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
    - (a) The alteration or addition could significantly change the nature or increase the quantity of pollutants. This notification applies to pollutants contained in this permit as well as new pollutants different from pollutants listed in this permit; or
    - (b) The alteration or addition results in a significant change in disposal practices and may justify the application of permit conditions different from or absent in the current permit.

12. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k). However, this permit may be reopened and modified or alternatively revoked and reissued to 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 contains different conditions or is otherwise more stringent than any effluent limitation in the permit or controls any pollutant not limited in the permit.
13. Changes in Discharges of Toxic Substances. In addition to the reporting requirements under 40 CFR 122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
  - (a) An activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if the 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;
    - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
    - (4) One milligram per liter (1 mg/L) for antimony;
    - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
    - (6) The notification level established by the Department in accordance with 40 CFR 122.44(f).
  - (b) An activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if the discharge will exceed the highest of the following “notification levels:”
    - (1) Five hundred micrograms per liter (500 µg/l);
    - (2) One milligram per liter (1 mg/l) for antimony;
    - (3) Ten (10) times the maximum concentration value reported for the pollutant in the permit application in accordance with §122.21(g)(7).
    - (4) The level established by the Director in accordance with §122.44(f).
14. Reporting of Non-Detects:
  - (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way 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 report the “Non-Detect” result using the less than sign and the minimum detection limit (e.g., <10).
  - (d) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
  - (e) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).

#### STANDARD CONDITIONS

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

#### PERMIT RENEWAL

1. The permittee shall submit an application for the renewal of this permit by submitting *Form E-Application for General Permit* <http://dnr.mo.gov/forms/780-0795-f.pdf> no later than thirty (30) days prior to the permit’s expiration date. If the facility wishes to terminate the permit, they must submit an application for termination of the permit; see the Permit Termination section below.
2. When a facility submits a timely and complete application in accordance with 10 CSR 20-6.010(5)(B) and (10)(E)1 as well as §644.051.10 RSMo 2015, and if the Department is unable through no fault of the permittee to issue a renewal prior to expiration of the previous permit, the terms and conditions of the expired permit are administratively continued and will remain fully effective and enforceable until such time when a permit action is taken. Failure to submit a renewal application for a facility still in operation is a violation of the Missouri Clean Water Law. Failure to apply for renewal of a permit may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.
3. As part of the complete application, and as required by the federal NPDES eReporting rule, participation in the Department’s Electronic Discharge Monitoring Report Submission System (eDMR) is required. Facilities already participating in eDMR need not re-apply upon renewal. More information can be found at: <http://dnr.mo.gov/env/wpp/edmr.htm>.

#### PERMIT TRANSFER

1. This permit may not be transferred to a new owner in any fashion except by submitting an *Application for Transfer of Operating Permit* <http://dnr.mo.gov/forms/780-1517-f.pdf> signed by the seller and buyer of the facility along with the appropriate modification fee. In some cases, revocation and reissuance may be necessary. Standard Conditions Part I, Subsection D.7 applies.
2. Facilities with transfers carried out without prior notice to the Department will be considered to be operating without a permit and may be assessed an administrative penalty.

#### PERMIT TERMINATION

1. The permittee shall apply for permit termination when activities covered by this permit have ceased and no significant materials as defined by 10 CSR 20-6.200(1)(C)27. remain on the property or if on the property are stored in such a way as to have no potential for pollution. Whenever a release or a potential for release from a permitted facility is permanently eliminated, the existing permit may be terminated. This permit is not automatically terminated at expiration.
2. Proper closure of any effluent storage structure is required prior to permit termination.
3. In order to terminate this permit, the permittee shall notify the Department's appropriate regional office by completing and submitting *Request for Termination of Operating Permit* <http://dnr.mo.gov/forms/780-1409-f.pdf>. The Department may require inspection of the premises prior to granting termination of a permit.

## Missouri Department of Natural Resources Fact Sheet MO-G64xxxx

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 of 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 CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (permit) are issued by the Missouri Department of Natural Resources (Department) under an approved program, operated in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)2., a Fact Sheet 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 permit. A Fact Sheet is not an enforceable part of a permit.

This Fact Sheet is for a:

- Major
- Minor
- Industrial Facility
- Variance
- Master General Permit
- Permit with widespread public interest

### **Part I – Facility Information**

Industry Type: Drinking Water Treatment Plants  
Industry SIC Code(s): 4941  
Industry Description: Process wastewater discharges associated with water treatment plant filter backwash water and solids. Also allows operation of no-discharge sludge holding systems and land application of water treatment plant sludge.

#### **CLARIFICATION:**

The previous permit required monitoring of sludge and soil at land application facilities. These monitoring conditions are continued in this permit; however, in this permit, the requirements are placed in Tables B and C to make requirements clear. Reporting these results through the eDMR system will be required.

Changes to this permit include:

- Updated language throughout the permit to current permit template language.
- Updated setbacks to conform to regulations and current permitting practice. (See PART III, Rationale and Derivation of Effluent Limitations and Permit Conditions, Setbacks)
- Clarified soil sampling guidance and application rates.
- Authorizes land application during daylight hours only, unless staff is present to monitor the irrigation system during irrigation periods. If an automated system is in place to send notification of equipment malfunctions, staff is not required to be present.
- Brings land application requirements in line with current permitting practices, including slope limitations, inspections, and plant toxicity protections.
- Adds storage basin requirements in line with current permitting practices for no-discharge systems and general maintenance.
- Adds eDMR system use requirements per 40 CFR Part 127.

## **Part II – Receiving Stream Information**

### **APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

Per Missouri Effluent Regulations (10 CSR 20-7.015), the waters of the state are divided into seven (7) categories. This permit applies to facilities discharging to the following water body categories:

- Missouri or Mississippi River [10 CSR 20-7.015(2)]
- Lakes or Reservoirs [10 CSR 20-7.015(3)]
- Losing Streams [10 CSR 20-7.015(4)]
- Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)] – No Discharge facilities only
- Special Streams [10 CSR 20-7.015(6)] – No Discharge facilities only
- Subsurface Waters [10 CSR 20-7.015(7)]
- All Other Waters [10 CSR 20-7.015(8)]

Missouri Water Quality Standards (10 CSR 20-7.031) 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 1<sup>st</sup> classified receiving stream's beneficial water uses shall be maintained in accordance with 10 CSR 20-7.031(4). The requirements established by this permit are intended to be protective of all streams falling within the categories of receiving water bodies indicated above. A general permit does not take into consideration site-specific conditions.

### **MIXING CONSIDERATIONS:**

This permit applies to receiving streams of varying low flow conditions. Therefore, the effluent limitations must be based on the smallest low flow streams considered, which includes waters without designated uses. As such, no mixing is allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)]. No Zone of Initial Dilution is allowed. [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

### **RECEIVING STREAM MONITORING REQUIREMENTS:**

There are no receiving water monitoring requirements recommended at this time.

## **Part III – Rationale and Derivation of Effluent Limitations & Permit Conditions**

### **305(b) REPORT, 303(d) LIST, & TOTAL MAXIMUM DAILY LOAD (TMDL):**

Section 305(b) of the Federal CWA requires each state identify waters 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, 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 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 which shall include the TMDL calculation. For facilities with an existing general permit before a TMDL is written on their receiving stream, the Department will evaluate the permit and may require any facility authorized by this general permit to apply for and obtain a site-specific operating permit. Requests for coverage of a new facility under this general permit will be evaluated on a case-by-case basis for facilities located within the watershed of an impaired water as designated on the 305(b) Report.

✓ Conditional: The Department will review all discharges to impaired waters on a case-by-case basis.

### **ANTI-BACKSLIDING:**

A provision in the Federal Regulations [CWA Section 303(d)(4); CWA Section 402(c); 40 CFR Part 122.44(I)] requires a reissued permit to be as stringent as the previous permit with some exceptions.

✓ Applicable: Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act and 40 CFR Part 122.44.

✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

- The previous permit special conditions contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality criteria in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4)(A) through (I) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined the discharges will not cause or

contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality. See General Criteria Considerations below.

- This permit was previously not applicable to discharges in outstanding national resource waters and their tributaries or outstanding state resource waters; however, this renewal clarifies no-discharge facilities may operate in these watersheds. Because the option is no-discharge, it is not believed this change will contribute to pollution in the receiving water bodies.
- The previous permit did not authorize discharge within two miles of biocriteria reference locations. This setback was removed as there is no regulation supporting special status for these locations.

**ANTIDegradation:**

Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as an Outstanding National Resource Water or Outstanding State Resource Water [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

- ✓ Not Applicable: Antidegradation reviews are performed at the time of construction of each facility to determine applicability of general permit.

**EFFLUENT LIMITATION GUIDELINE:**

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the U.S Environmental Protection Agency (USEPA) based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology-based limitations that must be met by the applicable facility at all times.

- ✓ Not Applicable: The industries covered by this general permit do not have an associated ELG.

**GENERAL CRITERIA CONSIDERATIONS:**

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants that have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation protecting the narrative criterion.

The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches the rule itself, under 10 CSR 20-7.031(4)).

In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri which are 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.

- (A) 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.
  - For all facilities, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing indicates putrescent wastewater would be discharged from a facility in this industry.
  - For all facilities, there is RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses because the nature of the industry and discharged effluent indicates unsightly or harmful bottom deposits may be discharged from the facility. This permit must protect for the most sensitive receiving water body type, and therefore limits on settleable solids are continued from the previous permit to continue protecting for this general criterion.
- (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
  - For all facilities, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing indicates oil will be present in sufficient amounts in the effluent from this industry to impair beneficial uses. Oil & grease are not a pollutant of concern for this industry.

- For all facilities, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses in effluent from this industry. Materials causing scum are not widely used by this industry, and no large floating debris is expected from the common treatment methods utilized by the water treatment process.
- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all facilities, there is no RP at this time for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses. This permit contains limits for settleable solids, which will also protect for this criterion.
  - For all facilities, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because no materials are used in the industrial process that are expected to have an offensive odor.
- (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
- The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants that could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.
- (E) There shall be no significant human health hazard from incidental contact with the water.
- This criterion is very similar to (D) above.
- (F) There shall be no acute toxicity to livestock or wildlife watering.
- It is the permit writer's opinion this criterion is the same as (D).
- (G) Waters shall be free from physical, chemical or hydrologic changes, which would impair the natural biological community.
- For all facilities, there is no RP for physical changes that would impair the natural biological community because nothing in the industrial process indicates physical changes that would impair the natural biological community.
  - For all facilities, there is no RP for hydrologic changes that would impair the natural biological community because nothing in the industrial process indicates hydrologic changes would impair the natural biological community.
  - It has been established any chemical changes are covered by the specific numeric effluent limitations established in the permit.
- (H) 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.
- There are no solid waste disposal activities or any operation which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

**MAJOR WATER USER:**

Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statutes Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). <https://dnr.mo.gov/pubs/pub2337.htm>

**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.

✓ Not Applicable: This facility is not required to have a certified operator.

**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)].

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,
- 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

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 which 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.

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

**PUBLIC NOTICE OF COVERAGE FOR AN INDIVIDUAL FACILITY:**

Public Notice of reissuance of coverage is not required unless the facility has been found to be in significant noncompliance [10 CSR 20-6.020(1)(C)4.]. The need for an individual public notification process shall be determined and identified in the permit [10 CSR 20-6.020(1)(C)5.].

- ✓ Not Applicable: Public Notice is not required for issuance of coverage under this permit to individual facilities for the first time.

**REASONABLE POTENTIAL ANALYSIS (RPA):**

Federal regulation 40 CFR Part 122.44(d)(1)(i) requires effluent limitations for all pollutants which are or may be discharged at a level which 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)(iii) if the permit writer determines any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the water quality standard, the permit must contain effluent limits for the pollutant.

- ✓ Conservative assumption: A traditional statistical Reasonable Potential Analysis has not been conducted for this master general permit; but instead the Department has made a reasonable potential determination based on sources of pollutants related to water quality standards. Activities performed by facilities covered under this master general permit were evaluated as to whether discharges have reasonable potential to cause or contribute to excursions of general criteria listed in 10 CSR 20-7.031(4). A reasonable potential to violate water quality standards is assumed for the pollutants of concern due to the nature of the activities carried out under this permit, resulting in the effluent limits contained in the permit.
- ✓ Permit writers use the Department's permit writer's manual (<http://dnr.mo.gov/env/wpp/permits/manual/permit-manual.htm>), the USEPA's permit writer's manual (<https://www.epa.gov/npdes/npdes-permit-writers-manual>), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding technology based effluent limitations, effluent limitation guidelines, and water quality standards. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the USEPA, research, and maintaining continuity of permits if necessary. For stormwater permits, the permit writer is required per 10 CSR 6.200(6)(B)2 to consider: A. application and other information supplied by the permittee; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs. Part V of this fact sheet provides specific decisions related to this permit.
- ✓ The permit writer reviewed industry materials, available DMR data, past inspections, and other available documents and research to evaluate general and narrative water quality reasonable potential for this permit. Per the permit writer's best professional judgment, based on available data and full and accurate disclosure on application materials, this industry demonstrates reasonable potential for excursions from the general or narrative water quality criteria. See Part IV: Effluent Limit Determinations below for specific parameter RP.

**SCHEDULE OF COMPLIANCE (SOC):**

Per § 644.051, 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. An 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 may include 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, an SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

- ✓ Not Applicable: This permit does not contain an SOC.

**SETBACKS:**

Setbacks are common elements of permits and are established to provide a margin of safety in order to protect the receiving water from accidents, spills, unusual events, etc.

Discharge Setbacks:

- Per 10 CSR 20-7.015(5) discharge to metropolitan no-discharge streams and their watersheds is prohibited; however, no-discharge facilities are authorized to operate in these watersheds. Existing interim discharges may be allowed until interceptors are available within 2,000 feet or a distance deems feasible by the department, or unless construction of outfalls to alternative receiving waters not listed in Table F is deemed feasible by the department.

- Per 10 CSR 20-7.015(7) discharge to sinkholes, caves, fissures, or other openings in the ground is prohibited.
- Per 10 CSR 20-7.015(6)(B) and 7.031(3)(C) Outstanding National and State Resource Waters are protected against any degradation in water quality. No discharge facilities are allowed to operate in these watersheds. These facilities are non-degrading, and this requirement is protective of the regulations. This master general permit would not adequately protect these waterbodies if discharges were allowed since it does not include a full, site-specific antidegradation review.
- Facilities located within the watershed of an impaired water as designated in the 305(b) report, including waterbodies on the 303(d) list and facilities with an applicable TMDL, will be evaluated on a case-by-case basis for inclusion under this permit. The Department will review application materials to determine whether pollutants of concern under the 305(b) listing are being discharged by the applicant. If the receiving waterbody is determined to be impaired by a pollutant being discharged from the facility, a site-specific permit may be required.

#### Land Application Setbacks:

- Per 10 CSR 20-8.020(15), land application shall not occur within:
  - 50 feet of the property line or public road;
  - 300 feet up gradient of a public or privately owned drinking water impoundment or intake, or water supply well;
  - 150 feet of an occupied residence, public building, or public use area; and
  - 300 feet of a sinkhole, losing stream, or other direct conduit to groundwater.
- No land application is authorized within 100 feet of wetlands, gaining streams, or tributaries; continued from the previous permit using best professional judgment. This setback is protective of the water quality of the streams through preventing possible runoff from the land application site from entering the receiving stream.

#### **SLUDGE – DOMESTIC BIOSOLIDS:**

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e., fertilizer). Sewage sludge is solid, semi-solid, 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 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: <http://extension.missouri.edu/main/DisplayCategory.aspx?C=74> (WQ422 through WQ449).

- ✓ Not Applicable: This permit does not authorize land application of biosolids. This permit authorizes land application of drinking water treatment plant sludge, not solid materials from the treatment of domestic wastewater treatment. See “Sludge – Industrial” below.

#### **SLUDGE – INDUSTRIAL:**

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

- ✓ Applicable: This permit authorizes the land application of industrial drinking water treatment plant sludge in accordance with Standard Conditions III.

#### **SPILL REPORTING:**

Any emergency involving a hazardous substance must be reported to the Department’s 24-hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply when the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <http://dnr.mo.gov/env/esp/spillbill.htm>.

Underground and above ground storage devices for petroleum products, vegetable oils and animal fats are subject to control under SPCC and are expected to be managed under those provisions. Substances regulated by federal law under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) which are transported, stored, or used for maintenance, cleaning or repair shall be managed according to the provisions of RCRA and CERCLA. These storage devices are not covered under this general permit because to do so would create a double jeopardy for the permitted facility. Permit requirements cover those fueling areas and storage devices that fall below the threshold of SPCC, RCRA and CERCLA regulations.

**VARIANCE:**

Per the Missouri Clean Water Law Section 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 Section 644.006 to 644.141 or any standard, rule, or regulation promulgated pursuant to Missouri Clean Water Law Section 644.006 to 644.141.

✓ Not Applicable: This permit is not drafted under premises of a petition for variance.

**WASTELOAD ALLOCATIONS (WLA) FOR LIMITATIONS:**

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 which may be discharged into the stream without endangering its water quality.

✓ Not Applicable: No mixing is allowed under general permits, so Water Quality Standards are used in place of Wasteload Allocations.

**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 include in each NPDES permit conditions to achieve water quality established under Section 303 of the CWA, including state narrative criteria for water quality.

**WHOLE EFFLUENT TOXICITY (WET) TEST:**

Per 10 CSR 20-7.031(1)(FF), a toxicity test conducted under specified laboratory conditions on specific indicator organism; and per 40 CFR 122.2, the aggregate toxic effect of an effluent measured directly by a toxicity 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 water.

✓ Not Applicable: At this time, permittees are not required to conduct a WET test.

**Part IV – Effluent Limitations Determination**

Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A). Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. 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. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

**FILTER BACKWASH AND TREATED SLUDGE BLOWDOWN DISCHARGE TABLE:**

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
<b>PHYSICAL</b>							
FLOW	MGD	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	24 HR. EST
<b>CONVENTIONAL</b>							
CHLORINE, TOTAL RESIDUAL	µg/L	ML 130***	ML 130***	SAME***	ONCE/QUARTER	ONCE/QUARTER	GRAB
pH **	SU	6.5-9.0	--	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SETTLABLE SOLIDS (SS)	mL/L/hr	1.0	1.0	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
<b>NUTRIENTS</b>							
PHOSPHORUS	mg/L	*	*	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB

\* Monitoring and reporting requirement only

\*\* Report the minimum and maximum pH values; pH is not to be averaged

\*\*\* See parameter description for details and explanation.

NEW Parameter is new to this permit renewal.

## DERIVATION AND DISCUSSION OF LIMITS:

### PHYSICAL:

#### 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. The facility will report the total flow in millions of gallons per day (MGD).

### CONVENTIONAL:

#### Chlorine, Total Residual (TRC)

This permit contains a Total Residual Chlorine (TRC) limit, which is continued from the previous permit. Chlorine is a pollutant of concern in drinking water treatment plant effluent, as many plants add chlorine for disinfection purposes. The limits have changed from the previous permit cycle. Limits for cold water habitats have become more stringent, as the previous permit erroneously excluded these habitats. The functional limits for all use designations remain the same; however, the Minimum Quantification Level (ML) has remained the same. The ML is 130 µg/L for all categories of use designation.

#### **For warm water habitats (WWH) and cool water habitats (CLH):**

Daily maximum limit: 18 µg/L

Monthly average limit: 9 µg/L

#### **For cold water habitats (CDH):**

Daily maximum limit: 5 µg/L

Monthly average limit: 3 µg/L

These effluent limits are below the ML of the most common and practical USEPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than the ML of 130 µg/L will be considered violations of the permit and values less than or equal to the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The ML does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. Do not chemically dechlorinate if it is not needed to meet the limits in your permit.

#### Warm Water Habitats (WWH) and Cool Water Habitats (CLH)

18 µg/L daily maximum and 9 µg/L monthly average; acute standard 19 µg/L, chronic standard 11 µg/L, warm-water Protection of Aquatic Life [10 CSR 20-7.031, Table A1].

Acute WLA: 19 µg/L

Chronic WLA: 11 µg/L

LTA<sub>a</sub>: 19 (0.321) = 6.099 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

LTA<sub>c</sub>: 11(0.527) = 5.797 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of LTA<sub>a</sub> or LTA<sub>c</sub>.

MDL: 5.797 (3.11) = 18.02 = 18 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

AML: 5.797 (1.55) = 8.985 = 9 µg/L [CV = 0.6, 95<sup>th</sup> Percentile, n = 4]

#### Cold Water Habitats (CDH)

3 µg/L daily maximum and 2 µg/L monthly average; chronic standard = 2 µg/L, cold-water Protection of Aquatic Life [10 CSR 20-7.031, Table A1].

Acute WLA: NA

Chronic WLA: 2 µg/L

LTA<sub>a</sub>: NA

LTA<sub>c</sub>: 2(0.527) = 1.054 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

MDL: 1.054 (3.11) = 3.28 = 3 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]

AML: 1.054 (1.55) = 1.63 = 2 µg/L [CV = 0.6, 95<sup>th</sup> Percentile, n = 4]

Limits were developed for this parameter using the *Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001, PB91-127415)*.

### pH

6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall, continued from the last permit.

**Settleable Solids (SS)**

Daily maximum limit of 1.0 mL/L/hr and a monthly average of 1.0 mL/L/hr, continued from the last permit. Solids are a known pollutant of concern in the effluent of this industry. There is no numeric water quality standard for SS; however, sediment discharges can negatively impact aquatic life. Increased settleable solids are known to interfere with multiple stages of the life cycle in many benthic organisms. For example, they can smother eggs and young or clog the crevasses benthic organisms use for habitat.

**NUTRIENTS:**

**Phosphorus**

Monitoring only. This is a new parameter to this permit, added per the permit writer’s best professional judgment. The EPA lists phosphorus as a pollutant of concern in the effluent of these facilities in the publication *Drinking Water Treatment Plant Residuals Management Technical Report* (2011). Many water treatment plants use phosphates to help reduce the risk of pipework corroding and prevent the deposit of limescale. Additionally, the plants use varied source waters, some of which may be high in phosphorus. The state of Missouri has implemented nutrient standards in the water quality standards for lakes and reservoirs. Many water treatment plants withdraw source water from lakes or reservoirs, and then discharge to the same watershed. To determine the amount of phosphorus in the effluent of facilities, monitoring has been added.

**SLUDGE MONITORING FOR LAND APPLICATION TABLE:**

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
CONVENTIONAL							
pH **	SU	*	--	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
METALS							
ALUMINUM	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
ARSENIC	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
CADMIUM	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
CHROMIUM	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
COPPER	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
LEAD	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
MERCURY	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
MOLYBDENUM	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
NICKEL	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
SELENIUM	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
ZINC	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
NUTRIENTS							
TOTAL KJELDAHL NITROGEN (TKN)	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
TOTAL PHOSPHORUS AS P	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
TOTAL SODIUM	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
TOTAL CHLORIDE AS CL	mg/kg	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
EFFECTIVE NEUTRALIZING MATERIAL (ENM)	lbs/ton	*	‡	SAME	ONCE/YEAR	ONCE/YEAR	GRAB † †
OTHER							
ANNUAL REPORT	-	-	-	SAME	-	ONCE/YEAR	REPORT

\* Monitoring only

\*\* Facility will report the maximum value. pH is not to be averaged.

‡ Monitor and report annually. If more than one sample is analyzed in the reporting period, obtain the monthly average for each particular month, and report the highest monthly average that occurred during the year.

† † Sludge that is land applied shall be sampled at the storage basin or application equipment prior to land application

**CONVENTIONAL:**

**pH**

Monitoring only, continued from the previous permit. Monitoring is to protect the receiving land application fields. Monitoring for pH is included to determine loading rates on the land application fields. Soil monitoring will ensure that soils pH is in the optimal range for plant growth and nutrient uptake.

**METALS:**

**Aluminum, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Zinc**

Monitoring only, continued from the previous permit. Monitoring is to protect the receiving land application fields. Monitoring for metals are included to determine loading rates on the land application fields, as these metals are pollutants of concern in the wastewater and sludge of this industry. Soil monitoring will ensure metals are in the optimal range for plant growth and nutrient uptake.

**NUTRIENTS:**

**Total Kjeldahl Nitrogen (TKN), Total Phosphorus as P**

Monitoring only, continued from the previous permit. Monitoring is to protect the receiving land application fields. Monitoring for TKN and phosphorus is included to determine loading rates on the land application fields. Soil monitoring will ensure nutrients are in the optimal range for plant growth and nutrient uptake.

**Total Sodium, Total Chloride as Cl**

Monitoring only, continued from the previous permit. Increased salts in soils can cause plant growth problems, including making it difficult for plants to uptake or retain water. Soils generally do not need added salts for plant growth, so adding too much salt may cause negative effects. Monitoring ensures the amount of salt added to soil is not detrimental to crops. Salts are a pollutant of concern in filter backwash due to additives during the water treatment process. Additionally, this permit authorizes land application of zeolite and water softener sludge; sodium and chloride are pollutants of concern in this sludge.

**Effective Neutralizing Material (ENM)**

Monitoring for ENM is required only for lime sludge. The monitoring requirement is continued from the previous permit. ENM is an important measure of the sludge or wastewater's ability to neutralize soil acidity. ENM per ton of liming material is calculated using the calcium carbonate equivalent (CCE) and particle size efficiency ratings. For any agricultural liming material, ENM is determined by this equation:

$$\text{ENM} = \text{CCE} \times \text{fineness factor} \times 800$$

The 800 is a constant that refers to the pounds of effective calcium in one ton of pure lime.

The neutralizing needs of each land application field can be determined, then the correct ENM can be added to neutralize the soils. To determine the needed ENM, the ENM required by the soil is divided by the ENM of the added agricultural liming material, with the result being the tons of liming material required per acre. Benefits from liming come from increasing the soil pH to a crop's most favorable range for growth. Applying greater than the required ENM can lead to fertility issues in the soil or runoff of applied materials in stormwater.

**OTHER:**

**Annual Report**

Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28<sup>th</sup> of each year for the previous calendar year period, and shall be uploaded to the Department via the eDMR system. The summarized annual report shall include the following:

- (g) Record of maintenance and repairs performed 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;
- (h) The number of days any no-discharge storage basin(s) have discharged during the year, the discharge flow, the reasons discharge occurred, and effluent analysis performed;
- (i) A summary of sludge disposal activities, including the amount of sludge generated, amount stored, amount disposed and disposal method.
- (j) If sludge is land applied: a summary of the land application operations including freeboard at the start and end of the year, the number of days of land application for each month, the total gallons land applied, the total acres used, crops grown, crop yields per acre, the application rate in inches/acre/ day and for the year, the monthly and annual precipitation received at the facility, and a summary of testing results for sludge;
- (k) A summary of any problems or deficiencies encountered, corrective action taken, and improvements planned; and
- (l) If soil testing is conducted during the reporting period, soil test results must be reported in the annual report.

**SOIL MONITORING FOR LAND APPLICATION TABLE:**

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
CONVENTIONAL							
pH (SALT) †	SU	*	--	NEW	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
METALS							
ALUMINUM	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
ARSENIC	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
CADMIUM	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
CHROMIUM	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
COPPER	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
LEAD	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
MERCURY	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
MOLYBDENUM	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
NICKEL	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
SELENIUM	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
ZINC	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
NUTRIENTS							
TOTAL KJELDAHL NITROGEN (TKN)	mg/kg	*	***	SAME	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
TOTAL PHOSPHORUS AS P	mg/kg	*	***	NEW	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
TOTAL SODIUM	mg/kg	*	***	NEW	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**
TOTAL CHLORIDE AS CL	mg/kg	*	***	NEW	ONCE/FIVE YEARS	ONCE/FIVE YEARS	GRAB**

\* Monitoring only

\*\* Sludge that is land applied shall be sampled at the storage basin or application equipment prior to land application

\*\*\* Monitor and report annually. If more than one sample is analyzed in the reporting period, obtain the monthly average for each particular month, and report the highest monthly average that occurred during the year.

† Soil pH shall be maintained in a range that is optimal for plant growth.

NEW Parameter not in previous permit.

**CONVENTIONAL:**

**pH (Salt)**

Monitoring only, added per the permit writer's best professional judgment. Monitoring is added to protect the receiving land application fields. Soil acidity begins to affect most crops negatively when the salt pH is below 5.5 SU. This permit requires soil pH be maintained in a range that is optimal for plant growth. The optimal range for most plants is 5.5 to 7.0 SU using the salt-based method, but some plants/crops may require more or less acidity than this range.

**METALS:**

**Aluminum, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Zinc**

Monitoring only, continued from the previous permit. Monitoring is to protect the receiving land application fields. Monitoring for metals are included to determine the amount of metals found in the soils of land application fields, as these metals are pollutants of concern in the wastewater and sludge of this industry. Soil monitoring will ensure metals are in the optimal range for plant growth and nutrient uptake.

**NUTRIENTS:**

**Total Kjeldahl Nitrogen (TKN), Total Phosphorus as P**

TKN: Monitoring only, continued from the previous permit.

P: monitoring only, new to this permit per the permit writer's best professional judgment.

Monitoring is to protect the receiving land application fields. Monitoring for TKN and phosphorus is included to determine the amount of TKN and phosphorus in the soils of the land application fields. Soil monitoring will ensure nutrients are in the optimal range for plant growth and nutrient uptake.

### **Total Sodium, Total Chloride as Cl**

Monitoring only, new to this permit, added per permit writer's best professional judgment. Increased salts in soils can cause plant growth problems, including making it difficult for plants to uptake or retain water. Soils generally do not need added salts for plant growth, so adding too much salt may cause negative effects. Monitoring ensures the amount of salt added to soil is not detrimental to crops. Additionally, this permit authorizes land application of water softening and zeolite filter backwash. These sources are known to contain salts.

### **LAND APPLICATION AND MONITORING REQUIREMENTS**

Land application, soil monitoring, and sludge monitoring shall occur following Standard Conditions Part III (2015) as well as University of Missouri (MU) extension documents. These documents establish agronomic rates, metals limitations, slope limitations, and sampling procedures protective of the soils in land application fields. Proper adherence to these documents ensures optimal plant growth and prevents the over application of sludge or wastewater. This permit adds language requiring adherence to certain sampling procedures, slope limitations, and the agronomic application rate; however, it is the best professional judgment of the permit writer these were already requirements in the previous permit. The previous permit required following the same guidance documents, which explicitly detail sampling procedures and adherence to agronomic rates. This permit also requires the analytical procedures used by laboratories follow guidance. This ensures testing procedures are appropriate to the sample type and uniform results across permitted facilities.

This permit has added the requirement that wastewater only be applied during daylight hours. This is common in current land application permits issued by the Department, and ensures the application areas are visible. Visibility is required to ensure no runoff from the land application fields occurs. This permit also requires a daily visual inspection of the land application site and system to check for runoff and equipment malfunctions. This requirement is common in current land application permits and is protective of waterbodies near the land application areas. Failures of equipment can lead to runoff and contamination of receiving waterbodies.

### **STORAGE BASIN REQUIREMENTS**

Storage basin requirements are added to this permit per the best professional judgment of the permit writer. They add the requirement that basins for No-discharge Systems be operated so the maximum water elevation does not exceed two feet below the Emergency Spillway except during exceedances of the chronic or catastrophic storm events, as defined in 10 CSR 20-6.015(1)(B). This is to ensure the facility does not discharge except during catastrophic or chronic storm events, as required by the permit. Design Storm Maps and Tables can be found at [http://ag3.agebb.missouri.edu/design\\_storm/](http://ag3.agebb.missouri.edu/design_storm/) or [http://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=mo](http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=mo) if rainfall exceeds the 10-year 365-day rainfall event (chronic) or the 25-year 24-hour rainfall event (catastrophic) according to National Weather Service data.

This section also requires earthen basins have an emergency spillway to protect the structural integrity of the basin. This requirement is added per best professional judgment of the permit writer, and follows 10 CSR 20-8.300(6), which applies to earthen basins. Spillways ensure a sampling location and preserve the berms in the event of an overflow. Other conditions were also added to this permit that protect the integrity of the berms, including mowing and the prevention of tree growth and animal damage.

## **Part V– Sampling and Reporting Requirements**

### **SAMPLING FREQUENCY:**

Sampling frequency is established in accordance with Department policy. Effluent limitations are expressed in a daily maximum and a monthly average. Quarterly monitoring is required on discharged effluent. Results from samples may be submitted as both the daily maximum and the monthly average. If the facility collects multiple samples during any month, the permit requires the facility to submit a monthly average. If no discharges occur during a sampling period, report as "no discharge."

Annual monitoring is required on land applied sludge. Soil monitoring is required at least once every five years on each land application field.

### **SAMPLING TYPE JUSTIFICATION:**

Sampling type was continued from the previous permit. The sampling types are representative of the discharges and protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others.

**SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:**

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 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 the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations 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 the method

- 1) quantifies the pollutant below the level of the applicable water quality criterion,
- 2) minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or
- 3) has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and/or 40 CFR 136.

These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Tables A1-B3 at 10 CSR 20-7.031 shows water quality standards.

**Part VI – Administrative Requirements**

On the basis of preliminary staff review and 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 permit. The proposed determinations are tentative pending public comment.

**PUBLIC MEETING:**

A public meeting was required for this permit because it has greater than 50 permittees. The meeting was held on October 1, 2018.

**PUBLIC NOTICE:**

The Department shall give public notice when 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 or because of 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 facility must be notified of the denial in writing.

The Department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than thirty (30) days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Comment Period for this permit was from 12/07/2018 to 01/07/2019. One letter was received during the 30-day Public Comment Period. The comment and Department’s response is below and is in reference to the Public Noticed version of this permit. No changes were made to the permit in response to the public notice comment.

Comment #1: Commenter requested to replace the word “sludge” throughout the permit with “water treatment residuals,” which they believe more accurately defines the material being produced via the treatment process, and removes unnecessary negative connotations associated with the process.

Response #1: The Department has determined to not replace the word “sludge” with “water treatment residuals.” This decision is due to “sludge” being an accepted wastewater technical term. The term, “water treatment residuals,” while more specific, does not provide technical clarity. Sludge will remain the terminology used in the permit.

**DATE OF FACT SHEET:** 11/08/2018; UPDATED 01/08/2019; UPDATED 03/27/2019

**COMPLETED BY:**

**AMBERLY SCHULZ**

**ENVIRONMENTAL SPECIALIST**

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**

**WATER PROTECTION PROGRAM**

**OPERATING PERMITS SECTION-STORMWATER AND CERTIFICATION UNIT**

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