STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

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

Permit No.	MO-0003727
Owner:	Missouri-American Water Company
Address:	901 Hog Hollow Road, Chesterfield, MO 63017
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	MAWC, Central Water Treatment Plant
Facility Address:	901 Hog Hollow Road, Chesterfield, MO 63017
UTM Coordinates:	See following page
Receiving Stream:	See following page
First Classified Stream and ID:	See following page
USGS Basin & Sub-watershed No.:	See following page

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

FACILITY DESCRIPTION

Industrial, Public Drinking Water Treatment Facility – SIC #4941

This facility is a drinking water treatment plant with coagulation, lime softening, clarification, disinfection, taste and odor control, sedimentation, and filtration treatment to produce potable water. The facility consists of two parallel treatment processes. This facility does not require a certified wastewater operator. Domestic wastewater is managed by sending to the St. Louis Metropolitan Sewer District.

See page 2 for Permitted Feature descriptions.

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 Sections 640.013, 621.250, and 644.051.6 of the Law.

April 1, 2021
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

March 31, 2026
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001
Filter backwash and settling basin wastes from Central Plant 1 & 2.
Lime Softening/ Solids Removal/ Disinfection/ Filtration/Dechlorination.

Legal Description and County:	Landgrant00120, St. Louis County
UTM Coordinates:	X= 714495, Y= 4285174
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (1604)
USGS Basin & Sub-watershed No.:	Lower Missouri (10300200-0704)
Design Flow for Outfall #001&#002:	7.70 million gallons per day (MGD)
Actual Flow for Outfall #001&#002:	4.08 (MGD)

OUTFALL #002
Alternate discharge point for Outfall #001 during periods of high river levels.
Lime Softening/ Solids Removal/ Disinfection/ Filtration/ Dechlorination.

Legal Description and County:	Landgrant00120, St. Louis County
UTM Coordinates:	X= 714495, Y= 4285174
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (1604)
USGS Basin & Sub-watershed No.:	Lower Missouri (10300200-0704)
Design Flow for Outfall #001/#002:	7.70 million gallons per day.
Actual Flow for Outfall #001/#002:	4.08 million gallons per day.

OUTFALL #003
Filter backwash and settling basin wastes from Central Plant 3. Outfall #003 remains in use at the time of permit issuance. During construction, an alternative outfall will be built at the same location, but a higher elevation. This elevated outfall will be used during the transition to the new, permanent outfall #03B, listed below. After construction of Outfall #03B, the original outfall #003 will be closed but the alternative, elevated outfall will remain as #003. After construction of Outfall #03B, use of outfall #003 will be limited to emergencies or necessary maintenance involving temporary closure of Outfall #03B.
Lime Softening/Presedimentation Basins and Dechlorination for all plants.
Outfall relocation planned and authorized in this permit, along with temporary aboveground outfall during construction. Once construction is completed and discharge begins through Outfall #03B, discharge is only permitted during emergency situations.

Legal Description and County:	Landgrant00120, St. Louis County
UTM Coordinates:	X= 714708, Y= 4285418
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (1604)
USGS Basin & Sub-watershed No.:	Lower Missouri (10300200-0704)
Design flow:	11.55 million gallons per day.
Actual Flow:	6.12 million gallons per day.

OUTFALL #03B
New in 2020 permit. Outfall #003 relocating to Outfall #03B. Filter backwash and settling basin wastes from Central Plant 3.
Lime Softening/Presedimentation Basins and Dechlorination for all plants.

Legal Description and County:	Landgrant00120, St. Louis County
UTM Coordinates:	X= 714583, Y= 4285425
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (1604)
USGS Basin & Sub-watershed No.:	Lower Missouri (10300200-0704)
Design flow:	11.55 million gallons per day.
Actual Flow:	6.12 million gallons per day.

PERMITTED FEATURE #004
Raw River Water Intake. Drinking water generation and distribution facility.

Legal Description and County:	Landgrant00120, St. Louis County
UTM Coordinates:	X= 714301, Y= 4284990
Intake Stream:	Missouri River (P) (1604)
USGS Basin & Sub-watershed No.:	Lower Missouri (10300200-0704)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALLS #001, #002, #003, #03B	**TABLE A-1** **INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in Table A-3 must be achieved as soon as possible but no later than **April 1, 2026**. These interim effluent limitations are effective beginning **April 1, 2021** and remain in effect through **March 31, 2026** or as soon as possible. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/day	24 hr. total
CONVENTIONAL						
Chlorine, Total Residual ‡	µg/L	*		*	once/week	grab
pH †	SU	6.0		10.5	once/week	grab
Settleable Solids (Generated) (Note 1)	mL/L/hr	*		*	once/week	composite††
Net Settleable Solids	mL/L/hr	*		*	once/week	calculated
Total Suspended Solids (Note 1)	mg/L	*		*	once/week	composite††
	Lbs/day	*		*	once/week	calculated
Net Total Suspended Solids	mg/L	*		*	once/week	calculated
METALS						
Iron, Total Recoverable	mg/L	*		*	once/month	composite††
Aluminum, Total Recoverable	mg/L	*		*	once/month	composite††
NON-CONVENTIONAL						
Fluoride	mg/L	*		*	once/month	grab
NUTRIENTS						
Ammonia, Total as N	mg/L	*		*	once/month	composite††
GENERAL CRITERIA						
Color / Turbidity (Note 2)	Pass/Fail	*		*	once/month	visual
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity, Acute See Special Condition #1 ⁂	TU_a	3.3			once/year	composite††
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALLS #001, #002, #003	TABLE A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **April 1, 2026** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/day	24 hr. total
CONVENTIONAL						
Chlorine, Total Residual ‡	µg/L	*		*	once/week	grab
pH †	SU	6.0		10.5	once/week	grab
Settleable Solids (Generated) (Note 1)	mL/L/hr	*		*	once/week	composite††
Net Settleable Solids	mL/L/hr	*		*	once/month	calculated
Total Suspended Solids (Note 1)	mg/L	*		*	once/week	composite††
	Lbs/day	*		*	once/week	calculated
Net Total Suspended Solids	mg/L	*		*	once/month	calculated
METALS						
Aluminum, Total Recoverable	mg/L	*		*	once/month	composite††
Copper, Total Recoverable	mg/L	*		*	once/month	composite††
Iron, Total Recoverable	mg/L	440		219	once/month	composite††
NON-CONVENTIONAL						
Fluoride	mg/L	*		*	once/month	grab
NUTRIENTS						
Ammonia, Total as N	mg/L	*		*	once/month	composite††
GENERAL CRITERIA						
Color / Turbidity (Note 2)	Pass/Fail	PASS		PASS	once/month	visual
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2026. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity, Acute See Special Condition #1 ⁂	TU_a	3.3			once/year	composite††
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2027. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALLS #03B	**TABLE A-3** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **April 1, 2026** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/day	24 hr. total
CONVENTIONAL						
Chlorine, Total Residual ‡	µg/L	*		*	once/week	grab
pH †	SU	6.0		10.5	once/week	grab
Settleable Solids (Generated) (Note 1)	mL/L/hr	*		*	once/week	composite††
Net Settleable Solids	mL/L/hr	*		*	once/week	calculated
Total Suspended Solids (Note 1)	mg/L	*		*	once/week	composite††
	Lbs/day	*		*	once/week	calculated
Net Total Suspended Solids	mg/L	*		*	once/week	calculated
METALS						
Aluminum, Total Recoverable	mg/L	*		*	once/month	composite††
Copper, Total Recoverable	mg/L	*		*	once/month	composite††
Iron, Total Recoverable	mg/L	440		219	once/month	composite††
NON-CONVENTIONAL						
Fluoride	mg/L	*		*	once/month	grab
NUTRIENTS						
Ammonia, Total as N	mg/L	*		*	once/month	composite††
GENERAL CRITERIA						
Color (Note 2)	Pass/Fail	PASS		PASS	once/month	visual
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2026. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity, Acute See Special Condition #1 ⁂	TU_a	3.3			once/year	composite††
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2027. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #004 - INTAKE	TABLE A-4 INTAKE MONITORING REQUIREMENTS					
INFLUENT PARAMETERS	UNITS	MONITORING			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/day	24 hr. total
CONVENTIONAL						
Settleable Solids (River Solids) (Note 1)	mL/L/hr	*		*	once/week	composite††
Total Suspended Solids (River Solids)	mg/L	*		*	once/week	composite††
(Note 1)	Lbs/day	*		*	once/week	calculated
METALS						
Aluminum, Total Recoverable	mg/L	*		*	once/month	grab
Copper, Total Recoverable	mg/L	*		*	once/month	grab
Iron, Total Recoverable	mg/L	*		*	once/month	grab
NON-CONVENTIONAL						
Fluoride	mg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

•. Outfall #002 is an alternative discharge point for Outfall #001. Report No-Discharge for either outfall when no discharge from that outfall occurred during the reporting period.

* Monitoring requirement only.

†† A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

† pH: the facility will report the minimum and maximum values; pH is not to be averaged.

*** Discharge shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses. If visual turbidity caused by discharge is present, report number of days visible color or turbidity was noted during the month.

Ϫ WET Testing is not required for Outfall #002 if the annual test was conducted at Outfall #001. Only one test is required annually for either Outfall #003 or Outfall #03B, as these are the same effluent. Report on the active outfall at the time of the annual test.

‡ Chlorine, Total Residual. The Department has determined the current acceptable minimum level (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 facility will conduct analyses in accordance with this method, or equivalent, and report actual analytical values.

Note 1 - The net solids shall be calculated by subtracting river solids from the solids generated. Follow these formulas.
Net Settleable Solids = Settleable Solids (Generated) - Settleable Solids (River Solids)
Net Total Suspended Solids = Total Suspended Solids (Generated) - Total Suspended Solids (River Solids)

Note 2 - Turbidity and/or color may cause a visible plume. This will be a visual assessment- if the discharge is visibly distinct from the receiving water, whether from turbidity, color, or a combination of both, the permittee will report a “1” for FAIL. Reporting a “0” for PASS is only appropriate when the discharge is visually indistinguishable from the receiving waters. No mixing zone is allowed for general criteria.

B. SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed per 40 CFR 122.47 and 10 CSR 20-7.031(11). The facility shall attain compliance with final effluent limitations established in this permit as soon as reasonably achievable:

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.

2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date. The first report is due April 1, 2022.

3. Within 5 years of the effective date of this permit, the permittee shall attain compliance with the final effluent limits at all outfalls for Iron, Color and Turbidity.

4. All permittees using the eDMR system must submit all reports via the electronic reporting system.

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I standard conditions dated August 1, 2014, respectively, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

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

   (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
   (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (d) The Allowable Effluent Concentration (AEC) for this facility is 9.09% with the dilution series being: 36.36%, 18.18%, 9.09%, 4.55%, 2.27%.
   (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
   (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

2. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges.
   (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's 24 hour spill line at 573-634-2436.

3. Electronic Discharge Monitoring Report (eDMR) Submission System
   Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program.

D. SPECIAL CONDITIONS (CONTINUED)

(a) eDMR Registration Requirements. The facility must register with the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/mogem. Information about the eDMR system can be found at https://dnr.mo.gov/env/wpp/edmr.htm.The first user shall register as an Organization Official and the association to the facility must be approved by the Department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit unless a waiver is granted by the Department. See paragraph (c) below.

(b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://apps5.mo.gov/mogems/welcome.action If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.

(c) Waivers from Electronic Reporting. The facility must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. Only facilities 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. Facilities may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days.

4. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
   (a) Discharge from the treatment process (which include the pre-sedimentation basins, softening basins, stabilization basins and filters (filter backwash)) shall be, as reasonable practicable without impacting finished drinking water quality, automated in an effort to reduce changes in short term loading of treatment residuals in the receiving waterbody and discharge as continuously as practicable.
   (b) The permittee will evaluate options during future plant upgrades to recycle a portion of the solids from each of the softening basins to the mixing basins for the pre-sedimentation basins to reduce the production and discharge of treatment residuals.
   (c) The Facility uses softening additives in its enhanced lime softening process. To the extent reasonably practicable and without impacting finished drinking water quality, the Facility shall utilize softening additives only in amounts necessary to treat water in order to meet drinking water standards and acceptable finished water quality.
   (d) Material Safety Data Sheets shall be submitted to the Department during renewal for coagulants and flocculants that are utilized or planned to be utilized during the next permit cycle in the treatment process and which can be discharged through any outfall.
   (e) Treatment sedimentation basins will be cleaned out periodically, with each train being cleaned over the span of multiple days. The clean out schedule shall be set so as not to compromise the operational needs of the facility, and to the extent practicable, to equalize the amount of treatment residual solids discharged through the system. Drainage of all basins simultaneously for the purpose of cleaning is prohibited
   (f) Discharge of chlorinated backwash shall at all times meet the effluent limitations for total residual chlorine. The facility must monitor chlorine levels and calculate the dechlorination necessary to meet limits.
   (g) Surface intake water shall be monitored for amount of river solids and other parameters as specified in Table A-4.
   (h) The permittee has evaluated options to reduce residuals generation in the drinking water treatment process and alternative treatment and disposal methods for reducing solids loading to the waterbody. Results of these evaluations were provided to the Department in a written report and submitted together with the permittee's renewal application. The permittee has implemented the above listed reduction in residuals generated. The permittee will continue to monitor and evaluate operations, noting any cost effective potential reductions in solids generation.
   (i) The permittee will construct a new outfall, #03B, for compliance with narrative water quality criteria in the river within 5 years of permit issuance.

5. 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 RSMo 644.051.16, 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 Clean Water Act Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2), 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. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the facility for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

6. All outfalls and permitted features must be clearly marked in the field.

7. Report as no-discharge when a discharge does not occur during the report period. When Outfall #03B is constructed, facility shall contact the Department and request activation of Outfall #03B and de-activation of Outfall #003. After Outfall #03B is active, discharge may only occur during emergency or extenuating circumstances and monitoring must occur during any reporting period

D. SPECIAL CONDITIONS (CONTINUED)

in which a discharge occurs through either outfall. Therefore, if discharge occurs through both outfalls during a reporting period, sampling must occur and be reported for both outfalls. If no discharge occurs, report as no discharge.

8. If operations and maintenance activities, like residuals cleanout events, are expected to generate solids more than the automated, continuous discharge activities, a representative sample must be taken during the cleanout event. If this results in more than one sample event occurring during the monitoring period, the highest sample results shall be reported for that period.

9. The Department may require sampling and reporting as a result of illegal discharges from the site, compliance issues related to water quality concerns or BMP effectiveness, or evidence of off-site impacts from activities or discharges at the facility.

10. Changes in Discharges of Toxic Pollutant
In addition to the reporting requirements under §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) That 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 that discharge will exceed the highest of the following notification levels:
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
      (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) That any 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 that 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 that 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).

11. Reporting of Non-Detects
   (a) Compliance analysis conducted by the facility or any contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated. See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, #4 regarding proper testing and detection limits used for sample analysis. For the purposes of this permit, the definitions in 40 CFR 136 apply; method detection limit (MDL) and laboratory established reporting limit (RL) are used interchangeably in this permit.
   (b) The facility shall not report a sample result as "non-detect" without also reporting the MDL. Reporting "non-detect" without also including the MDL will be considered failure to report, which is a violation of this permit.
   (c) For the daily maximum, the facility shall report the highest value; if the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method detection limit (MDL) or the highest reporting limit (RL); whichever is higher (e.g. <6).
   (d) When calculating monthly averages, zero shall be used in place of any value(s) not detected. Where all data used in the average are below the MDL or RL, the highest MDL or RL shall be reported as "<#" for the average as indicated in item (c).

12. Failure to pay fees associated with this permit is a violation of the Missouri Clean Water Law (644.055 RSMo).

13. This permit does not cover land disturbance activities.

14. This permit does not authorize the placement of fill materials in flood plains, placement of solid materials into any waterway, the obstruction of stream flow, or changing the channel of a defined drainage course. The facility must contact the U.S. Army Corps of Engineers (Corps) to determine if a CWA §404 Department of Army permit or §401 water quality certification is required for the project.

15. Renewal Application Requirements.
   (a) This facility shall submit an appropriate and complete application to the Department no less than 180 days prior to the expiration date listed on page 1 of the permit.
   (b) Application materials shall include complete Form A and Form C. If the form names have changed, then the facility should ensure they are submitting the correct forms as required by regulation.
   (c) The facility may use the electronic submission system to submit the application to the Program, if available.

E. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0003727
MAWC, CENTRAL WATER TREATMENT PLANT

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

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I. FACILITY INFORMATION

Facility Type:	Industrial
Facility SIC Code(s):	4941
NAICS #:	221310
Application Date:	12/14/2015, updated 2/7/2020
Expiration Date:	06/16/2016

FACILITY DESCRIPTION AND HISTORY:
This facility provides potable water service to approximately 370,500 residential and commercial customers in the St. Louis Metropolitan area, which includes portions of St. Louis and St. Charles counties. The plant is located along the Missouri River.

This water treatment plant (WTP) withdraws water from the Missouri River at approximately river mile 36 and consists of two independent treatment segments: Plants 1 and 2 and Plants 3A and 3B. Plants 1 and 2 were constructed between 1904 and 1954 and have a combined capacity of 85 million gallons per day (MGD). Plants 3A and 3B were built in 1968 and 1971 and have a combined treatment capacity of 132 MGD. The total treatment capacity of the Central Plant is approximately 217 MGD while the average daily production of the Central Plant is approximately 99.5 MGD.

The WTP performs coagulation, lime softening, clarification, filtration, disinfection, taste and odor control, disinfection byproduct control, and phosphate addition for sequestration. Treatment residuals are generated from the clarification, softening, and filtration processes; therefore, the WTP's discharge includes suspended solids from the Missouri River water, precipitated calcium and magnesium hydroxides from the softening process, residuals from coagulation, ferric hydroxide, and filter backwash water.

This facility has reasonable potential to cause excursions from general criteria listed in 10 CSR 20-7.031(4)(C) which states "Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses."; the discharge from this facility has been observed to cause a violation of narrative criteria for color and turbidity. Pollutants causing this violation are residuals from drinking water treatment process including the lime softening process, coagulation and flocculation, and filter backwash. 40 CFR 122.44(d)(1)(i) states "limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including State Narrative Criteria for water quality."

122.44(d)(1)(iii) states "When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant."

In the case of turbidity and color there is no water quality standard to derive a water quality based effluent limit. In addition, the EPA has not promulgated any Effluent Limit Guidelines (ELG) for drinking water treatment plants that could be used to develop technology based effluent limits. The color and pH parameters have a direct correlation with solids discharge. As a result, numeric effluent limits will be implemented for Whole Effluent Toxicity as well as for pH. This is in accordance with 122.44(d)(1)(vi)(c) which allows the establishment of effluent limits using indicator parameter(s) for the pollutant of concern.

Whole Effluent Toxicity and pH are being utilized as indicator parameters for water treatment residuals (solids) for which general criteria violations are attributed to. The lime residuals present in the discharge are capable of producing a visible plume. This is due to the turbidity and/or color produced by the surface discharge to the receiving waterbody.

Numeric limits for pH and WET testing can be tied to two primary concerns associated with lime solids discharge. First, as lime is naturally high in pH this parameter will translate to control of the quantity of residuals being discharged. As the high pH and high concentration of residual lime/sediments contribute to aquatic toxicity, numeric limits for Acute WET will translate to limitation of the quantity of residuals being discharged. Whole effluent toxicity can be affected by the solids concentrations in water. Gill function and motility are negatively affected when solids accumulate on gill surfaces or make feeding impossible. Suspended and dissolved solids affect organisms different ways, and different types of solids, such as salts or alternatively organic materials, behave differently when contacting different organisms. Dissolved salts can shift the ionic composition of water and cause organisms to dehydrate due to cell adsorptions of salts. Lime, a calcium precipitate product, may negatively affect organisms by upregulating calcium ion (Ca++) channels, causing unregulated muscle activity, heart beat dysregulation, and ultimately fish death if exposure continues[1].

The previous permit required implementation of new and improved best management practices (BMP) as a means to improve the treatment of and reduce the discharge of solids into the river. Since issuance of the previous permit on June 17, 2011, the facility has implemented new best management practices for residuals solids management, process water diversion, carbon dioxide and basin flow adjustments to reduce pH, automated presedimentation basin sludging for equalization of effluent discharge, and dechlorination by chemical addition to meet total residual chlorine limits. The majority of residuals (approximately 90%) are generated in the four pre-sedimentation basins and discharged via Outfall #003. The residuals generated from the pre-sedimentation basins are discharged according to programming set up in the plant's SCADA system, which automates the sludge discharge valves periodically for a set amount of time. This was identified as a Best Management Practice (BMP) in the Residual Management Best Professional Judgment Study completed in 2009 and incorporated into the MSOP. The intent of the discharge timing is to achieve as constant/uniform a discharge as possible for the facility.

An additional BMP was incorporated in 2015, which included the installation of a high efficiency lime feed system to replace the older style lime slakers. The new system (RDP slaking system) optimizes the slaking process to ensure lime is fully reacted and efficiently fed via a precision dosing system. Thus, minimizing the amount of unreacted lime settling in the basins and being discharged. Lime, due its white color, is largely responsible for potential color changes in the river, and utilizing the RDP system helps mitigate this issue. To comply with the Schedule of Compliance (SOC) in the MSOP issued for Missouri American Water Company's Central Plant (MO-0003727), de-chlorination equipment installation was completed in 2014 to meet the SOC and the corresponding TRC limit. The de-chlorination equipment included chemical storage (40% sodium bisulfite), chemical feed equipment and the corresponding controls / metering / monitoring equipment. Due to the variable flow conditions it took some time to optimize the de-chlorination process and the 2015 exceedance occurred during this optimization period. Optimization took the better part of a year due to the seasonally variable flows and the facility has consistently met the TRC limits once optimization was achieved. The dechlorination system is now a required treatment system.

The BPJ was updated in 2019 to evaluate technology improvements to address color in the discharge and better manage solids. The BPJ included a hydrological survey, resource agency required assessments, evaluation of construction and operation and maintenance costs, as well as options for flooding and erosion control. The evaluation determined that outfall relocation, with continued enhanced BMPs was the best option. The study also evaluated multiple relocation options. As such, this permit also authorizes the next system enhancement: moving the outfall to a new location for optimum compliance with narrative water quality criteria. This new outfall location was selected after extensive river flow modeling, as well as mapping of the river and discussions with the U.S. Corps of Engineers. The relocated outfall is designed to resolve the visible color and turbidity concerns associated with this discharge. This study is available upon request. A special condition incorporating Best Management Practices (BMPs) is being included in the permit as well. These BMP's identify processes that must take place in order to reduce the quantity of residuals in the discharge. This will further limit the quantity of residuals being discharged thereby decreasing reasonable potential to exceed water quality standards.

The charter number for the continuing authority for this facility is 00001468; this number was verified by the permit writer to be associated with the facility and precisely matches the continuing authority reported by the facility. In accordance with 40 CFR 122.21(f)(6), the permittee reported other permits currently held by this facility. This facility has the following permits: St. Louis

[1] Bash, Berman, and Bolton. "Effects of Turbidity and Suspended Solids on Salmonids," 2001.
Hodgson, Rhiannon Michaela. "Changes in Gill Physiology and Energy Requirements of Darter Species (*Etheostoma* spp.) due to Effluent in the Grand River," 2020.

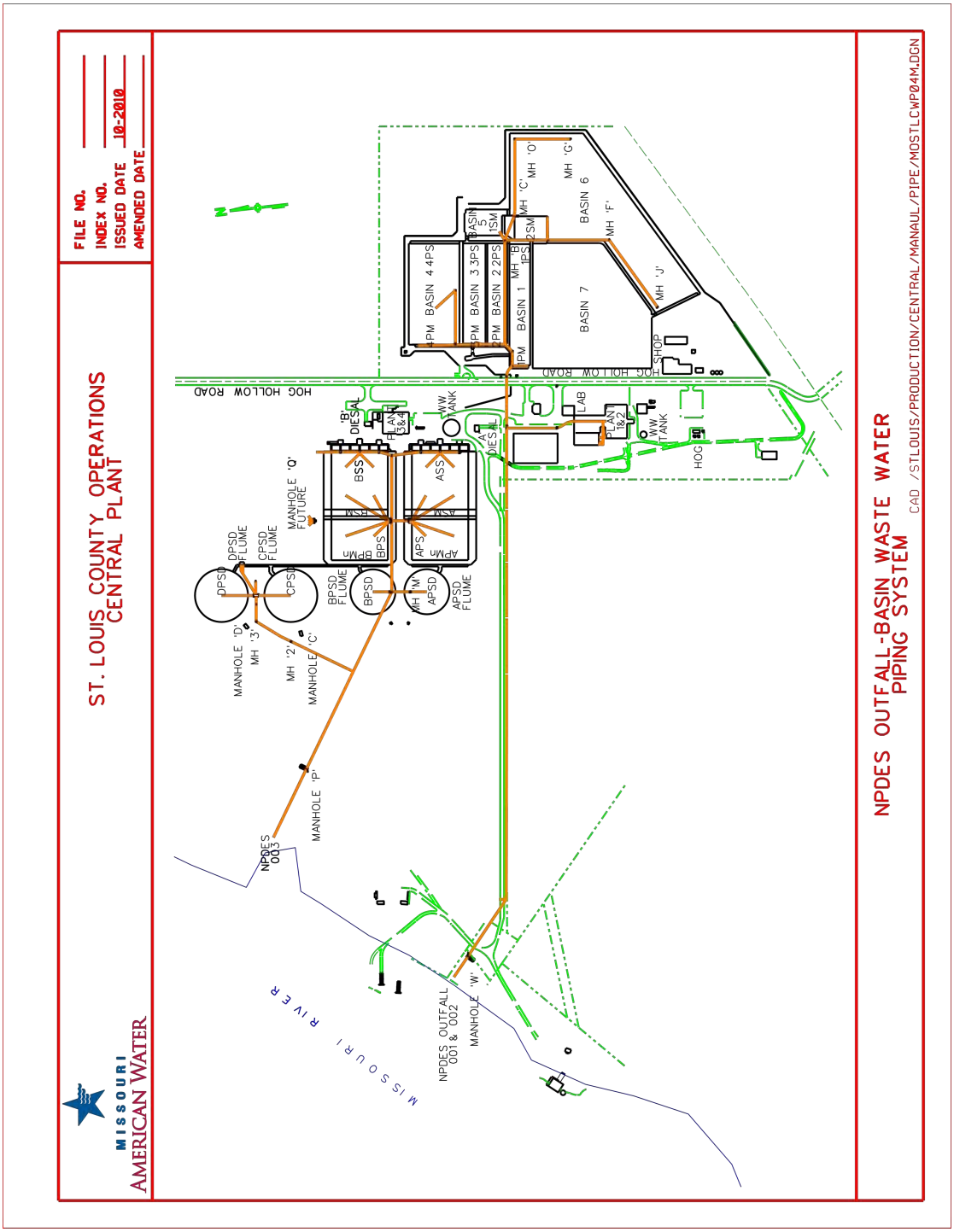
County Air Permits #6277 and #6278, Depredation Permit through the National Fish and Wildlife Service #02001A, DNR land disturbance permit MORA10907, City of Maryland Heights Grading Permit #GRD17-0014, and underground storage tank (UST) permit ST0000344.

PERMITTED FEATURES TABLE:

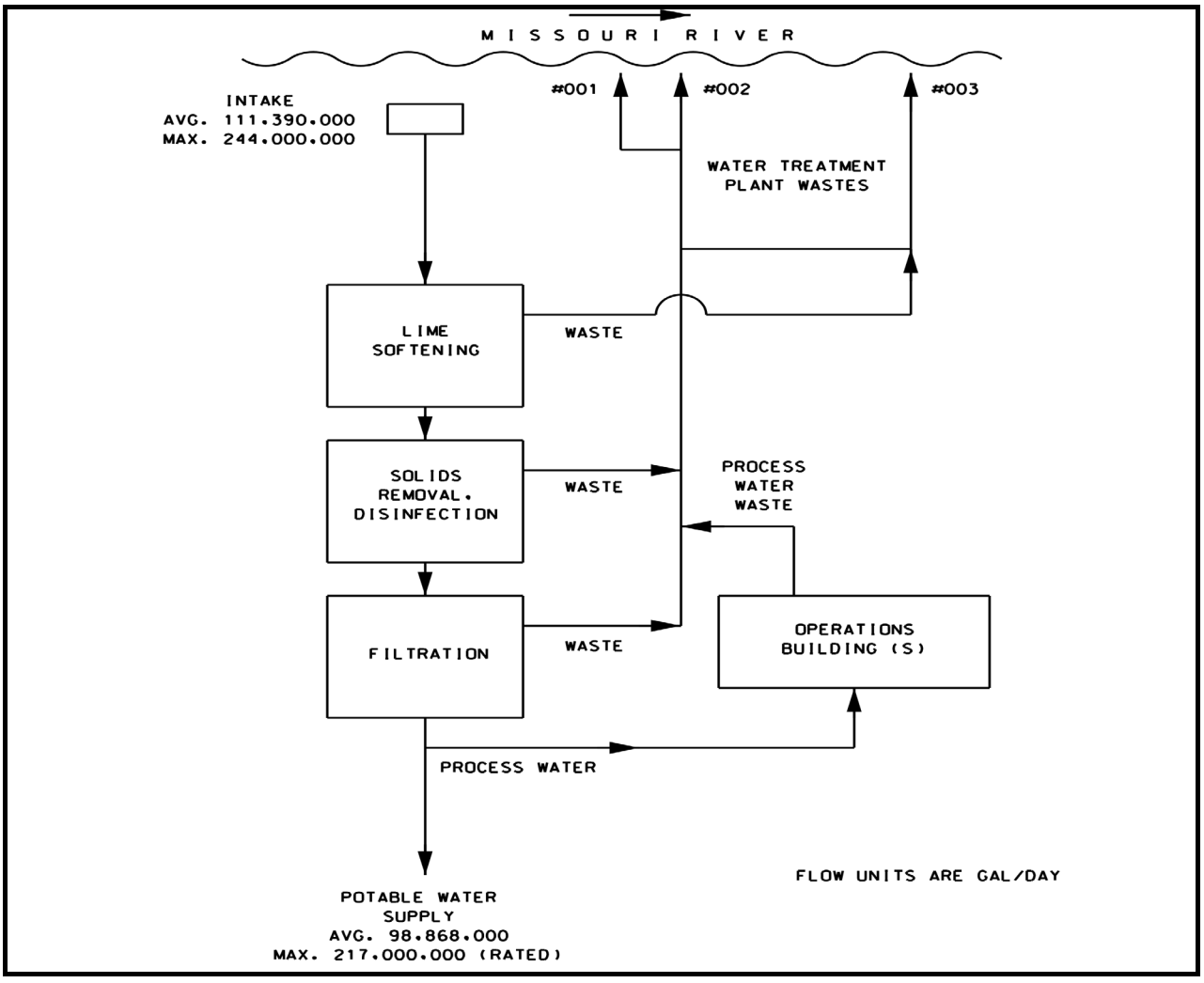
OUTFALL	AVERAGE FLOW (MGD)	DESIGN FLOW (MGD)	TREATMENT LEVEL	EFFLUENT TYPE
#001/#002	4.08	7.70	Best Management Practices	Water Treatment Residuals and Filter Backwash
#003/#03B	6.12	11.50	Best Management Practices	Water Treatment Residuals and Filter Backwash

FACILITY MAPS:

FACILITY MAPS (CONTINUED):



WATER BALANCE DIAGRAM:



Part II. Receiving Stream Information

Receiving Waterbody's Water Quality:
The Missouri River has a TMDL (see below) for chlordane and PCBs and is impaired for *E. Coli* (see below).

303(d) List:
Section 303(d) of the federal Clean Water Act 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 (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) list helps state and federal agencies keep track of impaired waters not addressed by normal water pollution control programs. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm

✓ Applicable; (water body's name) is listed on the 1998 Missouri 303(d) list for chlordane and polychlorinated biphenyls (PCB) and the 2008 Missouri 303(d) list for *E. Coli*.
- This facility is not considered a source of the above listed pollutant(s) or considered to contribute to the impairment.

Total Maximum Daily Load (TMDL):
A TMDL is a calculation of the maximum amount of a given pollutant a water body can absorb before its water quality is affected; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. http://dnr.mo.gov/env/wpp/tmdl/

✓ Applicable; the Missouri River is associated with the 2006 EPA approved TMDL for chlordane and PCB.
- This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment.

Upstream or Downstream Impairments:
The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.

✓ The permit writer has noted upstream from the facility is impaired and WET testing may use upstream receiving water to complete the WET test, unless it is demonstrated that toxicity is present upstream.

Applicable Designations of Waters of the State:
Per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], waters of the state are divided into seven categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's effluent limitation table and further discussed in Part IV: Effluents Limits Determinations

✓ Missouri or Mississippi River

Receiving Streams Table:

Outfall	Waterbody Name	Class	WBID	Designated Uses*	Distance to Segment (Miles)	12-digit HUC
ALL	Missouri River	P	1604	DWS, GEN, HHP, IND, IRR, LWW, SCR, WC-B, WWH (AQL)	0.0	10240011-0608

WBID = Waterbody IDentification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip

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

Uses which may be found in the receiving streams table, above:
10 CSR 20-7.031(1)(C)1.:
AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)
10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = Whole body contact recreation supporting swimming uses and has public access;
WBC-B = Whole body contact recreation supporting swimming;
SCR = Secondary Contact Recreation (like fishing, wading, and boating).
10 CSR 20-7.031(1)(C)3. to 7.:
HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation for use on crops utilized for human or livestock consumption;
LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply;
IND = Industrial water supply
10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)
WSA = Storm- and flood-water storage and attenuation; WHP = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = Hydrologic cycle maintenance.
10 CSR 20-7.031(6): GRW = Groundwater

RECEIVING STREAM LOW-FLOW VALUES:

OUTFALL	RECEIVING STREAM (P)	LOW-FLOW VALUES (CFS)		
		1Q10	7Q10	30Q10
ALL	Missouri River (P)	32,778	34,760	37,593

Low flow values were obtained from USGS Gaging Station 06935550 at Labadie, MO. Data was obtained from 4/9/2015 to 5/7/2020 and was calculated using a departmentally developed spreadsheet (available upon request).

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) (CHRONIC) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) (ACUTE) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
8,194	8,690	9,398	298	298	298

ZID cannot be more than 10 times the facility design flow. The total design flow is 29.78 CFS; thus, 10 times the design flow is 298 CFS. This flow is smaller than the ZIDs calculated from the mixing zone flows in the table. Therefore, the ZID is 298 CFS.

RECEIVING WATERBODY MONITORING REQUIREMENTS:
No receiving water monitoring requirements are recommended at this time

Part III. RATIONALE AND DERIVATION OF EFFLUENT LIMITATIONS & PERMIT CONDITIONS

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

- ✓ Not applicable; the facility does not discharge to a losing stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], and is an existing facility.

ANTI-BACKSLIDING:
Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- ✓ Limitations in this operating permit reissuance conform to the anti-backsliding provisions of CWA §402(o), and 40 CFR 122.44.
  - ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
    - To comply with the Schedule of Compliance (SOC) in the MSOP issued for Missouri American Water Company's Central Plant (MO-0003727), de-chlorination equipment installation was completed in 2014 to meet the SOC and the corresponding TRC limit. The de-chlorination equipment included chemical storage (40% sodium bisulfite), chemical feed equipment and the corresponding controls / metering / monitoring equipment. Due to the variable flow conditions it took some time to optimize the de-chlorination process and the 2015 exceedance occurred during this optimization period. Optimization took the better part of a year due to the seasonally variable flows and the facility has consistently met the TRC limits once optimization was achieved. Evaluation of the data since completion of the installation and final implementation of the current treatment system was conducted and found that the facility does not have reasonable potential for exceedances of total residual chlorine with this new system in place. As such, limits were removed and monitoring only is continued.
  - ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under CWA §402(a)(1)(b).
    - The previous permit's limits for WET testing were recorded as pass/fail, however, the Department has determined numeric representations of the toxicity to be more appropriate. The limitations are continued to be based on the acute toxicity measured as LC_{50} for both organisms. However, by converting the LC_{50} to a Toxic Unit (TUa) the Department will be able to perform reasonable potential analysis on future results. The limitations are essentially the same as the current permit, although the dilution series has changed to meet the standard that the dilution series be rational and self-divisible. By changing the testing requirements from pass/fail to toxic units, this test method reflects modifications to Missouri's effluent regulations found in 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requires the Department to establish effluent limitations to control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed pass/fail limitation

without collecting sufficient numerical data to conduct an analytical reasonable potential analysis as reasonable potential cannot be found on such few data points.

- Per a memorandum issued by the EPA entitled *Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies* (4/19/1996), the Department has found the facility eligible for reduced monitoring frequency. Stormwater on site is controlled through a number of mechanisms including a SWPPP. Operations at the facility have been improving. The facility has a history of passing WET test results. A decreased sampling frequency is warranted for WET Testing at all applicable outfalls. WET testing frequency is herein reduced from twice per year to once per year.
- The previous permit special conditions contained a specific set of prohibitions related to general criteria (GC) 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. This permit assesses each general criteria as listed in the previous permit's special conditions. 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 while maintaining permit conditions applicable to facility disclosures and in accordance with 10 CSR 20-7.031(4) where no water contaminant by itself or in combination with other substances shall prevent the water of the state from meeting the following conditions:
  (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 outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the facility indicates putrescent wastewater would be discharged from the facility.
    - For all outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses based on modeling results for flow of the river at the point of the new outfall #03B discharge. The new outfall #03B is located off the bottom of the river; therefore, bottom deposits are not expected.
  (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 outfalls, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the facility indicates oil will be present in sufficient amounts to impair beneficial uses.
    - For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the facility indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses. Foam is a mass of gas bubbles in a liquid-film matrix or a chemical froth. With the shallow or surface discharge at Outfall #003, there may be churning or visible turbidity, but it does not appear to be true foam; however, the new outfall #03B will be submerged. Color and/or turbidity will be monitored, as needed, at the outfalls.
  (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 outfalls, there is RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses and, as such, limits have been established for these parameters. The facility is continuously improving their treatment, in the form of best management practices, to address these specific general criteria issues.
    - For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the facility indicates offensive odor will be present in sufficient amounts to impair beneficial uses.
  (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, wildlife, and aquatic life.
  (E) Waters shall maintain a level of water quality at their confluences to downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including waters of another state.
    - This criteria was not assessed for anti-backsliding as this is a new requirement, approved by the EPA on July 30, 2019.
  (F) There shall be no significant human health hazard from incidental contact with the water.

- This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
- Much like the condition above, the permit writer considered specific toxic pollutants when writing this permit, including those pollutants could cause human health hazards. The discharge is limited by numeric effluent limitations for those conditions could result in human health hazards.

(G) There shall be no acute toxicity to livestock or wildlife watering.
- The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants could be discharged in toxic amounts. These effluent limitations are protective of livestock and wildlife watering.

(H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
- For all outfalls, there is RP for physical changes impairing the natural biological community associated with elevated pH in the effluent. As such, pH limits are established in this permit.
- It has been established any chemical changes are covered by the specific numeric effluent limitations and special conditions established in the permit.
- For all outfalls, there is no RP for hydrologic changes impairing the natural biological community because nothing disclosed by the facility indicates this is occurring.

(I) 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 260.200 RSMo, except as the use of such materials is specifically permitted pursuant to 260.200 through 260.247 RSMo.
- 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.

ANTIDEGRADATION REVIEW:
Process water discharges with new, altered, or expanding flows, the Department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm

✓ Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

✓ Not applicable; the facility does not have stormwater discharges or the stormwater outfalls onsite have no industrial exposure.

BEST MANAGEMENT PRACTICES:
Minimum site-wide best management practices are established in this permit to ensure all facilities are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these best management practices are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum best management practices are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state, therefore pollutants cannot be released unless in accordance with RSMo 644.011 and 644.016 (17).

BENCHMARKS:
When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

✓ Not applicable; This facility has an SIC code of 4941 which is not identified in 40 CFR 122.26 (a)(14) or 10 CSR 20-6.200(2)(B).

BIOSOLIDS & SEWAGE SLUDGE:

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 condition is not applicable to the permittee for this facility.

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

This special condition reiterates the federal rules found in 40 CFR 122.44(f) for technology treatments and 122.42(a)(1) for all other toxic substances. In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as "…any pollutant listed as toxic under section 307(a)(1)" or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA." Section 307 of the clean water act then refers to those parameters listed in 40 CFR 401.15 and any other toxic parameter the Department determines is applicable for reporting under these rules in the permit. The facility should also consider any other toxic pollutant in the discharge as reportable under this condition and must report all increases to the Department as soon as discovered in the effluent. The Department may open the permit to implement any required effluent limits pursuant to CWA §402(k) where sufficient data was not supplied within the application but was supplied at a later date by either the permittee or other resource determined to be representative of the discharge, such as sampling by Department personnel.

COMPLIANCE AND ENFORCEMENT:

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

✓ Not applicable; the permittee/facility is not currently under Water Protection Program enforcement action.

COST ANALYSIS FOR COMPLIANCE (CAFCOM):

Pursuant to 644.145 RSMo, when incorporating a new requirement for discharges from publicly owned facilities, or when enforcing provisions of this chapter or the CWA, pertaining to any portion of a publicly owned facility, the Department shall make a finding of affordability on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the CWA. This process is completed through a CAFCom. Permits not including new requirements may be deemed affordable.

✓ The Department is not required to complete a cost analysis for compliance because the facility is not publicly owned.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:

Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.

✓ Not applicable; this facility discharges domestic wastewater to an off-site permitted wastewater treatment facility (POTW).

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. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.

Additional information: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).

✓ Not applicable; the facility does not manage domestic wastewater on-site.

EFFLUENT LIMITATION GUIDELINE:
Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA 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 which must be met by the applicable facility at all times.

✓ The facility does not have an associated federal ELG. However, solids may be returned to the same river they were withdrawn from per 10 CSR 20-7.015 which are Missouri's technology limits for all facilities.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all facilities to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a facility must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is not transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

To assist the facility in entering data into the eDMR system, the permit describes limit sets designators in each table in Part A of the permit. The data entry personnel should use these identifiers to ensure data entry is being completed appropriately. For example, M for monthly, Q for quarterly, and others.

✓ The facility is currently using the eDMR data reporting system.

GROUNDWATER MONITORING:
Groundwater is a water of the state according to 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ This facility is not required to monitor groundwater for the water protection program.

INDUSTRIAL SLUDGE:
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; industrial sludge is generated at this facility. The drinking water treatment generates sludge that is discharged directly to the Missouri River. This sludge is authorized to be discharged and permit contains specific condition controlling the rates and volumes of discharge in order to protect water quality.

LAND APPLICATION:
Land application, or surficial dispersion of wastewater and/or sludge, is performed by facilities to maintain a basin as no-discharge. Requirements for these types of operations are found in 10 CSR 20-6.015; authority to regulate these activities is from RSMo 644.026.

✓ Not applicable; this permit does not authorize operation of a surficial land application system to disperse wastewater or sludge.
✓ This permit does not authorize land disposal or the application of hazardous waste.

LAND DISTURBANCE:
Land disturbance, sometimes called construction activities, are actions which cause disturbance of the root layer or soil; these include clearing, grading, and excavating of the land. 40 CFR 122.26(b)(14) and 10 CSR 20-6.200(3) requires permit coverage for these activities. Coverage is not required for facilities when only providing maintenance of original line and grade, hydraulic capacity, or to continue the original purpose of the facility.

✓ Not applicable; this permit does not provide coverage for land disturbance activities. The facility may obtain a separate land disturbance permit (MORA) online at https://dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm; MORA permits do not cover disturbance of contaminated soils, however, site specific permits such as this one can be modified to include appropriate controls for land disturbance of contaminated soils by adding site-specific BMP requirements and additional outfalls.

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 Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/pubs/pub2337.htm

✓ Applicable; this facility is a major water user and is registered with the state.

OIL/WATER SEPARATORS:

Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.

✓ Not applicable; the facility has not disclosed the use of any oil water separators they wish to include under the NPDES permit at this facility and therefore oil water separator tanks are not authorized by this permit.

OPERATOR CERTIFICATION REQUIREMENTS:

Operators or supervisors of operations at regulated domestic wastewater treatment facilities shall be certified in accordance with 10 CSR 20-9 and any other applicable state law or regulation.

✓ Not applicable; this facility is not required to have a certified operator. This permit does not cover domestic wastewater or the domestic wastewater population equivalent (PE) is less than two hundred (200) individuals.

PRETREATMENT:

This permit does not regulate pretreatment requirements for facilities discharging to an accepting permitted wastewater treatment facility. If applicable, the receiving entity (the publicly owned treatment works - POTW) is to ensure compliance with any effluent limitation guidelines for pretreatment listed in 40 CFR Subchapter N per 10 CSR 20-6.100. Pretreatment regulations per RSMo 644.016 are limitations on the introduction of pollutants or water contaminants into publicly owned treatment works or facilities.

✓ Not applicable, this facility does not discharge industrial wastewater to a POTW. Domestic wastewater is not subject to pretreatment requirements.

REASONABLE POTENTIAL (RP):

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 causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times; however, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for the pollutant per 40 CFR Part 122.44(d)(1)(iii) and the most stringent limits per 10 CSR 20-7.031(9)(A). Permit writers may use mathematical reasonable potential analysis (RPA) using the Technical Support Document for Water Quality Based Toxics Control (TSD) methods (EPA/505/2-90-001) as found in Section 3.3.2, or may also use reasonable potential determinations (RPD) as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD.

✓ Applicable; an RPA was conducted on appropriate parameters and was conducted as per (TSD Section 3.3.2). A more detailed version including calculations of this RPA is available upon request. See Wasteload Allocations (WLA) for Limits in this section.

Parameter:	CMC Acute	CCC Chronic	Listing	Daily Max	Monthly Average	n#	CV	n Max	MF	RWC Acute	RWC Chronic	RP
Iron, TR	NA	1,000	AQL	440075	219359	95	0.60	695040	1.44	76821	3497	Yes
Total Residual Chlorine	19	11	AQL-Warm	209	103.1	155	0.61	129	1.127854	14.993	0.563354	No

Units are (µg/L) unless otherwise noted.

n/a	Not Applicable
n	number of samples; if the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.
CV	Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the mean of the same sample set.
CCC	continuous chronic concentration
CMC	continuous maximum concentration
RWC	Receiving Water Concentration: concentration of a toxicant or the parameter in the receiving water after mixing (if applicable)
MF	Multiplying Factor; 99% confidence level and 99% probability basis
RP	Reasonable Potential: an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

✓ Applicable; the permit writer conducted an RPD on applicable parameters with available data within the permit. See Part IV: Effluent Limits Determinations below.

✓ For other parameters, permit writers use the Department's permit writer's manual (http://dnr.mo.gov/env/wpp/permits/manual/permit-manual.htm), the EPA'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, water quality standards, stream flows and uses, and all applicable site specific information and data gathered by the facility through discharge monitoring reports and renewal (or new) application sampling. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the EPA, 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 facility; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs. Part IV provides specific decisions related to this permit.

SAMPLING FREQUENCY JUSTIFICATION:
Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2). The Department has found the facility eligible for reduced monitoring frequency. Operations at the facility have been improving. The facility has a history of passing WET test results. A decreased sampling frequency is warranted for WET Testing at all applicable outfalls. WET testing frequency is herein reduced from twice per year to once per year.

SAMPLING TYPE JUSTIFICATION:
Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are 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, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others. For further information on sampling and testing methods see 10 CSR 20-7.015(9)(D)2.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, 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. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met. A SOC is not allowed:

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

In order to provide guidance in developing SOCs, and to attain a greater level of consistency, the Department issued a policy on development of SOCs on October 25, 2012. The policy provides guidance to permit writers on standard time frames for schedules for common activities, and guidance on factors to modify the length of the schedule.

✓ Applicable; the time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(12)]. The facility has been given a schedule of compliance to meet final effluent limits. This permit contains new effluent limits for iron and general criteria parameters: Visible Foam, Turbidity and Color. As these effluent limits may require the facility to alter operations a five (5) year schedule of compliance has been included in order to provide adequate time to determine any operational changes or changes to the facility that must be completed to meet final effluent limits. In addition this schedule of compliance will allow adequate time to implement those changes and alterations.

STANDARD CONDITIONS:
The standard conditions Part I attached to this permit incorporate all sections of 10 CSR 20-6.010(8) and 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the facility to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean Water Act. Standard Conditions Part III, if attached to this permit, incorporate requirements dealing with domestic wastewater, domestic sludge, and land application of domestic wastes.

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:
Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater-only discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) §3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater-only outfalls will generally only contain a maximum daily limit (MDL), a benchmark, or a monitoring requirement as dictated by site specific conditions, the BMPs in place, the BMPs proposed, past performance of the facility, and the receiving water's current quality.

Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the facility in knowing when additional corrective actions may be necessary to comply with the conditions of the permit.

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

✓ Not applicable; this facility's SIC code does not require stormwater monitoring per 40 CFR 122.26(b)(14) or 10 CSR 20-6.200.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under §304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under §402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators,* (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of storm water discharges. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

A SWPPP must be prepared by the facility if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the facility should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

✓ Not applicable; this facility's SIC code does not require stormwater monitoring per 40 CFR 122.26(b)(14).

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, §A, No. 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 and incorporated within this permit. 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; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 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 facility is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive.

UNDERGROUND INJECTION CONTROL (UIC):

The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to §§1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by RSMo 577.155; Class II wells are established for oil and natural gas production; Class III wells are used to inject fluids to extract minerals; Class IV wells are also banned by Missouri in RSMo 577.155; Class V wells are shallow injection wells; some examples are heat pump wells and groundwater remediation wells. Domestic wastewater being disposed of sub-surface is also considered a Class V well. In accordance with 40 CFR 144.82, construction, operation, maintenance, conversion, plugging, or closure of injection wells shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDW) if the presence of any contaminant may cause a violation of drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health. If the director finds the injection activity may endanger USDWs, the Department may require closure of the injection wells, or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the facility shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at

the following web address: http://dnr.mo.gov/forms/780-1774-f.pdf Single family residential septic systems and non-residential septic systems used solely for sanitary waste and having the capacity to serve fewer than 20 persons a day are excluded from the UIC requirements (40 CFR 144.81(9)).

✓ Not applicable; the facility has not submitted materials indicating the facility will be performing UIC at this site.

VARIANCE:

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

✓ Not applicable; the operating permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does provide adequate protection for the receiving waters, then the other must be used.

✓ Applicable; wasteload allocations were calculated where relevant using water quality criteria or water quality model results and by applying the dilution equation below:

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

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

- Acute wasteload allocations designated as daily maximum limits (MDL) were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).
- Chronic wasteload allocations designated as monthly average limits (AML) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ).
- Water quality based MDL and AML effluent limitations were calculated using methods and procedures outlined in USEPA's *Technical Support Document For Water Quality-based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.
- Number of Samples "n": In accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For total ammonia as nitrogen, "n = 30" is used.

WLA MODELING:

Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

✓ Not applicable; a WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARD REVISION:

In accordance with 644.058 RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

✓ This operating permit does not contain requirements for a water quality standard changing twenty-five percent or more since the previous operating permit.

Part IV. Effluent Limits Determination

Outfall #001, #002, #003, #03B – Wastewater Outfalls

Specific Criteria Considerations:

Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. 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 under 40 CFR 122.45(d)(1) for continuous discharges not from a POTW.

Influent Monitoring Table – Permitted Feature #004:

PARAMETERS	Unit	Daily Max	Monthly Avg	previous permit limits	Minimum Sampling Frequency	Minimum Reporting Frequency	Sample Type
Physical							
Flow	MGD	*	*	NEW	ONCE/DAY	ONCE/MONTH	24 Hr. Tot
Conventional							
Settleable Solids	mL/L/hr	*	*	NEW	ONCE/WEEK	ONCE/MONTH	COMPOSITE
Total Suspended solids	MG/L	*	*	NEW	ONCE/WEEK	ONCE/MONTH	COMPOSITE
	LBS/DAY	*	*	NEW	ONCE/WEEK	ONCE/MONTH	CALCULATED
Metals							
Aluminum, TR	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Copper, TR	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Iron, TR	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Non-Conventional							
Fluoride	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB

Effluent Limitations Tables- Outfalls #001, #002, #003, #03B:

PARAMETERS	Unit	Daily Max	Monthly Avg	previous permit limits	Minimum Sampling Frequency	Minimum Reporting Frequency	Sample Type
Physical							
Flow	MGD	*	*	*/*	ONCE/DAY	ONCE/MONTH	24 Hr. Tot
Conventional							
Chlorine, Total Residual	µg/L	*	*	209/104	ONCE/WEEK	ONCE/MONTH	GRAB
pH ǂ	SU	6.0-10.5	6.0-10.5	SAME	ONCE/WEEK	ONCE/MONTH	GRAB
Settleable Solids	mL/L/hr	*	*	NEW	ONCE/WEEK	ONCE/MONTH	COMPOSITE
Net Settleable Solids	MG/L	*	*	NEW	ONCE/WEEK	ONCE/MONTH	CALCULATED
TSS	MG/L	*	*	SAME	ONCE/WEEK	ONCE/MONTH	COMPOSITE
	LBS/DAY	*	*	SAME	ONCE/WEEK	ONCE/MONTH	CALCULATED
Net TSS	MG/L	*	*	NEW	ONCE/WEEK	ONCE/MONTH	CALCULATED
Metals							
Aluminum. TR	MG/L	*	*	SAME	ONCE/MONTH	ONCE/MONTH	COMPOSITE
Copper, TR	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	COMPOSITE
Iron, TR	MG/L	440	219	NEW	ONCE/MONTH	ONCE/MONTH	COMPOSITE
Non-conventional							
Fluoride	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Nutrients							
ammonia as N	MG/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	COMPOSITE
General Criteria							
Color/ Turbidity	PASS/ FAIL	PASS	PASS	NEW	ONCE/MONTH	ONCE/MONTH	VISUAL
Other							
Acute WET Test	TUa	3.3	-	EQUIVALENT	ONCE/YEAR	ONCE/YEAR	COMPOSITE

* Monitoring requirement only
§ This was labeled Water Treatment Additives by Type in the previous permit.
ǂ The facility will report the minimum and maximum pH values; pH is not to be averaged.
NEW Parameter not previously established in previous state operating permit.

DERIVATION AND DISCUSSION OF LIMITS:

INFLUENT MONITORING:

PHYSICAL:

Flow
Monitoring only. Measuring the flow of the intake will assist in sludge management. Understanding the volume of water associated with a certain volume of river solids can improve best management practices associated with reducing the amount of sludge generated during the treatment process.

Settleable Solids (SS) and Total Suspended Solids (TSS)
Monitoring only. Measuring the volume of river solids during intake can provide the amount of sludge being added and discharged from the facility. The permittee will be able to compare the river solids collected versus the amount of sludge generated during treatment. This will help with determining ways to reduce sludge generation in the plant and can potentially lead to intake credits in accordance with 40 CFR 122.45(g).

Metals and Fluoride
Monitoring only. Measuring the volume of these pollutants in the source water will help determine the facility's contribution to this pollutant in the effluent. The permittee will be able to compare the amount of these parameters collected versus the amount of generated during treatment. This will help with determining ways to reduce pollutant generation in the potable treatment system.

EFFLUENT MONITORING AND LIMITATIONS:

PHYSICAL:

Flow
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to ensure 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)
Monitoring only. There are no technology standards for this parameter for this type of facility. The water quality standards include Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. A reasonable potential analysis was conducted and determined that there is no reasonable potential for exceedances of the water quality standard. Previous permits included a schedule of compliance for chlorine. Construction of the upgraded wastewater treatment system, including optimization and system evaluation and modification was completed in 2015. Therefore, data collected prior to 2016 is not representative of the current effluent for this parameter. Using only representative data, no reasonable potential for exceedances associated with this parameter was found. However, because of the potential presence of this pollutant, and to ensure proper operation of the wastewater treatment system for this pollution, monitoring will continue. Data collected will be evaluated during the following permit renewal to determine is limits are necessary to protect water quality.

The permittee is required to use the most sensitive method for analyzing this parameter. The methods for TRC are not sensitive enough to reach values at or below the water quality standards previously calculated for this facility (104 µg/L monthly average). For this reason, 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. It is required the permittee conduct analyses in accordance with this method, or equivalent, and report actual analytical values.

pH

6.0 to 10.5 SU. Technology standards include an allowance for drinking water treatment plants at a range of 6.0-10.5 SU, so long as the permittee can demonstrate that the pH will not exceed 9.0 SU at the edge of the mixing zone [10 CSR 20-7.015(9)(I)1]. The water quality standard is set at a range of 6.5-9.0 SU [10 CSR 20-7.031(5)(E)]. The discharge directly enters the Missouri River, which has a large buffering capacity within the mixing zone. As demonstrated in the modeling and mixing evaluation of the receiving water, pH will equalize to 9.0 SU at the edge of the mixing zone. For this reason, the technology standard of 6.0-10.5 SU will be applied.

pH will also act as an indicator parameter for color and turbidity. As this facility has reasonable potential cause an excursion from the general criteria specifically for turbidity and color, pH will act as an indicator parameter. The primary substance resulting in the reasonable potential to violate general criteria is the lime residuals in the discharge. Lime is utilized to bind with minerals in the raw water that contribute to hardness. One purpose of lime is to increase the pH. As the lime residuals are discharged back to the Missouri River a pH limit can be tied to the lime residuals.

Settleable Solids (SS), **Total Suspended Solids (TSS), and Color**

Monitoring only and best management practices. Best management practices, the technology appropriate for this facility, are implemented within special conditions and are improving during the period covered by this permit; as the technology continues to improved, at this time, there are no technology or numeric water quality standards for these parameters.

Since there are no numeric standards, the permit writer is tasked with developing appropriate standards or controls to mitigate solids in the discharge. The following discussion walks through that iterative process for evaluating both technology controls and water quality considerations.

Technology-based Effluent Limitations

If the EPA has not promulgated technology-based effluent limitation guidelines, the permit writer is required to develop technology controls using best professional judgment. According to the EPA's NPDES Permit Writers' Manual, these controls can be developed by one of the following two methods: 1) transferring limits from an existing source (e.g. from other guidelines for similar sources or from existing NPDES permits); or 2) deriving case-by-case technology controls. When using the first method, the permit writer must determine whether the permit being considered applies to a facility that is similar in size and treatment. If the facility is similar, then those limits can be transferred to the permit easily. If not, then the permit writer must either provide significant justification for using those limits or must consider a different permit from a different facility that is more similar. When using the second method, the permit writer is required to complete the steps of a technology review outlined in the Clean Water Act. This review is as follows [40 CFR 125.3(d)(1)]:

For BPT requirements (all pollutants)

- The age of equipment and facilities involved*
- The process(es) employed*
- The engineering aspects of the application of various types of control techniques*
- Process changes*
- Non-water quality environmental impact including energy requirements*
- The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application

For BCT requirements (conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits
- The comparison of the cost and level of reduction of such pollutants from the discharge of POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources

For BAT requirements (toxic and non-conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The cost of achieving such effluent reduction

Recent permitting decisions for drinking water treatment plants in neighboring states allow the permit writer to use the first method to develop technology controls that satisfy the TBEL analysis. These decisions and the resulting TBEL's are detailed below.

The Department has a general permit for water treatment plant settling basins, MO-G64. This permit authorizes the discharge of filter backwash water and treatment residuals blowdown. This permit limits the parameter settleable solids to a daily maximum and monthly average of 1.0 mL/L/hr. However, the residuals being discharged at this site are not treated. According to the facility

diagram provided by the permittee and shown on page 4 of the factsheet, residuals drain directly from the water treatment basins to the Missouri River without undergoing any further treatment. The general permit only authorizes the discharge of treated sludge and is, therefore, not applicable to this discharge. TSS is not included in that general permit.

The permit writer has reviewed management practices at this facility, both historic, current and potential future management practices, to consider each set of best management practices (BMPs) as an independent technology for treatment of wastewater at this facility. Evaluation of BMPs as a technology, and the associated technology based effluent limitations evaluations, are authorized in federal regulation 40 CFR 122.44(k), which states: "Best management practices (BMPs) to control or abate the discharge of pollutants when: (1) Authorized under section 304(E) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; (3) Numeric effluent limitations are infeasible; or (4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA." Best management practices have been accepted as an appropriate technology for treatment of solids from water treatment plants and should be evaluated under the best professional judgement assessment for technology based effluent limitations.

In conjunction with the permittee, the permit writer has considered best management practices that will protect water quality. The best management practices are bolded below followed by further illustration on intent if necessary.

1. **Discharge from the treatment sedimentation basins (which include the pre-sedimentation basin, softening basin, stabilization basin and filtration basin (filter backwash)) shall be automated to occur continuously as practicable to mitigate short term loading of treatment residual solids in the receiving waterbody.** This may require lower rates of discharge in order to maintain constant and equalized sludge and filter backwash flows. This facility has already implemented automated discharge of residuals.
2. **The permittee will evaluate options during future plant upgrades to recycle a portion of the solids from each of the softening basins to the mixing basins for the pre-sedimentation basins and will work to reduce the production and discharge of treatment residuals.**
3. **The use of softening additives (e.g. lime) shall be reduced to no lower than required to treat water in order to meet drinking water standards. Excess lime, beyond what is necessary to sufficiently treat the water for human consumption, shall be eliminated from the treatment process.** The permittee will be required to evaluate the amount of lime necessary to sufficiently treat the water. The permittee will then be required to measure the amount of lime introduced during the softening process to determine if excess lime is being used. If excess lime is being used, the permittee shall reduce the amount of lime used to the amount necessary to sufficiently treat the water for human consumption. This will result in lower amounts of sludge generated and discharged.
4. **Clean outs (drainage, blowdown and filter backwash beyond normal operations) of treatment sedimentation basins shall be conducted on a rotating schedule to the extent practicable to minimize the amount of treatment residual solids discharged at any given time. Clean out events for the basins shall occur periodically throughout the calendar year. Each clean out event for a basin or set of basins shall occur over a multi-day timeframe in order to achieve low rates of discharge. Clean out of all basins simultaneously is prohibited.** Constant and equalized flows from clean out events will mitigate adverse environmental impacts and will assist in compliance with the general criteria discussed above.
5. **Discharge of chlorinated backwash water shall at all times meet the effluent limitations for total residual chlorine.** If the discharge from chlorinated backwash water will cause or contribute to exceedances of the effluent limitations for total residual chlorine, discharge of chlorinated backwash water shall cease until such time de-chlorination efforts have sufficiently reduced concentrations of total residual chlorine to below the effluent limitation.
6. **Surface intake water shall be monitored for amount of river solids. Federal regulation 40 CFR 122.45(g)(2) allows intake credits for river solids so long as the permittee can demonstrate that the discharge is substantially similar to the intake. The permittee shall determine whether separation of waste streams can occur at the site and shall implement methods to remove river solids prior to the treatment process. This permit authorizes the discharge of river solids that have been sufficiently removed prior to chemical treatment (raw river solids).** This means the permittee can separate the river solids prior to introduction of treatment additives and can discharge those river solids without limitation. This waste stream must be separated from all other sludge generated at the facility and cannot be commingled in the same discharge pipe. The permittee shall determine whether separation of waste streams can occur at the site and shall implement methods to remove river solids prior to the treatment process.
7. **The permittee evaluated options to reduce solids generation in the drinking water treatment process and alternative treatment and disposal methods for reducing solids loading to the waterbody.** The permittee considered the current cost for discharge of the waste stream as well as the cost for alternative treatment and disposal options. If there are any financially viable treatment and disposal options for the sludge generated at the site, the permittee will be required to employ those methods either fully or partially in order to reduce solids in the discharge. These BMPs reflect upgrades evaluated and implemented in response to these evaluations. The facility has evaluated treatment alternatives and disposal methods (2009 and 2019 BPJ analyses).
8. **Permittee will construct a new outfall to prevent visible color changes in the river associated with the discharge.** The permittee conducted an extensive evaluation of the river, flow and topography, to determine the optimum outfall

location. Based on the evaluation, the location identified within this permit as Outfall #03B was selected. Modeling and additional studies have demonstrated that this outfall will prevent observable color and turbidity changes from the discharge in the river.

In the 2009 and updated 2019 BJP study, the permittee evaluated technology options for this facility. They considered numerous technology options, which are listed in the table below.

TABLE 1. 2010 Residual Management BPJ Candidate Technological Residuals Disposal Alternatives Costs Update.

Residuals Management BPJ Study Alternatives	2009 ($)				2019 ($)			
	Capital ($M)	Annual O&M ($M)	Present Worth ($M)	Cost per Dry Ton ($/dt)	Capital ($M)	Annual O&M ($M)	Present Worth ($M)	Cost per Dry Ton ($/dt)
Direct discharge to the river (pre 2011 operation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct discharge to the river, effluent equalization BMP (2011 to present operation)	1.4	0.0	1.4	1.1	1.8	0.0	1.8	1.4
Chemical Solids Only								
Direct disposal to unlined monofill	109.3	1.4	112.0	85.0	140.9	1.8	145.0	109.0
Direct disposal to lined monofill	111.0	2.2	125.0	94.0	143.1	2.8	161.5	121.4
Mechanical dewatering and landfill	90.9	5.3	152.0	114.0	117.3	6.9	195.9	147.3
Monofill (unlined) and land application	109.3	6.2	178.0	134.0	140.9	8.0	229.6	172.6
Monofill (unlined) and mine reclamation	109.3	8.4	207.0	156.0	140.9	10.8	267.4	201.0
Mechanical dewatering and power plant emission scrubbing	89.2	3.0	119.0	89.0	115.1	3.9	153.5	115.4
Mechanical dewatering and recalcination	105.9	5.9	175.0	132.0	136.6	7.7	226.1	170.0
All Solids								
Direct disposal to unlined monofill	79.4	1.8	93.0	70.0	102.4	2.3	119.4	89.8
Direct disposal to lined monofill	82.4	3.3	115.0	87.0	106.3	4.2	148.6	111.7

For each of these options, the evaluation considered facility limitations, the age of the equipment at this facility, the processes that the facility currently employs and the processes that the facility would need to employ to implement alternative technologies, the construction, operation, maintenance and engineering aspects of the alternative technology, non-water quality environmental impacts, cost of the technology in relation to the effluent reduction benefits achieved, the reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits and the cost of the proposed technology pollutant reductions.

Option 1: Direct discharge without treatment (pre-2011 process)

Upon evaluation, this method includes minimal treatment of wastewater and little-to-no updates to facility equipment. The process remained largely unchanged for decades, as this water treatment facility. This process included “slug” or bulk discharges of solids, resulting in not only violations of the general criteria for color, but also with likely impacts to aquatic life and other beneficial uses of the river. The engineering requirements, operations and maintenance costs, as well as the process requirements, were all minimal for this option, as cleanout occurred when storage space became limited. This option was determined not to be viable during the 2011 permit and Option 2 was selected as the best technology at that time.

Option 2: Direct discharge with BMPs (see list above), including potable water treatment and assessment, solids reduction, and equalization of solids discharge (2014 process).

This option was selected as the best technology in 2011. As the facility dates back to 1902 and is located in a now-heavily populated area, expansion to allow for an on-site monofill is not feasible. This option includes process changes that can be done at the facility with the present infrastructure and site limitations. The processes employed include discharge of the solids, but the BMPs included in this option include automation of the solids cleanout, ensuring the most consistent and thereby lowest solids discharge. These improved solids handling measures can be accomplished by engineering the automated discharge system and incorporating it into the existing infrastructure without requiring physical expansion of the plant. The process changes are feasible even considering the age of the existing site and treatment cells. This option included internal process evaluations of the potable water treatment system, monitoring the water quality to ensure that chemicals were added in amounts appropriate to the need for potable water treatment. This process also required improved processes and equipment to equalize the discharge of solids, rather than the historic bulk discharge of solids. The processes and equipment

were changed as follows: Outfalls #001 and #002 are low and high river outfalls for filter plants 1 & 2 and the basins associated with the "old" plant. These outfalls discharge primarily filter backwash water from filter plants 1 &2. Primary settling basin #4 will discharge residuals via this outfall approximately 15 minutes once every 6 hours. There are three other primary settling basins associated with the old plant that are taken down and cleaned once per year and some residuals are discharged during these events. The vast majority of the residuals are generated and discharged via the four pre-sedimentation basins (pre-sedimentation). Outfall #003 is the discharge for all four pre-sedimentation basins and the settling basins for our A & B basins, or the "new" plant. The majority of residuals (approximately 90%) are created in the four pre-sedimentation basins and discharged via Outfall #003. The residuals generated from the pre-sedimentation basins are discharged according to programming set up in the plant's SCADA system, which automates the sludge discharge valves periodically for a set amount of time. This was identified as a Best Management Practice (BMP) in the Residual Management Best Professional Judgment Study completed in 2009 and incorporated into the MSOP. The intent of the discharge timing is to achieve as constant/uniform a discharge as possible for the facility.

Option 3: Direct discharge with enhanced BMPs, including potable water treatment and assessment, solids reduction, and equalization of solids discharge (2015-present process).

This was an equipment and process upgrade to Option 2. It incorporates all of the BMPs in Option 2, but included the installation of a high efficiency lime feed system to replace the older style lime slakers. The new system (RDP slaking system) optimizes the slaking process to ensure lime is fully reacted and efficiently fed via a precision dosing system. Thus, minimizing the amount of unreacted lime settling in the basins and being discharge. Lime, due its white color, is largely responsible for potential color changes in the river, and utilizing the RDP system helps mitigate this issue.

Option 4: Direct discharge with BMPs and outfall re-location, including potable water treatment and assessment, solids reduction, and equalization of solids discharge (2020 proposal).

This proposal evaluated technology available to reduce the presence of color in the discharge and equalization of the discharge of solids. As the facility dates back to 1902 and is located in a now-heavily populated area, expansion to allow for an on-site monofill is not feasible. This option includes process changes that can be done at the facility with the present infrastructure and site limitations. The processes employed include discharge of the solids, but the BMPs included in this option include automation of the solids cleanout, ensuring the most consistent and thereby lowest solids discharge. These improved solids handling measures can be accomplished by engineering the automated discharge system and incorporating it into the existing infrastructure without requiring physical expansion of the plant. The process changes are feasible even considering the age of the existing site and treatment cells. This new outfall location includes installation of new equipment, with the outfall located on the downstream side of wing dike, which also provides protection for the outfall, reducing long-term maintenance, and minimizing construction costs. The enhanced BMPs associated with this option also include continued evaluations of the potable water treatment processes, ensuring the minimum addition of softening and treatment chemicals (the primary source of added solids, not from the source river), and continued automated solids discharge, ensuring consistent and equalized discharges. This proposal includes a construction project with an estimated cost of $3,495,000, which has been determined to be a reasonable cost of technology improvement providing a significant reduction in solids concentrations in the discharge.

Option 5: Direct disposal to landfill/ land application site.

This option includes significant process changes, equipment changes, significant costs, significant non-water quality energy and environmental costs and was not found to reduce pollutants and their associated impacts to the river comparable to the associated costs of implementation. This facility, dating back to 1902, is located in Chesterfield, Missouri, which is in the St. Louis metropolitan area. Based on the age and location of this facility, expansion is not feasible. The processes in place for potable water treatment involves multiple large settling basins, as well as filtration systems and filter backwash. The existing processes manage solids, both from the river and any additives used in water treatment. These current processes have been updated to the extent practicable with the existing infrastructure and land available. To landfill or land apply the solids, rather than discharge, processes would have to be updated to remove solids and prepare for transportation. Drying solids would reduce the volume of material to land apply, but space is not available for drying these materials on-site. The saturated solids could be removed and transferred to land apply. Land for agricultural land application of water treatment plants is severely limited or unavailable in this area. Without any landfill options on-site or nearby, and based on the volume of solids generated and the distance to agricultural areas, transportation to appropriate land application fields is impractical as it would require multiple truckloads daily to haul solids 30-90 miles each direction. Transportation to permitted landfills is also unrealistic as landfills in this growing metropolitan area are already becoming full and are not willing to accept the significant load these solids will involve. The cost and environmental impact of the transportation alone for these options is prohibitive (see table above). Movement of this amount of solids would take numerous transportation trips daily, burning fuel and creating air emissions in a metropolitan area that struggles with Air Pollution Control ozone attainment/non-attainment standards. Beyond transportation environmental costs, the financial cost of transportation is also significant. Landfill space in this metropolitan area is limited, and deposition of the amount of solids generated would fill needed space rapidly. As such, all disposal options at this location are costly, impractical, sometimes infeasible, and do not provide comparable benefit when compared to the costs. Furthermore, the pollutants of concern are solids and color. Color is limited within this permit. Solids

reduction are provided by the selected technology and will be monitored to ensure adequate protection of the water waterbody, which is a naturally sediment-laden river.

Water Quality-based Effluent Limitations
As stated above, there are no numeric water quality standards for settleable solids or TSS. However, these two general criteria (narrative; below) from 10 CSR 20-7.031(4) are relevant to the discussion of these pollutants and shall be met at all times, including the mixing zone. The permit writer is tasked with evaluating these criteria relative to the technology-based best management practices.

(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"

Operating the discharge in accordance with the established technology-based best management practices will control the deposition of solids from the discharge to levels that will not cause or contribute to an excursion from this narrative water quality criterion. In addition, numeric effluent limits are included in this permit for indicator parameters tied to the pollutants resulting in a reasonable potential to violate this criteria. At these levels the solids contained in the discharge are not likely to cause putrescence, as they are not composed of organic materials. The discharge is not likely to cause or contribute to unsightly or harmful bottom deposits as it will be difficult to differentiate these solids from naturally occurring solids in the Missouri River, at these levels. Furthermore, the new outfall prevent settling or creating bottom deposits.

(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"

Again, adherence to technology-based best management practices will control solids in the discharge. The parameters of color and turbidity are now actively monitored and reported in accordance with the terms of this permit. Furthermore, the technology-based best management practices ensure that solids, the likely source of the color, are discharged constantly and uniformly throughout the day, rather than bulk or slug discharges. The management practices in place limit the amount of solids generated and the new outfall location will also prevent a visible plume associated with this discharge. The discharge is not likely to cause offensive odor, as the solids are not organic or odorous prior to discharge.

Furthermore, while there is not a numeric water quality standard for settleable solids or TSS, the source of these solids in this discharge is the softening and potable water treatment systems, which may cause elevated pH and discoloration of the discharge. Additionally, solids in high concentration may cause toxicity in aquatic life. As such, numeric limits established for pH and WET testing, as well as the color pass/fail criteria, will effectively limit the solids in this discharge.

Conclusion
After evaluating both technology and water quality, it is the permit writers best professional judgement that the technology-based best management practices and re-located outfall, as well as the inclusion of numeric and narrative effluent limits for indicator parameters will be protective of Missouri's water quality criteria. The technology assessments evaluated the age of the equipment and the facility, the processes employed, the engineering aspects of the options, the process changes needed, the non-water quality environmental impacts, the cost of the application of the technology in relation to the effluent reduction, and the reasonableness of the relationship between the cost of the reduction and the effluent reduction benefits, as listed above. This determination is based on Best Professional Judgment that requires the permit writer consider both the appropriate technology for the type of discharge based on all available information, and any unique factors relating to the specific discharge.

The following is a review of the rationale for the Department's determination:

- Space considerations. The Department has determined that insufficient land is available at this facility to reasonably and economically construct additional residuals treatment, such as clarifiers, day tanks, thickeners, dewatering facilities, or additional lagoons for storage.
- Location Considerations. The Department has determined that the location of this facility is in densely populated area, with both residential and commercial areas surrounding the facility. Increased heavy, commercial truck traffic to transport solids would be detrimental to the community.
- Age and Process Considerations. Treatment of water from the Missouri River to supply drinking water to Chesterfield and the St. Louis Metropolitan area began in 1904. Major upgrades throughout the life of the plant have resulted in a well maintained and functional water treatment facility. The Department has determined that the age and process employed are not conducive to adding additional residuals treatment.
- Cost. The overall costs for complete treatment and landfilled of the solids is over $140,000,000, which would result in significant cost increases to users. The Department determined that the imposition of additional costs to the ratepayers of Chesterfield and the surrounding metropolitan area is not warranted given the obstacles of space, location, age, and

processes at the facility. The cost of relocating the outfall is significant, but the Department determined that this cost is appropriate for the benefits provided, as this relocation is expected to mitigate violations of the general criteria.

- Upgrades. The permittee has significantly improved operations, by upgrading the treatment system to an automated discharge system that will equalize the discharge, upgraded to a precision dosing lime feed system to reduce the overall concentration of solids in the discharge. Furthermore, the current permit reflects the proposed upgrade to relocate the outfall subsurface in an optimum location evaluated to comply with the general criteria. These were significant upgrades specifically designed to reduce the impact of this discharge on the general criteria.

In considering these technology alternatives the permit writer has established seven best management practices under Special Condition #4 of the permit. The improved best management practices, including the current automated discharge mechanisms, reduced addition of solids and water treatment additives, as well as the re-location of the outfall to prevent visible color and turbidity changes, are the best practicable control technology currently available and the best conventional pollutant control technology.

Option 4 represents practicable and achievable practices to control the pollutants, namely solids, in the discharge. These best management practices meet the obligations of the Clean Water Act and Missouri Clean Water Law. With these best management practices, the permittee will be required to take measures to reduce the influence of the discharge on the receiving water body as well as reducing pollutants in the discharge. The permit writer will also require effluent monitoring of both settleable solids and total suspended solids. Monitoring these parameters will indicate the true concentrations of solids in the discharge and enable the permittee to quantify the performance of the control techniques. Furthermore, the permit writer has also implemented limits on color, a parameter directly associated with the amount of solids in the discharge.

METALS:
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the stream class and uses.

When ambient site specific hardness data is not available, facility provided hardness of 209 mg/L, which is used in the conversion below. Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). Conversion factors for Cd and Pb are hardness dependent. N/A means not applicable.

As the river may be a significant source of these metals, they are also included in the influent monitoring.

Aluminum, Total Recoverable
Monitoring only. There are no technology standards for this parameter for this type of facility. The water quality standards include Protection of Aquatic Life CMC = 750 µg/L. The permittee indicated that they believe this parameter is present in the discharge. Currently, there is no data to support an RPA determination as to whether the discharge has reasonable potential to cause or contribute to exceedances of the water quality standards. Monitoring is included to assess concentrations of aluminum in the discharge. Data collected will be evaluated during the following permit renewal to determine is limits are necessary to protect water quality.

Copper, Total Recoverable
Monitoring only. There are no technology standards for this parameter for this type of facility. The water quality standards include Protection of Aquatic Life CMC = 28.03 µg/L, based on the facility provided hardness of 209. The permittee indicated that they believe this parameter is present in the discharge. Currently, there is no data to support an RPA determination as to whether the discharge has reasonable potential to cause or contribute to exceedances of the water quality standards. Monitoring is included to assess concentrations of copper in the discharge. Data collected will be evaluated during the following permit renewal to determine is limits are necessary to protect water quality.

Iron, Total Recoverable
Monitoring with a daily maximum limit of 440 mg/L and a monthly average maximum limit of 219 mg/L. Ferric sulfate solution is used at this facility for solids removal. The permit writer has conducted a reasonable potential analysis and determined that this facility has reasonable potential to cause toxicity in the receiving stream.

Chronic AQL: 1000 µg/L
TR Conversion: AQL/Translator = 1000 / 1 = 1000
Chronic WLA: Ce = ((29.784 cfsDF + 8690 cfsMZ) * 1000 – (8690 cfsMZ * 85.22 background)) / 29.784 cfsDF = 267902.975
LTAc: WLAc * LTAc multiplier = 267902.975 * 0.527 = 141300.989 [CV: 0.6, 99th %ile]

Daily Maximum: MDL = LTA * MDL multiplier = 141300.989 * 3.114 = 440075.9 µg/L [CV: 0.6, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 141300.989 * 1.552 = 219359.1 µg/L [CV: 0.6, 95th %ile, n=4]

NUTRIENTS:

Ammonia, Total as Nitrogen
Monitoring only. There is no technology standard for this parameter. The water quality standards based on default stream conditions are as follows: early life stages present, salmonids absent; total ammonia nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU; background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Currently, there is no data to support an RPA determination as to whether the discharge has reasonable potential to cause or contribute to exceedances of the water quality standards. However, the permittee indicated on the permit renewal application that ammonia is used in the water treatment process for softening. Since the source for this parameter exists and is regularly dosed into the water, the permit writer used best professional judgment to require monitoring at this time. Data collected during the permit cycle can be used to evaluate compliance with water quality standards during the following permit renewal.

GENERAL CRITERIA:

Turbidity:
The discharge from this facility has been visible on Google Earth and other publicly available mapping programs. The discharge of water treatment plant residuals including river solids as well as water softening and water treatment solids. The actual flows from Outfall #001/#002 and Outfall #003 (and #03B) are 4.08 MGD and 6.12 MGD, respectively. These outfalls convey large flows which carry solids and are discharged at the surface of the river or very shallow points beneath the water surface. As this discharge currently violates the general criteria, limits are established with a schedule of compliance. Monitoring is required at all discharge points until the limits are effective at the end of the schedule of compliance. Turbidity has both a pass/fail threshold, as well as a technology assessment, with the intent of establishing a numeric correlation with the visible assessment. With this data, in the future, turbidity numeric limitations could be established. Re-location of Outfall #003 to Outfall #03B is expected to resolve turbidity issues as the discharge will be beneath the surface of the water. The permit writer has determined that there is no RP for turbidity when the outfall is moved. Therefore, turbidity is removed from Outfall #03B.

Color:
The discharge from this facility has been visible on Google Earth and other publicly available mapping programs. The discharge of water treatment plant residuals including river solids as well as water softening and water treatment solids. The actual flows from Outfall #001/#002 and Outfall #003 (and #03B) are 4.08 MGD and 6.12 MGD, respectively. These outfalls convey large flows which carry solids and are discharged at the surface of the river or very shallow points beneath the water surface. As this discharge currently violates the general criteria, limits are established with a schedule of compliance. Re-location of Outfall #003 to Outfall #03B is expected to resolve these issues. Monitoring is required at all discharge points until the limits are effective at the end of the schedule of compliance. The permit writer has determined that this facility has the reasonable potential to violate narrative water quality criteria in the receiving stream.

OTHER:

Fluoride
Monitoring only. Fluoride is commonly used in water treatment plants. As this potable water treatment plant includes fluoridation and, as such, monitoring for fluoride in the effluent is appropriate. Fluoride is also naturally occurring in the river; intake monitoring will be required as well.

Whole Effluent Toxicity (WET) Test, Acute

The permit writer has determined this facility has reasonable potential to cause toxicity in the receiving stream. Numeric limits for pH and WET testing can be tied to two primary concerns associated with lime solids discharge. First, as lime is naturally high in pH this parameter will translate to control of the quantity of residuals being discharged. As the high pH and high concentration of residual lime/sediments contribute to aquatic toxicity, numeric limits for Acute WET will translate to limitation of the quantity of residuals being discharged. Whole effluent toxicity can be affected by the solids concentrations in water. Gill function and motility are negatively affected when solids accumulate on gill surfaces or make feeding impossible. Suspended and dissolved solids affect organisms different ways, and different types of solids, such as salts or alternatively organic materials, behave differently when contacting different organisms. Dissolved salts can shift the ionic composition of water and cause organisms to

dehydrate due to cell adsorptions of salts. Lime, a calcium precipitate product, may negatively affect organisms by upregulating calcium ion (Ca++) channels, causing unregulated muscle activity, heart beat dysregulation, and ultimately fish death if exposure continues.

Acute AQL: 0.3 TUa
The AEC is (29.784 CFSdf / (8690 CFSzid +29.784 CFSdf)) = 9.1%
Acute WLA: Ce = ((29.784 cfsDF + 298 cfsZID) * 0.3 – (298 cfsZID * 0 background)) / 29.784 cfsDF = 3.302
LTAa: WLAa * LTAa multiplier = 3.302 * 0.321 = 1.06 [CV: 0.6, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 1.06 * 3.114 = 3.3 TU [CV: 0.6, 99th %ile]

10 CSR 20-7.015((9)(L)4.A. states the dilution series must be proportional. Each dilution was determined by multiplying or dividing 0.48 from the AEC and then each consecutive value. The dilution series is: 36.34%, 18.17%, 9.08%, 4.54%, and 2.27%.

- General Criteria is applicable at all times including within a mixing zone. Acute WET testing is being utilized as an indicator parameter for color and solids, both tied to the water treatment residuals being discharged.

Part V. Administrative Requirements

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

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

- ✓ If the Department issues the permit at this time, the effective period of the permit would be unnecessarily short. To ensure efficient use of Department staff time, reduce the Department's permitting back log, and to provide better service to the facility by avoiding another renewal application to be submitted in such a short time period, this operating permit will be issued for the maximum timeframe of five years and synced with other permits in the watershed at a later date.

Public Notice:
The Department shall give public notice a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with 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. http://dnr.mo.gov/env/wpp/permits/pn/index.html. The Department must issue public notice of a pending operating permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wishing to submit comments regarding this proposed operating permit, please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments. All comments must be in written form.

- ✓ The Public Notice period for this operating permit began on February 11, 2021 and ended on March 15, 2021. In finalizing this permit, the permit writer discussed the electronic data management with the information technology and database management team. IT staff notified the permit writer that settleable solids cannot be logged and recorded as a mass (lbs/day). As such, the daily mass calculation was removed from this permit, but settleable solids will continue to be a monitored pollutant as a concentration. TSS will be concentration and mass and will provide the necessary data to evaluate solids management. No other comments were received.

Date of Fact Sheet: October 15, 2020

Completed By:
Heather Peters, Environmental Supervisor
Missouri Department of Natural Resources
Water Protection Program
Operating Permits Section – Industrial Unit
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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

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

Part I – General Conditions
Section A – Sampling, Monitoring, and Recording

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RECEIVED
DEC 14 2015
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED 12/14/15	FEE SUBMITTED 8RB

Note ► PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- ☐ An operating permit for a new or unpermitted facility:
  Please indicate the original Construction Permit # _____
- ☑ An operating permit renewal:
  Please indicate the permit # MO- MO-0003727 Expiration Date 03/30/2016
- ☐ An operating permit modification:
  Please indicate the permit # MO-_____ Modification Reason: _____

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

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE
MO-AWC Central Plant		(314) 469-6050
		FAX (314) 205-1051
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
901 Hog Hollow Rd	Chesterfield	MO 63017

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
Missouri American Water Company	Philip.Wood@amwater.com	(314) 996-2351
		FAX (314) 432-7824
ADDRESS (MAILING)	CITY	STATE / ZIP CODE
727 Craig Rd	Creve Coeur	MO 63141

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

4. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
Same		FAX
ADDRESS (MAILING)	CITY	STATE / ZIP CODE

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE
Bob Fuerman	1703	(314) 469-6050
		FAX (314) 205-1051
ADDRESS (MAILING)	CITY	STATE / ZIP CODE
901 Hog Hollow Rd	Chesterfield	MO 63017

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
Martin Robison	Production Superintendent	(314) 469-6050
	E-MAIL ADDRESS Martin.Robison@amwater.com	FAX (314) 205-1051

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 NW ¼ NW ¼ Sec 36 T 46N R 4E StLoui County
UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 NW ¼ NW ¼ Sec 36 T 46N R 4E StLoui County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 NW ¼ NW ¼ Sec 36 T 46N R 4E StLoui County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC 4941 and NAICS 221310 002 – SIC _____ and NAICS _____
003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION (Complete all forms that are applicable.)

A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C or 2F. (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)	YES ☑	NO ☐
B.	Is application for storm water discharges only? If yes, complete Form C or 2F.	YES ☐	NO ☑
C.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C or 2F and D.	YES ☐	NO ☑
D.	Is wastewater land applied? If yes, complete Form I.	YES ☐	NO ☑
E.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES ☐	NO ☑

F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.

F. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions. (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME			
Howard Bend Levee District			
ADDRESS	CITY	STATE	ZIP CODE

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Philip Wood, Vice-President	(314) 996-2351
SIGNATURE	DATE SIGNED
	12/9/17

MO 780-1479 (07-14)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- ☑ Appropriate Fees?
- ☑ Map at 1" = 2000' scale?
- ☑ Signature?
- ☑ Form C or 2F, if applicable?
- ☐ Form D, if applicable?
- ☐ Form I (Irrigation), if applicable?
- ☐ Form R (Sludge), if applicable?
- ☐ Revised Nutrient Management Plan, if applicable?

INSTRUCTIONS FOR COMPLETING FORM A - APPLICATION FOR NONDOMESTIC PERMIT

1. Check which option is applicable. **Do not check more than one item.** Nondomestic permit refer to permits issued by the Department of Natural Resources' Water Protection Program for all **nondomestic** wastewater treatment facilities, including all industry, stormwater, and Class IA Concentrated Animal Feeding Operations (CAFO). **This includes all nondomestic wastewater treatment facilities that incorporate domestic wastewater into the operating permit.**

1.1 OPERATING PERMIT FEES

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department.

Discharges covered by section 644.052.4 RSMo. (Primary or Categorical Facilities)

$3,500 for a design flow under 1 mgd

$5,000 for a design flow of 1 mgd or more

A. Discharges covered by section 644.052.5 RSMo. (Secondary or Noncategorical Facilities).

$1,500 for a design flow under 1 million gallons per day (mpg)

$2,500 for a design flow of 1 mgd or more

SITE-SPECIFIC STORMWATER DISCHARGE FEES

A. $1,350 for a design flow under 1 mgd

B. $2,350 for a design flow of 1 mgd or more

CAFO OPERATING PERMIT FEES

A. $5,000 for site-specific permit (Class IA)

OPERATING PERMIT MODIFICATIONS are subject to the following fees:

A. Major Modifications - 25 percent of annual fee.

B. Minor Modifications (in accordance with 40 CFR 122.63, including transfers) - $100

Note: Facility name and address changes where owner, operator and continuing authority remain the same are not considered transfers.

Incomplete permit applications and/or related engineering documents will be returned by the department if they are not completed in the time frame established in a comment letter from the department to the owner. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

2. Facility - Provide the name by which this facility is known locally. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Also include the street address or location of the facility. If the facility lacks a street name or route number, give the names of the closest intersection, highway, county road, etc.

3. Owner - Provide the legal name and address of owner.

3.1 Prior to submitting a permit to public notice, the department shall provide the permit applicant 15 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check YES to review the draft permit prior to public notice. Check NO to waive the process and expedite the permit.

4. Continuing Authority - Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf or contact the appropriate Department of Natural Resources regional office.

5. Operator - Provide the name, certificate number and telephone number of the person operating the facility.

6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.

7.1 An outfall is the point at which wastewater is discharged. Outfalls should be given in terms of the legal description of the facility. Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, please use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

7.2 List only your primary Standard Industrial Classification, or SIC, and North American Industry Classification System code for each outfall. The SIC system was devised by the U.S. Office of Management and Budget to cover all economic activities. To find the correct SIC code, an applicant may check his or her unemployment insurance forms or contact the Missouri Division of Employment Security, 573-751-3215. The primary SIC code is that of the operation that generates the most revenue. If this information is not available, the number of employees or, secondly, production rate may be used to determine your SIC code. Additional information is on the Web for Standard Industrial Codes at www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System at www.census.gov/naics or contact the appropriate Department of Natural Resources regional office.

8. If you answer yes to A, B, C, D, or E, then you must complete and file the supplementary form(s) indicated. A U.S. Geological Survey 1" = 2,000' scale map must be submitted with the permit application showing all outfalls, the receiving stream and the location of the downstream property owners. This type of map is available on the Web at www.dnr.mo.gov/internetmapviewer/ or from the Missouri Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.

INSTRUCTIONS FOR COMPLETING FORM A - APPLICATION FOR NONDOMESTIC PERMIT (CONTINUED)

9. Please provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. Also, please indicate the location on the map. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way. For no discharge facilities, provide this information for the location where discharge would flow if there was one. For land application sites, include the owners of the land application sites and all adjacent landowners.

10. Signature - All applications must be signed as follows and the signature must be **original**:
    A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
    B. For a partnership or sole proprietorship, by a general partner or the proprietor.
    C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

This completed form, along with the applicable permit fees, should be submitted to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176. Submittal of an incomplete application may result in the application being returned. A map of the department's regional offices with addresses and phone numbers can be viewed at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, contact the appropriate regional office or the Department of Natural Resources' Water Protection Program, Permits and Engineering Section at 800-361-4827 or 573-751-6825.

For More Information
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-1300
www.dnr.mo.gov/env/wpp/index.html

RECEIVED
DEC 14 2015
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)

FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

MO-AWC Central Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO - 0003727

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 4941 B. SECOND

C. THIRD D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) NW ¼ NW ¼ SEC 36 T 46N R 4E St. Louis County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER.

OUTFALL NUMBER (LIST)	RECEIVING WATER
001	Missouri River
002	Missouri River
003	Missouri River

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS:

Public Water Supply

2.40

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, public sewers and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of 1. All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water runoff. 2. The average flow contributed by each operation. 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A
001 - 003 combined	Potable Water Treatment	12.5 MGD (27 MGD)	None	4A
Design flow for the discharge from Outfalls 001-002 is 14.5 MGD.				
Design flow for the discharge from Outfall 003 is 14.5 MGD.				
001 (primary) - 42" diameter concrete drain that carries filter backwash and settling basin wastes from Central Plant 1 & 2.				
002 (secondary) - serves as the high river discharge for Outfall #001.				
003 - 48" concrete & ductile iron pipe drain that carries filter backwash and settling basin wastes from Central Plant 3. Presedimentation basin wastes from all Plants also drain through Outfall 003.				
The distance between Outfalls 001/002 and 003 is 1500 feet.				
Some stormwater from the plant property is discharged to the river via Outfalls 001 - 003.				

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS, OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☒ **NO** *(GO TO SECTION 2.50)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(S) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		A. DAYS PER WEEK *(specify average)*	B. MONTHS PER YEAR *(specify average)*	A. FLOW RATE *(in mgd)*		B. TOTAL VOLUME *(specify with units)*		C. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

☐ **YES** *(COMPLETE B.)* ☒ **NO** *(GO TO SECTION 2.60)*

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINE EXPRESSED IN TERMS OF PRODUCTION *(OR OTHER MEASURE OF OPERATION)*?

☐ **YES** *(COMPLETE C.)* ☐ **NO** *(GO TO SECTION 2.60)*

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS *(list outfall numbers)*
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☒ **NO** *(GO TO 3.00)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS *(OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY EFFECT YOUR DISCHARGES)* YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

☐ **MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.**

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED. NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Strontium	in raw (MO River)		
Outfall 001-002	0.3 mg/L		
Outfall 003	6.1 mg/L		
2,4-D	in raw (MO River)		
Outfall 001-002	0.1 ug/L		
Outfall 003	0.2 ug/L		

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON A RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

☐ **YES** *(IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.)* ☒ **NO** *(GO TO 3.20)*

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☒ **YES** *(LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.)* ☐ **NO** *(GO TO 3.30)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
American Water Central Lab	1115 S Illinois St Belleville, Il 62220	618-235-3600	Aluminum Barium Boron Iron Magnesium Manganese Molybdenum Nitrate Nitrite Strontium Sulfate TKN Phosphorus (Total)

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER (AREA CODE AND NUMBER
Phillip Wood, Vice President - Operations	314-996-2351
SIGNATURE (SEE INSTRUCTIONS)	**DATE SIGNED**
	12/9/15

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages.
SEE INSTRUCTIONS.

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 001-002

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT						D. NO. OF ANALYSES	3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*			A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand *(BOD)*	**											
B. Chemical Oxygen Demand *(COD)*	**											
C. Total Organic Carbon *(TOC)*	**											
D. Total Suspended Solids *(TSS)*	64						1	mg/L				
E. Ammonia *(as N)*	**											
F. Flow	VALUE 7.7		VALUE		VALUE			MGD		VALUE		
G. Temperature *(winter)*	VALUE **		VALUE		VALUE			°C		VALUE		
H. Temperature *(summer)*	VALUE **		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM 8.9	MAXIMUM	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*			A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Bromide (24959-67-9)		X												
B. Chlorine Total Residual	X		0.0						1	mg/L				
C. Color	X		4						1	Color Units				
D. Fecal Coliform	X		4						1	cfu				
E. Fluoride (16984-48-8)	X		0.645						1	mg/L				
F. Nitrate–Nitrite *(as N)*	X		2.0						1	mg/L				

**Not required to test per MDNR

CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (1) CONCENTRATION	A. MAXIMUM DAILY VALUE (2) MASS	B. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	B. MAXIMUM 30 DAY VALUE (if available) (2) MASS	C. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	C. LONG TERM AVRG. VALUE (if available) (2) MASS	D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE (1) CONCENTRATION	A. LONG TERM AVRG. VALUE (2) MASS	B. NO. OF ANALYSES
G. Nitrogen Total Organic *(as N)*	X		< 1						1	mg/L				
H. Oil and Grease		X												
I. Phosphorus *(as P)* Total (7723-14-0)	X		0.1						1	mg/L				
J. RADIOACTIVITY														
(1) Alpha Total	**													
(2) Beta Total	**													
(3) Radium Total	**													
(4) Radium 226 Total	**													
K. Sulfate *(as SO^4)* (14808-79-8)	X		184.1						1	mg/L				
L. Sulfide *(as S)*		X												
M. Sulfite *(as SO^3)* (14265-45-3)		X												
N. Surfactants		X												
O. Aluminum Total (7429-90-5)	X		0.07						1	mg/L				
P. Barium Total (7440-39-3)	X		<0.1						1	mg/L				
Q. Boron Total (7440-42-8)		X	0.104						1	mg/L				
R. Cobalt Total (7440-48-4)		X												
S. Iron total (7439-89-6)	X		3.13						1	mg/L				
T. Magnesium Total (7439-95-4)	X		20						1	mg/L				
U. Molybdenum Total (7439-98-7)	X		<0.1						1	mg/L				
V. Manganese Total (7439-96-5)	X		0.016						1	mg/L				
W. Tin Total (7440-31-5)		X												
X. Titanium Total (7440-32-6)		X												

**Not required to test per MDNR

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages.
SEE INSTRUCTIONS.

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 003

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANAL-YSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANAL-YSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand *(BOD)*	**											
B. Chemical Oxygen Demand *(COD)*	**											
C. Total Organic Carbon *(TOC)*	**											
D. Total Suspended Solids *(TSS)*	5600						1	mg/L				
E. Ammonia *(as N)*	**											
F. Flow	VALUE 11.55		VALUE		VALUE			MGD		VALUE		
G. Temperature *(winter)*	VALUE **		VALUE		VALUE			°C		VALUE		
H. Temperature *(summer)*	VALUE **		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM 9.95	MAXIMUM	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BE-LIEVED PRE-SENT	B. BE-LIEVED AB-SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANAL-YSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANAL-YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Bromide (24959-67-9)		X												
B. Chlorine Total Residual	X		0.0						1	mg/L				
C. Color	X		6							Color Units				
D. Fecal Coliform	X		< 2						1	cfu				
E. Fluoride (16984-48-8)	X		0.48						1	mg/L				
F. Nitrate–Nitrite *(as N)*	X		1.86						1	mg/L				

**Not required to test per MDNR

Outfall 003

CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" A. BELIEVED PRESENT	2. MARK "X" B. BELIEVED ABSENT	3. EFFLUENT A. MAXIMUM DAILY VALUE (1) CONCENTRATION	A. MAXIMUM DAILY VALUE (2) MASS	B. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	B. MAXIMUM 30 DAY VALUE (if available) (2) MASS	C. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	C. LONG TERM AVRG. VALUE (if available) (2) MASS	D. NO. OF ANALYSES	4. UNITS A. CONCENTRATION	4. UNITS B. MASS	5. INTAKE (optional) A. LONG TERM AVRG. VALUE (1) CONCENTRATION	5. INTAKE (optional) A. LONG TERM AVRG. VALUE (2) MASS	5. INTAKE (optional) B. NO. OF ANALYSES
G. Nitrogen Total Organic *(as N)*	X		< 1						1	mg/L				
H. Oil and Grease		X												
I. Phosphorus *(as P)* Total (7723-14-0)	X		0.7						1	mg/L				
J. RADIOACTIVITY														
(1) Alpha Total	**													
(2) Beta Total	**													
(3) Radium Total	**													
(4) Radium 226 Total	**													
K. Sulfate *(as SO^4)* (14808-79-8)	X		170.9						1	mg/L				
L. Sulfide *(as S)*		X												
M. Sulfite *(as SO^3)* (14265-45-3)		X												
N. Surfactants		X												
O. Aluminum Total (7429-90-5)	X		54.11						1	mg/L				
P. Barium Total (7440-39-3)	X		2.7						1	mg/L				
Q. Boron Total (7440-42-8)	X		0.257						1	mg/L				
R. Cobalt Total (7440-48-4)		X												
S. Iron total (7439-89-6)	X		100.94							1 mg/L				
T. Magnesium Total (7439-95-4)	X		133						1	mg/L				
U. Molybdenum Total (7439-98-7)	X		<0.1						1	mg/L				
V. Manganese Total (7439-96-5)	X		4.861						1	mg/L				
W. Tin Total (7440-31-5)		X												
X. Titanium Total (7440-32-6)		X												

**Not required to test per MDNR

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM C – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS

All blanks must be filled in when the application is submitted to the appropriate Regional Office (see map). The form **must be signed** as indicated.

This application is to be completed only for wastewater facilities with a discharge. Include any facility it is possible to discharge from even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, then sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility - By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

2.00 List in descending order of significance the four digit Standard Industrial Classification (SIC) codes that best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words.

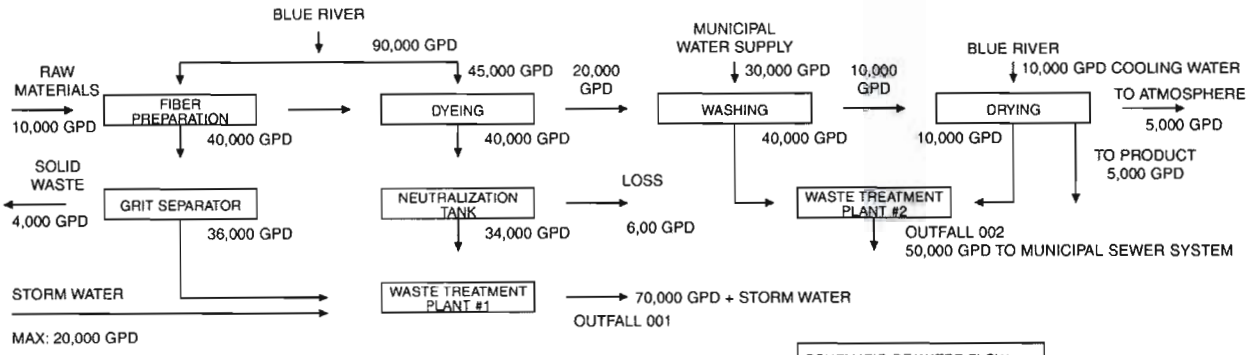
SIC code numbers are descriptions that may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, that is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, contact the Missouri Department of Natural Resources Regional Office in your area (see map).

2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant, location or sufficient information so that it may be located by the Missouri Clean Water Commission staff.

2.20 Receiving Water – the name of the stream to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

2.30 Self-explanatory.

2.40 A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and storm water runoff. You may group similar operations into a single unit labeled to correspond to the more detailed listing. The water balance should show average and maximum flows. Show all significant losses of water to products, atmosphere, discharge and public sewer systems. You should use actual measurements whenever available; otherwise, use your best estimate. An example of any acceptable line drawing appears below.



B. List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or a "distillation tower"). You may estimate the flow contributed by each source if no data is available, and for storm water, you may use any reasonable measure of duration, volume or frequency. For each treatment unit, indicate its size, flow rate and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table A to fill in column 3B for each treatment unit. Insert "XX" into column 3B if no code corresponds to a treatment unit you list.

TABLE A – CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

1-A . . . . . Ammonia Stripping	1-M . . . . . Grit Removal
1-B . . . . . Dialysis	1-N . . . . . Microstraining
1-C . . . . . Diatomaceous Earth Filtration	1-O . . . . . Mixing
1-D . . . . . Distillation	1-P . . . . . Moving Bed Filters
1-E . . . . . Electrodialysis	1-Q . . . . . Multimedia Filtration
1-F . . . . . Evaporation	1-R . . . . . Rapid Sand Filtration
1-G . . . . . Flocculation	1-S . . . . . Reverse Osmosis (Hyperfiltration)
1-H . . . . . Flotation	1-T . . . . . Screening
1-I . . . . . Foam Fractionation	1-U . . . . . Sedimentation (Settling)
1-J . . . . . Freezing	1-V . . . . . Slow Sand Filtration
1-K . . . . . Gas-Phase Separation	1-W . . . . . Solvent Extraction
1-L . . . . . Grinding (Comminutors)	1-X . . . . . Sorption

CHEMICAL TREATMENT PROCESSES

2-A . . . . . Carbon Absorption	2-G . . . . . Disinfection (Ozone)
2-B . . . . . Chemical Oxidation	2-H . . . . . Disinfection (Other)
2-C . . . . . Chemical Precipitation	2-I . . . . . Electrochemical Treatment
2-D . . . . . Coagulation	2-J . . . . . Ion Exchange
2-E . . . . . Dechlorination	2-K . . . . . Neutralization
2-F . . . . . Disinfection (Chlorine)	2-L . . . . . Reduction

BIOLOGICAL TREATMENT PROCESSES

3-A . . . . . Activated Sludge	3-E . . . . . Pre-Aeration
3-B . . . . . Aerated Lagoons	3-F . . . . . Spray Irrigation/Land Application
3-C . . . . . Anaerobic Treatment	3-G . . . . . Stabilization Ponds
3-D . . . . . Nitrification-Denitrification	3-H . . . . . Trickling Filtration

OTHER PROCESSES

4-A . . . . . Discharge to Surface Water	4-C . . . . . Reuse/Recycle of Treated Effluent
4-B . . . . . Ocean Discharge Through Outfall	4-D . . . . . Underground Injection

SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A . . . . . Aerobic Digestion	5-M . . . . . Heat Drying
5-B . . . . . Anaerobic Digestion	5-N . . . . . Heat Treatment
5-C . . . . . Belt Filtration	5-O . . . . . Incineration
5-D . . . . . Centrifugation	5-P . . . . . Land Application
5-E . . . . . Chemical Conditioning	5-Q . . . . . Landfill
5-F . . . . . Chlorine Treatment	5-R . . . . . Pressure Filtration
5-G . . . . . Composting	5-S . . . . . Pyrolysis
5-H . . . . . Drying Beds	5-T . . . . . Sludge Lagoons
5-I . . . . . Elutriation	5-U . . . . . Vacuum Filtration
5-J . . . . . Flotation Thickening	5-V . . . . . Vibration
5-K . . . . . Freezing	5-W . . . . . Wet Oxidation
5-L . . . . . Gravity Thickening	

2.40 C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Maximum Daily" columns. Report the average of all daily values measured during days when discharge occurred within the last year in the "Long Term Average" columns.

2.50 A. All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by BPT, BCT, or BAT guidelines. If you are unsure whether you are covered by a promulgated effluent guideline, check with your Missouri Department of Natural Resources' Regional Office. You must check yes if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check no.

B. An effluent guideline is expressed in terms of production (or other measure of operation) if the limitations are expressed as mass of pollutant per operational parameter; for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked yes to Item III-B. The production information requested here is necessary to apply effluent guidelines to your facility and you may not claim it as confidential. However, you do not have to indicate how the reported information was calculated.

Report quantities in the units of measurement used in the applicable effluent guideline. The figures provided must be a measure of actual operation over a one month period, such as the production for the highest month during the last twelve months, or the monthly average production for the highest year of the last five years, or other reasonable measure of actual operation, but may not be based on design capacity or on predictions of future increases in operation.

2.60 A. If you check yes to this question, complete all parts of the chart, or attach a copy of any previous submission you have made containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

3.00 These items require you to collect and report data on the pollutants discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

GENERAL INSTRUCTIONS. Part A requires you to report at least one analysis for each pollutant listed. Part B requires you to mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2A or 2B, Part B) base don your best estimate, and test for those which you believe to be present. Part C requires you to list any of a group of pollutants which you believe to be present, with a brief explanation of why you believe it to be present. (See specific instructions on the form and below for Parts A through C).

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as a concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper. (Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Part B).

CONCENTRATION

ppm . . . . . parts per million
mg/1 . . . . . miligrams per liter
ppb. . . . . parts per billion
µg/1 . . . . . micrograms per liter

MASS

lbs . . . . . pounds
ton . . . . . tons (English tons)
mg . . . . . milligrams
g . . . . . grams
kg . . . . . kilograms
T . . . . . tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "number of analyses" columns (columns 2A and 2B, Part A, and columns 3A and 3D, Part B). The Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" columns (column 2C, Part A, and column 3C, Part B), and the total number of daily values under the "Number of Analyses" columns (column 2D, Part A, and column 3D, Part B). Also, determine the average of all daily values taken during each calendar month, and report the highest average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Values" columns (column 2B, Part A, and column 3B, Part B).

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLE. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. A combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the Intake columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)

2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)

3. When applicable, a demonstration of the extent to which the pollutants in the intake vary physically, chemically, or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

3.00 Part A must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Missouri Department of Natural Resources may waive the requirements to test for one or more of these pollutants, upon a determination that testing for the pollutant(s) is not appropriate for your effluent.

Use composite samples for all pollutants in this part, except use grab samples for pH and temperature. See discussion in instructions above for definitions of the columns in Part A. The "Long Term Average Values" column (column 2C) and "Maximum 30 Day Values" column (column 2B) are not compulsory but should be filled out if data is available.

3.00 Part B must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff.

Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease and fecal coliform. The Long Term Average Values column (column 3C) and Maximum 30 Day Values column (column 3B) are not compulsory but should be filled out if data is available.

3.00 List any pollutants in Table B that you believe to be present and explain why you believe them to be present. No analysis is required, but if you have analytical data, you must report it.

TABLE B – TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

TOXIC POLLUTANT	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Asbestos	Dichlorvos	Naled
	Diethyl amine	Napthenic acid
HAZARDOUS SUBSTANCES	Dimethyl amine	Nitrotoluene
	Dintrobenzene	Parathion
Acetaldehyde	Diquat	Phenolsulfonate
Allyl alcohol	Disulfoton	Phosgene
Allyl chloride	Diuron	Propargite
Amyl acetate	Epichlorohydrin	Propylene oxide
Aniline	Ethion	Pyrethrins
Benzonitrile	Ethylene diamine	Quinoline
Benzyl chloride	Ethylene dibromide	Resorcinol
Butyl acetate	Formaldehyde	Strontium
Butylamine	Furfural	Strychnine
Captan	Guthion	Sytrene

TABLE B – (continued)

HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Carbaryl	Isoprene	2,4,5-T (2,4,5-Trichloro-phenoxyacetic acid)
Carbofuran	Isopropanolamine	TDE (Tetrachlorodiphenyl ethane)
Carbon disulfide	Kelthane	2,4,5-TP (2-(2,4,5-Trichloro-phenoxy) propanoic acid)
Chlorpyrifos	Kepone	Trichlorofon
Coumaphos	Malathion	Triethanolamine
Cresol	Mercaptodimethur	Triethylamine
Crotonaldehyde	Methoxychlor	Trimethylamine
Cyclohexane	Methyl mercaptan	Uranium
2,4-D (2,4-Dichloro-phenoxyacetic acid)	Methl methacrylate	Vanadium
Diazinon	Methyl parathion	Vinyl acetate
Dicamba	Mevinphos	Xylene
Dichlobenil	Mexacarbate	Xylenol
2,2-Dichloropropionic acid	Monethyl amine	Zirconium
	Monomethyl amine	

3.10 Self-explanatory. Additional information may be requested by the Missouri Department of Natural Resources.

3.20 Self-explanatory.

3.30 The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application . . . shall upon conviction, be punished by a fine of no more than $10,000 or by imprisonment for not more than six months, or both."

All applications must be signed as follows and the signature must be original:

A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.

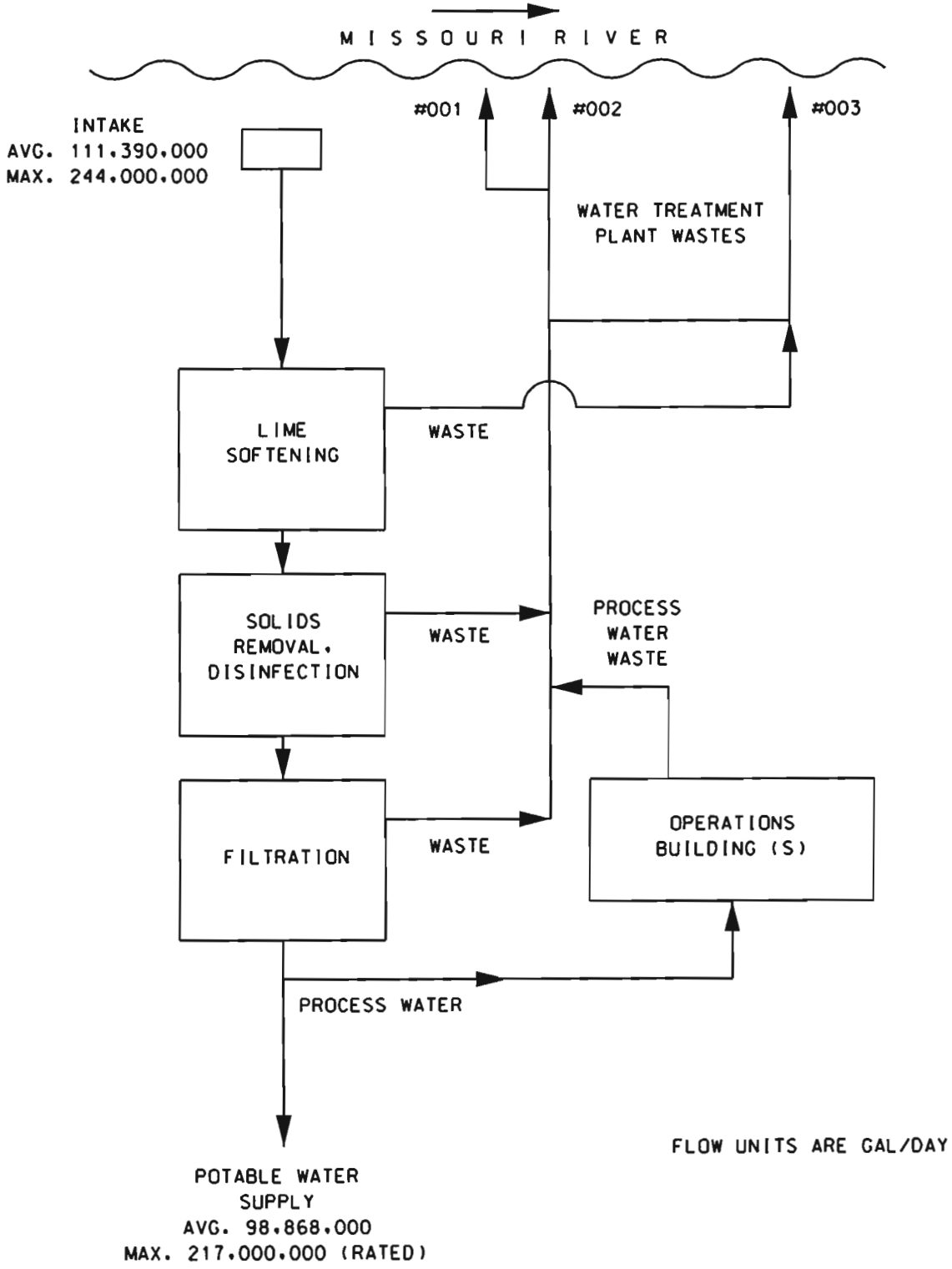
B. For a partnership or sole proprietorship, by a general partner or the proprietor.

C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

MISSOURI AMERICAN WATER

ST. LOUIS COUNTY OPERATIONS CENTRAL PLANT

FILE NO. _____
INDEX NO. _____
ISSUED DATE 2/2010
AMENDED DATE _____



MO-0003727
FACILITY LINE DRAWING
CAD /STLOUIS/PRODUCTION/CENTRAL PLANT/MANUAL/CHEM/CMC02M.DGN


St. Louis Central Plant
1 Inch = 2,000 feet
LEVEE
24
19
26
35
25
31
36
FISH ISLAND
MISSISSIPPI RIVER
Golf Course
ARROWHEAD AIRPORT
Park
Outfalls #003
Outfalls #001-002
COUNTY WATERWORKS
Central Plant 2
Central Plant 1
Howard Bend
MARYLAND HEIGHTS EXPRESSWAY
Floodgate
ST LOUIS CITY WATERWORKS
RD ON LEVEE
Legend
MAWC Plant Locations
MAWC Outfalls
Facility Boundaries
MISSOURI AMERICAN WATER
GIS SERVICES