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-0004847
Owner:	Vicinity Energy, LLC
Address:	100 Franklin Street, 2nd Floor, Boston, MA 02110
Continuing Authority:	Vicinity Energy Kansas City, Inc.
Address:	115 Grand Blvd., Kansas City, MO 64106
Facility Name:	Vicinity Energy Kansas City, Inc.
Facility Address:	115 Grand Blvd., Kansas City, MO 64106
Legal Description:	SW ¼, Sec. 32, T50N, R33W, Jackson County
UTM Coordinates:	#001: X= 363403, Y= 4330696 #INT: X= 363352, Y= 4330693
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) WBID # 0356, 303(d) list
USGS Basin & Sub-watershed No.:	10300101-0301 (Buckeye Creek-Missouri River)

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

FACILITY DESCRIPTION

OUTFALL #001 – Steam and air conditioning supply; SIC #4961; Non-contact once-through 95% water for cooling; 5% is used in the ultrafiltration and reverse osmosis process; RO and UF wastewater is discharged.
Design flow is 82.0 million gallons per day (MGD). Average flow is 7.60 MGD.

OUTFALL #INT – Intake structure on Missouri River for non-contact once-though cooling water. Intake flow averages 7.6 MGD; maximum 29.3 MGD

Domestic wastewater is discharged to the city POTW. This facility does not require a certified wastewater operator.

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.

December 1, 2019	May 1, 2020	November 1, 2020	April 1, 2022
Effective Date	Modification Date	Modification Date	Modification Date

November 30, 2024
Expiration Date

Chris Wieberg
Chris Wieberg, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001 *main outfall*	**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-2 must be achieved as soon as possible but no later than **December 1, 2021**. These interim effluent limitations are effective beginning **December 1, 2019** and remain in effect through **November 30, 2021** 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
LIMIT SET: M						
PHYSICAL						
Flow	MGD	*		*	once/month	24 hr. total
Temperature Cap (notes 1, 3)	°F	90		90	once/month	calculation
Temperature Change (notes 2, 3)	°F	5		5	once/month	calculation
CONVENTIONAL						
Chlorine, Total Residual	µg/L	*		*	once/month	grab
Total Suspended Solids – End of Pipe ◊	mg/L	*		*	once/month	grab
Total Suspended Solids – Net ◊	mg/L	100		30	once/month	grab
METALS						
Aluminum, Total Recoverable	µg/L	*		*	once/month	grab
Arsenic, Total Recoverable	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	*		*	once/month	grab
Iron, Total Recoverable	µg/L	*		*	once/month	grab
OTHER						
Chloride	mg/L	*		*	once/month	grab
Fluoride	mg/L	*		*	once/month	grab
Sulfate	mg/L	*		*	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JANUARY 28, 2020.
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALL #001 *main outfall*	**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 **December 1, 2021** 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
LIMIT SET: M						
PHYSICAL						
Flow	MGD	*		*	once/month	24 hr. total
Temperature Cap (notes 1, 3)	°F	90		90	once/month	calculation
Temperature Change (notes 2, 3)	°F	5		5	once/month	calculation
CONVENTIONAL						
Chlorine, Total Residual	µg/L	*		*	once/month	grab
Total Suspended Solids – End of Pipe ◊	mg/L	*		*	once/month	grab
Total Suspended Solids – Net ◊	mg/L	100		30	once/month	grab
METALS						
Aluminum, Total Recoverable	µg/L	*		*	once/month	grab
Arsenic, Total Recoverable	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	75.8		28.1	once/month	grab
Iron, Total Recoverable	µg/L	*		*	once/month	grab
OTHER						
Chloride	mg/L	*		*	once/month	grab
Fluoride	mg/L	*		*	once/month	grab
Sulfate	mg/L	*		*	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; 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)

OUTFALL #INT *intake*	**TABLE A-3** **INFLUENT MONITORING REQUIREMENTS**

The permittee is authorized to intake from the structure as specified in this permit. The final monitoring requirements shall become effective on **December 1, 2019** and remain in effect until expiration of the permit.

EFFLUENT PARAMETERS	UNITS	FINAL LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M						
PHYSICAL						
Flow (intake)	MGD	*		*	once/day	calculated
Temperature	°F	*		*	once/day	measured
CONVENTIONAL						
Total Suspended Solids – Intake ◊	mg/L	*		*	once/month	grab
METALS						
Aluminum, Total Recoverable	µg/L	*		*	once/month	grab
Arsenic, Total Recoverable	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	*		*	once/month	grab
Iron, Total Recoverable	µg/L	*		*	once/month	grab
OTHER						
Chloride	mg/L	*		*	once/month	grab
Fluoride	mg/L	*		*	once/month	grab
Sulfate	mg/L	*		*	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JANUARY 28, 2020.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

Note 1: $T_{cap} = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e)]$ (maximum temperature at the end of the mixing zone)

$Q_s/4$ = the receiving stream flow in CFS divided by 4 or the flow represented in the cross-sectional area of the receiving stream divided by 4 in accordance with [10 CSR 20-7.031(4)(D)6.]
Q_e = effluent flow in CFS
T_s = Receiving stream's ambient temperature. Daily monitoring requirement (°F); the ambient stream temperature can be used or, for many facilities, the intake temperature can be used to determine stream's temperature. This requirement is used to calculate the change in temperature (ΔT) and the maximum temperature (T_{cap}). A facility's intake temperature can be used for this parameter if the facility believes that it is representative of the receiving stream's actual temperature.
T_e = Temperature of the effluent. Daily monitoring requirement (°F); effluent temperature is the measured temperature of the discharge and is used to determine the change in temperature (ΔT) and the maximum temperature (T_{cap}).

Note 2: $\Delta T = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e)] - T_s$ (maximum change in temperature)

$Q_s/4$ = the receiving stream flow in CFS divided by 4 or the flow represented in the cross-sectional area of the receiving stream divided by 4 in accordance with [10 CSR 20-7.031(4)(D)6.]
Q_e = effluent flow in CFS
T_s = Receiving stream's ambient temperature. Daily monitoring requirement (°F); the ambient stream temperature can be used or, for many facilities, the intake temperature can be used to determine stream's temperature. This requirement is used to calculate the change in temperature (ΔT) and the maximum temperature (T_{cap}).
T_e = Temperature of the effluent. Daily monitoring requirement (°F); effluent temperature is the measured temperature of the discharge and is used to determine the change in temperature (ΔT) and the maximum temperature (T_{cap}).

Note 3: The facility will upload the spreadsheet used to calculate Tcap and temperature change; values obtained for stream flow or stream temperature. The facility will keep records regarding where, when, and how these values were obtained for a minimum of five years and shall upload the daily DMR information as an attachment into the eDMR system.

◊ Net total suspended solids shall be calculated using the intake total suspended solids measurement minus the effluent (gross) total suspended solids measurement. The net TSS monthly average shall be calculated by averaging the daily maximum net values calculated using this equation. If the intake on the Missouri River is not used for source water, a net value cannot be calculated and the facility will enter the same value(s) for gross and net TSS. If the intake is not used, the facility will report "monitoring not required" on the eDMR forms.

B. SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed per 40 CFR 122.47. 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 December 1, 2020.

3. Within 2 years of the effective date of this permit, the permittee shall attain compliance with the final effluent limits at outfall #001 for total recoverable copper.

4. See additional items due in Special Conditions D; numbers 1 through 3.

5. All permittees must submit progress 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 and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. In accordance with 125.98(b)(2), this permit implements Best Technology Available (BTA) requirements to prevent impingement mortality per 40 CFR 125 Subpart J. The BTA determination is modified traveling screens as described at 40 CFR 125.92(s) for this facility. The following shall be completed by November 30, 2023, listed below or as soon as practicable in accordance with 40 CFR 125.98(c):
   (a) The facility shall provide a suitable operational traveling screen with fish return for Bay 3 or assure water at this intake is blocked to prevent impingement.
   (b) The facility shall install a fish return system on all of the operational intake's traveling screens.
   (c) All screens shall be constructed of 3/8 inch smooth woven wire mesh. Screens shall be maintained such that snags and holes are repaired as soon as practicable.
   (d) Operational measures shall be implemented in accordance with 40 CFR 125.92(w) as necessary.

2. Annual reports are due to the department on February 28th of each year for the calendar year term of the permit ending December 31; which must include the following:
   (a) Annual Certification Report in accordance with 40 CFR 125.97(c) to fulfil department requirements at 40 CFR 125.98(k).
   (b) Status update for items under 1. and 4. in this section; including operational status after implementation.
   (c) Record of Visual or Remote Inspections conducted weekly in accordance with 40 CFR 125.96(e).

3. 180 days prior to permit expiration, the following are due to the Department with the application for renewal materials.
   (a) Cooling water intake structure data as required by 40 CFR 122.21(r)(3)(iii)
   (b) Cooling water system data as required by 40 CFR 122.21(r)(5)(i), (ii), and (iii)
   (c) Chosen (continued or new) method of compliance with impingement mortality standard as required by 40 CFR 122.21(r)(6) et seq.
   (d) Provide any and all communications with the United States Fish and Wildlife Services or Missouri Department of Conservation, and any other communications regarding the aquatic organisms at the site with any state or federal agency in compliance with 40 CFR 122.21(r)(1)(ii)(C) and 40 CFR 122.21(r)(1)(ii)(H).

4. By June 30, 2026, the following are due to the Department:
   (a) Provide results of a two-year impingement technology performance optimization study in accordance with the approved 2016 sampling and analysis plan, implemented per 40 CFR 125.98(e), and following 40 CFR 122.21(r)(6)(ii). The study must allow for at least once per month sampling.

5. Per 40 CFR 125.98(b)(1): "Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act."

6. If the facility ever discharges greater than 82 MGD, the facility is required to obtain an antidegradation review to increase the design flow per 10 CFR 20-7.031(3).

7. Should the facility ever withdraw greater than 125 MGD, the facility is required to initiate and complete full entrainment studies as required by 40 CFR 122.21(r)(7) and (r)(9) through (r)(13).

8. 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.

9. Electronic Discharge Monitoring Report (eDMR) Submission System
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. Standard Conditions Part I, Section B, #7 indicates the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:

D. SPECIAL CONDITIONS (CONTINUED)

(1) CWA Section 316(b) Annual Reports; and
(2) Schedule of compliance reporting; and
(3) Schedule of requirements reporting; and
(4) Any additional report required by the permit excluding bypass reporting.
(5) After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.

(c) The following shall be submitted electronically after such a system has been made available by the Department:
(1) General Permit Applications/Notices of Intent to discharge (NOIs);
(2) Notices of Termination (NOTs);
(3) No Exposure Certifications (NOEs);
(4) Low Erosivity Waivers, and Other Waivers from Stormwater Controls (LEWs); and
(5) Bypass reporting.

(d) Electronic Submission: access the eDMR system via: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx

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

10. The facility's SIC code(s) or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit effective date. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The SWPPP must be reviewed and updated every five years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *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 The purpose of the SWPPP and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective preventing pollution [10 CSR 20-2.010(56)] of waters of the state. Corrective action means the facility took steps to eliminate the deficiency.
The SWPPP must include:

(a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
(b) A map with all outfalls and structural BMPs marked.
(c) A schedule for at least once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
i. Operational deficiencies must be corrected within seven (7) calendar days.
ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to Department and EPA personnel upon request. Electronic versions of the documents are acceptable.

(d) A provision for designating an individual to be responsible for environmental matters.
(e) A provision for providing training to all personnel involved in housekeeping, material handling (including but not limited to loading and unloading), storage, and staging of all operational, maintenance, storage, and cleaning areas. Proof of training shall be submitted upon request by the Department.

D. SPECIAL CONDITIONS (CONTINUED)

11. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
    (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas and thereby prevent the contamination of stormwater from these substances.
    (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
    (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. Spill records should be retained on-site.
    (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
    (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property
    (f) Ensure adequate provisions are provided to prevent and to protect river embankments from erosion.

12. To protect the general criteria found at 10 CSR 20-7.031(4), before releasing water accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen. If odor or sheen is indicated, the water shall be treated using an appropriate method or disposed of in accordance with legally approved methods, such as being sent to a wastewater treatment facility. Following treatment, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Tables A1-B3. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP to be available on demand to Department personnel.

13. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under 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 permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

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

15. Report as no-discharge when a discharge does not occur during the report period. It is a violation of this permit to report no-discharge when a discharge has occurred. Do not report “0” for no discharge.

16. 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).

D. SPECIAL CONDITIONS (CONTINUED)

17. Reporting of Non-Detects
    (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated.
    (b) The permittee shall not report a sample result as “non-detect” without also reporting the detection limit of the test or the reporting limit of the laboratory. Reporting as “non-detect” without also including the detection/reporting limit will be considered failure to report, which is a violation of this permit.
    (c) The permittee shall report the non-detect result using the less than “<” symbol and the laboratory’s detection/reporting limit (e.g. <6).
    (d) A monthly average is the sum of all values divided by the number of samples for the month. If only one sample was obtained, the facility’s monthly average is the same as the daily maximum value.
    (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
    (f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).

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

19. This permit does not cover land disturbance activities.

20. 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 is required.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
MODIFICATION STATEMENT OF BASIS
FOR
MO-0004847
VICINITY ENERGY KC

This Statement of Basis (Statement) gives pertinent information regarding modification(s) to the above listed operating permit. A Statement is not an enforceable part of a Missouri State Operating Permit. Changes found here supersede previous fact sheet determinations. The permit was revised as appropriate to reflect changes enumerated in this modification.

PART I. FACILITY INFORMATION
The facility's basic information has not changed; see original fact sheet.

PART II. MODIFICATION RATIONALE
This operating permit is hereby modified to extend the schedule of requirements for installation of fish friendly screens and river return; this permit adds one year to the compliance date. The facility indicated several items beyond their control contributed to necessitating an extension: 1) COVID-19; 2) global impacts on manufacturing and shipping; 3) a bat study is required by the US Army Corps of Engineers, to ensure protection of listed-species prior to removal of trees near the pump house that will be used as the laydown area once construction commences; 4) site-specific constraints for using modified traveling screens make the vendor selection decision more complicated and assessing bids will take longer than anticipated.

This permit changes special conditions #1 to being completed by November 30, 2022 to a completion date of November 30, 2023. Because the screens must be installed, this permit also extends the operational studies under special condition #4 from June 30, 2025 to June 30, 2026. This is past the expiration date of the permit. These dates will be evaluated during the next renewal as well; the expiration date of this permit is November 30, 2024.

The facility requested all references in the fact sheet to the old name "Veolia" be changed to Vicinity. This was completed.

On January 4, 2022 the United States Fish and Wildlife Service responded that an extension was supported.

Page numbering/formatting was corrected. No other changes were made at this time.

PART III. ADMINISTRATIVE REQUIREMENTS
On the basis of preliminary staff review, and utilizing current applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue this permit subject to specified effluent limitations, schedules, requirements, and special conditions. The changes contained herein require a public notice comment period per 10 CSR 20-6.020. The proposed determinations are tentative pending public comment.

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

- ✓ The Public Notice period for this operating permit started February 10, 2022 and ended March 14, 2022. There were no comments.

DATE OF FACT SHEET: MARCH 15, 2022
COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL PROGRAM SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 526-3386
pam.hackler@dnr.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
MODIFICATION STATEMENT OF BASIS
FOR
MO-0004847
VICINITY ENERGY KC

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The facility's basic information has not changed; see original fact sheet.

PART II. MODIFICATION RATIONALE

This operating permit is hereby modified to extend the schedule of compliance for installation of fish friendly screens and river return; this permit adds one year to the compliance date. The facility indicated COVID-19 has delayed their schedule. This permit changes special condition #2 to being completed by November 30, 2022. Because the screens must be installed, this permit also extends the operational studies to June 30, 2025; see special condition #4. This is past the expiration date of the permit.

Page numbering was corrected.

No other changes were made at this time.

PART III. ADMINISTRATIVE REQUIREMENTS

On the basis of preliminary staff review, and utilizing current applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue this permit subject to specified effluent limitations, schedules, and special conditions. The changes contained herein require a public notice comment period per 10 CSR 20-6.020. The proposed determinations are tentative pending public comment.

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

✓ The Public Notice period for this operating permit was from 8/21/2020 to 9/21/2020; no comments were received.

DATE OF FACT SHEET: SEPTEMBER 22, 2020

COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL PROGRAM SPECIALIST
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WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
MO-0004847
VICINITY ENERGY KANSAS CITY, INC.

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

Part I – Facility Information

Facility Type: Categorical Industrial > 1 MGD
Facility Description: The Vicinity Energy Kansas City, Inc. facility supplies 185 pounds per square inch by gauge (psig) steam into a downtown distribution system. The system services Truman Medical Center, Cargill Soybean and Biodiesel plant, and Ingredion starch production company with steam, and additional downtown area customers with building heating. The plant also supplies 33° F chilled water into a downtown distribution system, which provides customers with building cooling in the summer. The plant consists of four natural gas fired boilers, one steam turbine generator (five megawatts), three steam chillers (2000 tons per hour cooling each), and one electric chiller (3000 tons per hour cooling).

Part II – Modification Rationale

This operating permit is hereby modified to reflect a change in ownership.

No other changes were made at this time.

Part III – Administrative Requirements

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

DATE OF FACT SHEET: 04/08/2020

COMPLETED BY:

STEVEN ARCHAMBAULT, ENVIRONMENTAL SPECIALIST
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WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL WASTEWATER UNIT
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0004847
VICINITY ENERGY KANSAS CITY, INC.

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant 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)(A)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:	Categorical Industrial > 1 MGD
SIC Code(s):	4961
NAICS Code(s):	221330
Application Received:	12/20/2018
Modification Date:	05/01/2017 and 04/08/2020
Expiration Date:	06/30/2019
USFWS Review:	01/10/2019-3/11/2019; 5/1/2019-7/1/2015 extended to 7/15/2019
Last Inspection:	03/14/2017

FACILITY DESCRIPTION:
The Vicinity Energy Kansas City, Inc. facility supplies 185 pounds per square inch by gauge (psig) steam into a downtown distribution system. The system services Truman Medical Center, Cargill Soybean and Biodiesel plant, and Ingredion starch production company with steam, and additional downtown area customers with building heating. The plant also supplies 33° F chilled water into a downtown distribution system, which provides customers with building cooling in the summer. The plant consists of four natural gas fired boilers, one steam turbine generator (five megawatts), three steam chillers (2000 tons per hour cooling each), and one electric chiller (3000 tons per hour cooling).

Plate1: Eastern portion of the facility—generating portion, main plant

Plate 2: Western portion of the facility—storage area (no longer has coal)

Plate 3: Northern Portion of the facility—intake and outfall

Outfall #001 is non-contact cooling water. The water from the coolers flows into a series of discharge pipes which combine into an 84" diameter river water return pipe. This pipe travels underground back to the river where it is connected to a weir assembly. The purpose of the weir is to insure the 84" discharge line stays full of water from the main plant to the weir to insure that there always a slight draw on the line prior to discharge to the Missouri River.

Reverse osmosis and ultrafiltration backwash are discharged from outfall #001.

Permitted feature #INT (previously labeled as outfall #002) is the facility's pump house which withdraws water from the Missouri River and is comprised of three sections. Monitoring has been and will continue to occur for this facility at the intake location as there are temperature change limitations within the permit and other monitoring required to protect water quality and to determine technology effluent characteristics. This permit also contains conditions relating to 316(b) requirements to protect aquatic organisms from the cooling system intake.

The first section of the intake was built in the early 1900s and is currently abandoned in place. To the east of the 1900 section is the 1929 addition. The 1929 section houses pumps No. 3, 4, 5, and 6. Pumps No. 3, 4 and 5 are high volume, low pressure pumps capable of pumping 2.7 million gallons/hour. Pump No. 6 is rated at 0.24 million gallons/hr. and is used when plant flow requirements are lower than pumps 3, 4, and 5's pumping curves allow. Pumps No. 3, 4 and 5 have suction hoods and take their suction from the suction bays which are 43 feet deep as measured from the floor of the pump house. USGS places the floor of these suction bays at +2.33' which is above the USGS station gage datum of elevation 706.4' above sea level.

East of the 1929 addition is the 1939 addition which houses pumps Nos. 1 and 2. No. 1 Pump is capable of 1.47 million GPH and is driven by a variable frequency drive which allows the facility to vary the speed of the pump to adjust the pumping volume and pressure. No. 2 pump is a high volume, low pressure pump capable of moving 2.7 million gallons per hour (GPH). The suction bays for these pumps are 55' 2" deep. These bays have a five-foot wooden bulkhead installed at the bottom of the bay. Both the 1929 and 1939 pump house sections have movable screens installed in the river in front of the pump suction bays to keep debris from entering the pump suctions. These are slow moving, self-cleaning screens that utilize river water sprays to clean the screens into a trough where the debris is removed.

Intake pumps move the river water to the main plant via two 54-inch diameter and one 48-inch diameter pipe where the water is used for once through cooling in the chiller condensers, chiller turbine oil coolers, bearing cooling water heat exchanger and the house turbine generator oil cooler.

The water from the coolers flows into a series of discharge pipes that combine into an 84" diameter river water return pipe. This pipe travels underground back to the river where it is connected to a weir assembly. The purpose of the weir is to insure the 84" discharge line stays full of water from the main plant to the weir to insure there always a slight draw on the line. The water that overflows the weir is discharged into the Missouri river downstream and to the east of the Pump House. Vicinity Energy Kansas City, Inc.'s central region manager certified the facility is not adding pollutants to the cooling water at any point prior to discharge. The facility stated it does not have cooling towers or use any of the priority pollutant chemicals.

The Department formerly permitted the collection and disposal agency Underground Services Company through Missouri state operating permit UI-0000010 which fell under section 260.242 of the Missouri Revised Statutes. However, in January 2019, Underground Services completed the mine backfilling activity at the permitted site and the UI permit was terminated.

The receiving stream is the Missouri River. All stormwater runoff, material storage runoff and construction runoff flows to the Kansas City sanitary sewer system. Kansas City Water Services department is the downstream landowner. The city of Kansas City does periodic water quality sampling and analysis of the storm water runoff, material storage runoff and construction runoff. The analysis consists of pH and total suspended solids (TSS). Direct discharge of stormwater to surface water is not permissible under this permit.

The charter number for the continuing authority for this facility is F00330383; 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 the application.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	45 MGD	82.0 MGD	none	once through cooling water
#002	12,043 MGD	29.3 MGD	none	intake

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last five years. The following exceedances of limitations were found.

PF No	*MPED*	*Parameter Description*	*Unit*	*Daily Max Limit*	*Reported*	*Monthly Average Limit*	*Reported*
001	3/31/2019	Solids, Total Suspended, Net Value	mg/L	100	41.5	30	41.5
001	01/31/2019	Solids, Total Suspended, Net Value	mg/L	100	48.5	30	48.5
001	11/30/2018	Solids, Total Suspended, Net Value	mg/L	100	78	30	78
001	09/30/2018	Solids, Total Suspended, Net Value	mg/L	100	55	30	55
001	07/31/2018	Solids, Total Suspended, Net Value	mg/L	100	36	30	36
001	04/30/2018	Solids, Total Suspended, Net Value	mg/L	100	100	30	100
001	07/31/2017	Solids, Total Suspended, Net Value	mg/L	100	40	30	40
001	05/31/2017	Solids, Total Suspended, Net Value	mg/L	100	1910	30	1740

MPED is monitoring period ending date.

PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY'S WATER QUALITY:
The USGS has data available for the Missouri River. Please visit USGS.gov to download the applicable data from gaging station 06893000 or others nearby. The Missouri River is on the impaired waters list for *Escherichia coli*, and has total maximum daily loads associated with chlordane and PCBs. The facility is not likely a contributor of the above pollutants. The limits imposed in this permit are acceptable for the Missouri river. Uses of this river are for aquatic life, livestock watering, irrigation, drinking water, and recreational boating and similar contact uses.

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. The Missouri River is listed on the 2006 Missouri 303(d) List for chlordane and polychlorinated biphenyls (PCBs) where a TMDL was developed, and the 2008, 2010, 2012, and 2014 CWA Section 303(d) list for *Escherichia coli* without an associated TMDL.
- ✓ This facility is not considered to be a source of the above listed pollutants or considered to contribute to the impairment of the Missouri River.

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 polychlorinated biphenyls (PCBs).
- ✓ This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of the Missouri River.

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 WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO SEGMENT	12-DIGIT HUC
#001	Missouri River	P	0356	AQL/WWH, DWS, IND, IRR, LWW/LWP, SCR, WBC-B	0.0 mi	103000101-0301 Buckeye Creek-Missouri River

n/a not applicable

Classes are hydrologic classes as defined in 10 CSR 20-7.031(1)(F). L1: Lakes with drinking water supply - wastewater discharges are not permitted to occur to L1 watersheds per 10 CSR 20-7.015(3)(C); L2: major reservoirs; L3: all other public and private lakes; P: permanent streams; C: streams which may cease flow in dry periods but maintain pools supporting aquatic life; E: streams which do not maintain surface flow; and W: wetland. Losing streams are defined in 10 CSR 20-7.031(1)(O) and are designated on the Losing Stream dataset or determined by the Department to lose 30% or more of flow to the subsurface.

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 8-20-13 MUDD V1.0 or newer; 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; New C streams described on the dataset per 10 CSR 20-7.031(2)(A)3. as 100K Extent Remaining Streams.

Per 10 CSR 20-7.031, 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 are to be maintained in the receiving streams 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.: **ALP** = Aquatic Life Protection (formerly AQL); current uses are defined to ensure the protection and propagation of fish shellfish and wildlife, 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 ALP effluent limitations in 10 CSR 20-7.031 Table A1-A2 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 not supported in WBC-A;
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 and drinking of water;
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 Tables A1-B3 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

MIXING CONSIDERATIONS -- THERMAL

Missouri's Water Quality Standards [10 CSR 20-7.031(4)(A)1.], specifically state mixing considerations for toxics do not apply to thermal mixing considerations. Thermal mixing considerations are located in [10 CSR 20-7.031(4)(D)6.], which states thermal mixing considerations are limited to 25% of the cross-sectional area or volume of a river, unless a biological survey performed in response to 316(a) of the Clean Water Act indicate no significant adverse effect on aquatic life. For the purpose of mixing considerations, the Department typically uses the 25% of the daily flow instead of the cross-sectional area. Daily flows are available through United States Geological Survey's website; a cross-sectional area is more difficult to determine as it changes on a daily basis. This has been continued from the previous permit.

RECEIVING STREAM MONITORING REQUIREMENTS

The receiving stream will be monitored to determine changes in temperature. Intake temperature may be used as a substitute for stream temperature. Intake velocity may NOT be used for stream velocity (CFS).

RECEIVING STREAM LOW-FLOW VALUES:

OUTFALL	RECEIVING STREAM	LOW-FLOW VALUES (CFS)				
		GAGING STATION	1Q10	7Q10	30Q10	60Q10
#001	Missouri River	#06893000 near Kansas City, MO	12131	15323	19243	20919

Data were obtained in Oct 2017 for the last 20 years and were calculated using a Department developed spreadsheet (available upon request).

MIXING CONSIDERATIONS TABLE: MISSOURI RIVER

MIXING ZONE (CFS) (CHRONIC) [10 CSR 20-7.031(5)(A)5.A.4.B.(III)(a)]				ZONE OF INITIAL DILUTION (CFS) (ACUTE) [10 CSR 20-7.031(5)(A)4.B.(III)(b)]			
1Q10	7Q10	30Q10	60Q10	1Q10	7Q10	30Q10	60Q10
3033 cfs	3831 cfs	4818 cfs	5230 cfs	303 cfs	383 cfs	482 cfs	532 cfs

The design flow for this facility is 82 MGD.

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.

ANTIBACKSLIDING:
Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(l)] 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 for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
  - ✓ Material and substantial alterations or additions to the permitted facility occurred after permit issuance justify the application of a less stringent effluent limitation.
    - The following special condition was removed from the permit as this facility no longer burns coal. "Use and disposal of Coal Ash: Disposal of ash is not authorized by this permit. This permit does not pertain to permits for disposal of ash or exemptions for beneficial use of ash under the Missouri Solid Waste Management Law and regulations, as established in 10 CSR 80. This permit does not authorize off site storage, use, or disposal of ash in regard to water pollution control permits required under 10 CSR 20 6.015 and 10 CSR 20 6.200.
  - ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
    - The previous permit Note 4 indicated the facility must use a test method for total recoverable copper with a detection limit less than 10 µg/L. However, limitations have been implemented in the permit which are higher than the in-stream water quality standard; the facility must use a published 40 CFR 136 method to obtain analytical values but is no longer required to meet the 10 µg/L detection limit because of mixing.
    - 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 permittee 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 outfall #001, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates putrescent wastewater would be discharged from the facility.
        - For outfall #001, there is RP for unsightly or harmful bottom deposits; this permit contains effluent limitations for TSS. The Missouri River is turbid but the facility is not expected to be a significant contributor to harmful bottom deposits.

      (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, scum, or floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates oil, scum, or floating debris will be present in sufficient amounts to impair beneficial uses.

      (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 no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses; satellite imagery has been used to determine the discharge is not unsightly. TSS limitations

provided in this permit are NET technological limitations and this facility is expected to add little solids to the river in comparison to the natural background color and turbidity of the river.

- For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee 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 possibly discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.

(E) There shall be no significant human health hazard from incidental contact with the water.

- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(F) There shall be no acute toxicity to livestock or wildlife watering.

- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

- For all outfalls, there is no RP for physical changes that would impair the natural biological community because nothing disclosed by the permittee indicates physical changes would impair the natural biological community.
- It has been established any chemical changes are covered by the specific numeric effluent limitations established in the permit.
- For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee indicates hydrologic changes would impair the natural biological community.

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

- There are no solid waste disposal activities or any operation which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

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 permittee reported the design flow is 153.67 on the application; however, this permit does not authorize discharges greater than the established design flow of 82.0 MGD because the facility has not undergone an antidegradation review to increase the flows and the pollutant loading to the Missouri River. In the 316(b) workplan submitted to the department February 2018 the document reports the facility made the decision to turn on additional pumps in June 2012 to backwash the screens which resulted in a discharge of 130 MGD. This was not a permissible discharge.

This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which must include an alternative analysis (AA) of the BMPs. The SWPPP must be developed, implemented, updated, and maintained at the facility. Failure to implement and maintain the chosen alternative, is a permit violation. The AA is a structured evaluation of BMPs to determine which are reasonable and cost effective. Analysis should include practices designed to be 1) non-degrading, 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why "no discharge" or "no exposure" are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures or benchmark exceedances. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.015(9)(A)5 and 7.031(3). For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the AA 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.

✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate. All stormwater flows from this facility must be directed to the Kansas City combined sewer system as direct discharge to waters of the state is not authorized under this permit.

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

This special condition reiterates the federal rules found in 40 CFR 122.44(f) and 122.42(a)(1). 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 found in 40 CFR 401.15. The permittee should also consider any other toxic pollutant in the discharge as reportable under this condition.

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.

CWA §316(B) BTA DETERMINATION:
Chosen Technology – Modified Traveling Screens [40 CFR 125.92(s)]. The Department has determined the facility must implement appropriately operated modified traveling screens [40 CFR 125.92(s)] to comply with the impingement [40 CFR 125.92(n)] mortality [40 CFR 125.92(o)] standard provided below. The Department, acting on behalf of the EPA director, is implementing conditions within this permit to comply with 40 CFR 125.98(b)(2) to assure compliance with 40 CFR 125.94(c). This facility is not currently subject to 40 CFR 125.94(d) as flows are less than 125 MGD AIF.

In accordance with the previously issued permit, the facility completed an analysis and BTA report for impingement and entrainment. The first intake structure for this facility was constructed in 1929. The 1929 Intake Structure collects water through three intake channels. The intake channels are perpendicular to the channel flow. The intake channels are protected by a bar rack which feeds to a full depth traveling screen slot. Downstream of the screen slot there is a pump intake bay hydraulically open to any/all pumps installed in this building.

Currently, the western screen bay (known as screen bay 5) has been fitted with a bulkhead to prevent the flow of water from the river into the pump intakes. The other two bays (known as screen 3 & 4) are equipped with traveling screens. However the screen in Bay 3 is quite old and is mechanically unusable. The one working screen with this intake structure is in the middle screen bay, Bay 4.

Water flows through the screen to feed the common suction bay. Pumps No. 3, 4, 5, and 6, (plus two small screen wash pumps), utilize this common suction area. Pumps No. 3, 4, and 5 have suction hoods. Pumps 3, 4, and 5 are each name plate rated to be capable of pumping 2.7 million gallons per hour (MG/hr) (64.8 MGD). Pump No. 6 is name plate rated to be capable of pumping 0.24 MG/hr (5.8 MGD).

The 1939 Intake Structure is located east of the 1929 Intake Structure and collects water through two intake channels. Both intake channels have a bar rack installed upstream of a traveling water screen for solids removal. Unlike the 1929 Structure, each intake channel in this structure has a dedicated traveling screen in front of each pump bay. This structure houses pumps No. 1 and 2. Pump No. 1 is capable of pumping 0.68 MG/hr (16.32 MGD) and is equipped with a variable frequency drive (VFD). Pump No. 2 is capable of pumping 2.7 MG/hr (64.8 MGD).

The screens installed in the 1939 Intake structure are the same design as the screen installed in middle channel of the 1929 intake structure. As described above, each pump in the 1939 intake structure has a dedicated screen. The screens in the 1929 intake structure feed a common pump bay for all of the pumps. These screens are slow moving, self-cleaning screens utilizing river water to clean the screens. Any debris trapped on the screen is washed by a cleaning spray into a trough and returned to the river downstream of the intake structure. All screens are 6'0" wide. Screens in 1939 Structure are full screen well height to 55'2" depth below floor (to USGS EL= -7.0'). The screens in the 1929 structure are full screen well height 43'-2" depth below floor (to USGS EL=2.0'). The screens are equipped with 3/8" woven wire mesh with 0.105" (12ga.) wire.

A total of six pumps are present, and operate in combination to provide the volume of water needed to meet demand. During normal operations, a single pump is sufficient for intake needs, and is satisfied by any of pumps 1, 2, 3, 4, and 5. Pump 6 is only used when production of chilled water is not required, and only during the winter months when Intake volume is typically lowest. As plant demand increases, additional pumps are utilized in combination to meet volume requirements.

The United States Fish and Wildlife Services was presented with the 316(b) report on January 10, 2019 and indicated they had no comments on the report on March 14, 2019. No additional requirements were incorporated into this permit to protect federally-listed threatened or endangered species in accordance with 40 CFR 125.94(g). A revised 316(b) report was submitted May 2, 2019 because the original report was found to be insufficient; this report was also sent to the US Fish and Wildlife Services. This updated report indicated traveling screens would be used to meet the impingement mortality standard requirement. A revised report was submitted to the services on May 2, 2019 for a review; the Services replied on July 16, 2019.

The comment was as follows: The U.S. Fish and Wildlife Service (Service) has reviewed the April 12, 2019 revised report for the 316(b) portions of Annual Operating Permit Renewal for Vicinity Energy Kansas City Facility. The Service provides this email as part of our ongoing technical assistance to Missouri DNR and the USEPA under our 2014 Biological Opinion on the current 316(b)

regulatory program. The Services offered the following comments pursuant to Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

Because there is no comprehensive information regarding potential effects to pallid sturgeon from this or other nearby facilities, impingement monitoring is necessary to appropriately assess effects, determine risk, and minimize potential take (if any). Therefore we recommend that Vicinity Energy complete the impingement and entrainment sampling following our January 8, 2016 comments on their draft work plan, which are copied below for easy reference. We also request that Vicinity Energy develop and conduct a study to determine the potential harm from impingement to pallid sturgeon using Shovelnose Sturgeon as a surrogate due to the rarity of young pallid sturgeon within the system.

Increase monitoring during the summer season when it would be mostly likely to sample larval and young sturgeon impinged/entrained at the facility. Weekly sampling from June through October would provide the most robust approach to accurately assessing this risk to the sturgeon. All sampled sturgeon should be weighed, measured, photographed and preserved in ethanol and analyzed via genetic analysis to confirm species.

An addendum was added on July 17, 2019. If the fish is alive, the facility should photograph, weigh and measure it, collect a small clip of the pectoral fin, and preserve the clip it in 95% ethanol for genetic analysis. The live fish can be released immediately after these tasks are completed.

On July 17, 2019 in a follow-up email, the permit writer noted to the Services this facility does not withdraw greater than 125 MGD therefore entrainment sampling was not required. On July 17, 2019, the Services agreed.

However, on August 20, 2019, the Department failed to receive an allowed take statement which is required per 40 CFR 125.98(j), therefore the extra sampling requirements requested by the Services were removed.

In this method of compliance, a facility must first operate a modified traveling screen that meets the definition at 40 CFR 125.92(s). The definition identifies and requires features of a traveling water screen which must provide for an appropriate level of fish protection: collection buckets (or equivalent) to minimize turbulence to aquatic life; guard rails or barriers to prevent loss of fish from the collection system; screen panel materials such as smooth woven mesh, drilled mesh, molded mesh, or similar materials to protect fish from descaling; continuous or near continuous rotation of screens and operation of collection equipment to recover impinged fish as soon as practical; low pressure wash or vacuum to remove collected organisms from the screens; fish handling and return with sufficient water flow to return fish directly to the source water in a manner that does not promote predation or the re-impingement of the fish, or a large vertical drop. EPA intends for this definition to generally include modified Ristroph screens (including Geiger screens, Beaudrey WIP screens, and Hydrolox screens), dual flow screens, and rotary screens.

Modified traveling screens with a fish return and handling system is the technology basis for the impingement mortality standard, therefore the EPA fully expects biological monitoring of a properly designed, built, and operated modified traveling screen would consistently be able to meet the impingement mortality performance standard at Federal Register Vol 79 No. 159; 48376. If EPA were to simply set a performance standard based on the numeric performance levels achievable by modified traveling screens, a facility would have to conduct continual biological monitoring to demonstrate compliance. A far more efficient way to demonstrate compliance would be for facilities to optimize the operation of their technologies for their site-specific conditions and identify the conditions that distinguish proper operation at their facility. The optimized operation of the technology would be largely demonstrated through the biological data collection and studies required in the permit application at 40 CFR 122.21(r)(4) and (6)(i), including an *impingement technology performance optimization study.* Biological data collection should follow the sampling protocols. The optimized operation documented by the *impingement technology performance optimization study* will result in more than just meeting the impingement mortality standard, and results in a facility achieving the best possible performance. The biological data collection and analysis in the *impingement technology performance optimization study* will identify the operating conditions that result in optimized performance, such as fish sluicing spray pressures, rotation speed and frequency of the screens, angle of the fish sluicing sprays, fish return trough water flows, and fish return trough location. The Director will then establish these operating conditions as permit conditions, along with an equipment inspection condition to assure proper functioning of the technology. As long as the permit conditions are met, the EPA does not expect any biological compliance monitoring will be required, unless otherwise specified by the Director, for example, for the protection of shellfish or fragile species (see 40 CFR 125.96(c)).

The facility currently operates the following.

Bay No.	**Intake Year**	**Pump No.**	**Note:**
Bay 1	1939	1	dedicated traveling screen in front of bay
Bay 2		2	dedicated traveling screen in front of bay
Bay 3	1929	3, 4, 5, 6 (common suction bay)	screen unusable
Bay 4			screen operational
Bay 5			westernmost bay; bulkhead prevents use

All bays have a trash bar rack. All screens are 3/8 inch woven wire mesh with 0.105 inch (12 gauge) wire, are slow moving and utilize river water to clean the screen. Screens do not currently have fish returns or similar devices.

In accordance with 40 CFR 125.98(e), the Department has determined the facility must complete a two-year optimization study in accordance with 40 CFR 122.21(6)(ii). In the case of Option (6), the facility must submit a site-specific impingement study including two years of biological data collection to demonstrate the operation of the system of technologies, operational measures, and best management practices has been optimized to minimize impingement mortality. If this demonstration relies in part on a credit for reductions in the rate of impingement already achieved by measures taken at the facility, an estimate of those reductions and any relevant supporting documentation must be submitted. The estimated reductions in rate of impingement must be based on a comparison of the system to a once-through cooling system with a traveling screen whose point of withdrawal from the surface water source is located at the shoreline of the source waterbody.

Under this option, the facility must demonstrate to the Director that it will install and operate modified traveling screens as defined at 40 CFR 125.92(s) that are or will be optimized to minimize IM mortality at the site. The facility will also be required to submit an impingement technology performance optimization study [40 CFR 122.21(r)(6)] which will include a 2-year optimization study for the intake technology. The facility will conduct 24 sequential months of monthly impingement data collection, during which the facility will seek to optimize the technology performance to minimize impingement mortality. This study is intended to determine the optimal configuration and operating conditions of modified traveling screens and the fish handling and return systems for that intake to be consistently protective of aquatic organisms. During the course of the study, EPA expects that a facility will evaluate the interim results and make changes to the technology or operating conditions as needed to identify the most appropriate set of operational characteristics to ensure long-term success. For example, a facility could adjust the spray wash pressure, adjust the rotating speed of the screens, rotate the screens more frequently, re-angle the fish sluicing sprays, ensure adequate water in the return flume, design the fish return to avoid avian and animal predation on the aquatic organisms, and locate the fish return in such a way to avoid predation. Once a facility has optimized its technology performance, the study will identify operational measures that will serve as observable and enforceable permit conditions. As evidenced by the data used in determining the performance standard, by requiring facilities to study the conditions for optimized performance, many facilities will achieve impingement mortality reductions much greater than the 12-month average impingement mortality performance standard without significant additional investment. Biological data collection beyond this two-year study will not be required at this time. The facility will simply be required to ensure it is operating its technology under the identified conditions for optimized performance. If the Department concludes the screens will achieve optimized performance, the Director will also incorporate operating conditions to ensure optimized performance as terms of the facility's NPDES permit.

See special conditions. A schedule is provided for implementation and optimization.

DOMESTIC WASTEWATER:
Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveniences of residences, commercial buildings, factories, and institutions, including any water which may have infiltrated the sewers. 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).

EFFLUENT LIMITATIONS:
Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A). Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

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 has an associated Effluent Limit Guideline (ELG) at 40 CFR 423 applicable to the wastewater discharge at this site, and is applied under 40 CFR 125.3(a). Should Reasonable Potential be established for any particular parameter, and water-quality derived effluent limits are more protective of the receiving water's quality, the WQS will be used as the limiting factor in accordance with 40 CFR 122.44(d) and 10 CSR 20-7.015(9)(A). See Part IV: EFFLUENT LIMITS DETERMINATION. This facility is required to be covered under the City of Kansas City's NPDES program for stormwater runoff discharges limited at 40 CFR 122.21(b)(14)(vii).

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 permittees 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 permittee 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 in each table in Part A of the permit. The data entry personnel should use these identifiers to assure data entry is being completed appropriately.

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

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, §644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or allow 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.

✓ Applicable; this permit contains effluent limitations to protect for toxicity in accordance with 10 CSR 20-7.031(4)(D) and (G); see Part IV for specific pollutant discussion.

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-2.010(82), and is subject to regulations at 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.

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.

NO-DISCHARGE LAND APPLICATION:

Land application of wastewater or sludge shall comply with the all applicable no-discharge requirements listed in 10 CSR 20-6.015 and all facility operations and maintenance requirements listed in 10 CSR 20-8.020(15). These requirements ensure appropriate operation of the no-discharge land application systems and prevent unauthorized and illicit discharges to waters of the state. Land applications by a contract hauler on fields the permittee has a spreading agreement on are not required to be in this permit. A spreading agreement does not constitute the field being rented or leased by the permittee as they do not have any control over management of the field.

✓ Not applicable; this permit does not authorize operation of a no-discharge land application system to treat wastewater or sludge.

OIL/WATER SEPARATORS:

Oil water separators (OWS) 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 separators must be operated according to manufacturer's specifications and authorized in NPDES permits or may be regulated as a petroleum tank.

✓ Not applicable; the permittee has not disclosed the use of any oil water separators at this permitted facility and therefore oil water separator tanks are not authorized by this permit.

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
Copper, TR	25.62	16.14	AQL	75.82	28.10	29	1.201	67	3.34	62.40	15.88	Yes

Units are (µg/L) unless otherwise noted.
TR = total recoverable

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 Reasonable Potential Determination (RPD) on applicable parameters within the permit. See Part IV: Effluent Limits Determinations below.

✓ 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 permittee 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 permittee; 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).

Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

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, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others.

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 40 CFR 125.98(c) for total recoverable copper at outfall #001.
✓ The facility has been given a schedule of compliance to meet BTA determination for the cooling water intake structure.
✓ See permit Sections A, B, and D for compliance dates.

SPILL REPORTING:
Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. http://dnr.mo.gov/env/esp/spillbill.htm

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

✓ Not applicable; the facility has not disclosed domestic wastewater is managed on-site.

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

✓ Not applicable; industrial sludge is not generated at this facility.

STANDARD CONDITIONS:
The standard conditions Part I attached to this permit incorporate all sections of 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 permittee to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean Water Act.

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:
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 does not have any stormwater-only outfalls discharging directly to waters of the state. The facility must provide BMPs to meet any MS4 requirements.

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 section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (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 permittee 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 permittee 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.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The AA evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

✓ Applicable; a SWPPP shall be developed and implemented for this facility; continued from previous permit.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations 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 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 permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Tables A1-B3 at 10 CSR 20-7.031 shows water quality standards.

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 section 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 permittee 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

✓ Not applicable; the permittee has not submitted materials indicating the facility will be performing UI 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; this 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 not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A).

✓ Applicable; wasteload allocations for toxic parameters were calculated using water quality criteria or water quality model results and by applying the dilution equation below; WLAs are calculated using the *Technical Support Document For Water Quality-Based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (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).

✓ Number of Samples "n": 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 assumption 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 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".

WASTELOAD ALLOCATION (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.

PART IV. EFFLUENT LIMITS DETERMINATIONS

OUTFALL #001 – MAIN FACILITY OUTFALL

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	ONCE/DAY	MONTHLY	24 HR. TOT
TEMPERATURE CAP (00011)	°F	90	90	SAME	ONCE/DAY	MONTHLY	CALCULATION
TEMPERATURE CHANGE (61576)	°F	5	5	SAME	ONCE/DAY	MONTHLY	CALCULATION
CONVENTIONAL							
CHLORINE, TOTAL RESIDUAL	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS) – GROSS (00530)	mg/L	*	*	SAME	ONCE/MONTH	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS) – NET (00533)	mg/L	100	30	SAME	ONCE/MONTH	MONTHLY	CALCULATION
METALS							
ALUMINUM, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
ARSENIC, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
COPPER, TR	µg/L	*	*	INTERIM	ONCE/MONTH	MONTHLY	GRAB
COPPER, TR	µg/L	75.8	28.1	FINAL - NEW	ONCE/MONTH	MONTHLY	GRAB
IRON, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
FLUORIDE	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB

* Monitoring and reporting requirement only
NEW parameter not established in previous state operating permit
interim parameter requirements prior to end of SOC
final parameter requirements at end of SOC
TR Total Recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. In the previous permit, the facility was reporting effluent flow in CFS. To become in line with most other facilities in the state, the facility will need to submit the flow rate for the effluent in MGD.

Flow (Effluent)

Daily monitoring requirement (MGD and CFS); the facility will need to record flow data for the effluent in millions of gallons per day (MGD) and cubic feet per second (CFS). The MGD value will be reported to the department; the CFS value will be used in calculating the maximum effluent temperature (T_{cap}) and the change in effluent temperature (ΔT). This is parameter number 50050 in the eDMR system.

Flow (Stream)

Daily monitoring-only requirement (CFS); it is the department's expectations the permittee will obtain stream flow data from appropriate and applicable nearby USACE or USGS gauging stations or similar mechanical measurement. The department will only use gauging data as a viable source of stream flow; flows (design or actual) from other point sources will not be considered. Not directly reported to the department except through upload to eDMR system.

Temperature Cap (T_{cap})
In accordance with 10 CSR 20-7.031(4)(D)5, this facility shall not exceed the monthly temperature criteria established of 90°F. This is parameter number 00011 in eDMR.
T_{cap} is calculated as follows:

$$T_{cap} = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e)]$$

Where,
$Q_s/4$ = the receiving stream flow in CFS divided by 4 or the flow represented in the cross-sectional area of the receiving stream divided by 4 in accordance with [10 CSR 20-7.031(4)(D)6.]
Q_e = effluent flow
T_s = Receiving stream's ambient temperature. Daily monitoring requirement (°F); the ambient stream temperature can be used or, for many facilities, the intake temperature can be used to determine stream's temperature. This requirement is used to calculate the change in temperature (ΔT) and the maximum temperature (T_{cap}). A facility's intake temperature can be used for this parameter if the facility believes that it is representative of the receiving stream's actual temperature.
T_e = Temperature of the effluent. Daily monitoring requirement (°F); effluent temperature is the measured temperature of the discharge and is used to determine the change in temperature (ΔT) and the maximum temperature (T_{cap}).

Delta Temperature (ΔT)
The permittee shall not cause the temperature of the receiving stream to change by ± 5°F, in accordance with [10 CSR 20-7.031(4)(D)1.]. This is parameter number 61576 in eDMR.

ΔT is calculated as follows:

$$\Delta T = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e)] - T_s$$

Where,
$Q_s/4$ = the receiving stream flow in CFS divided by 4 or the flow represented in the cross-sectional area of the receiving stream divided by 4 in accordance with [10 CSR 20-7.031(4)(D)6.]
Q_e = Effluent Flow.
T_s = Receiving stream's ambient temperature. Daily monitoring requirement (°F); the ambient stream temperature can be used or, for many facilities, the intake temperature can be used to determine stream's temperature. This requirement is used to calculate the change in temperature (ΔT) and the maximum temperature (T_{cap}).
T_e = Temperature of the effluent. Daily monitoring requirement (°F); effluent temperature is the measured temperature of the discharge and is used to determine the change in temperature (ΔT) and the maximum temperature (T_{cap}).

CONVENTIONAL:

Chlorine, Total Residual (TRC)
The facility has disclosed they use a biocide (chlorine) as a defense which is then neutralized with bisulfite prior to using river water within the UF and RO systems; the amounts used in the system and subsequently discharged are not expected to approach the calculated limits (4.7 mg/L daily maximum; 2.4 mg/L monthly average) therefore limits are not required until further data is obtained. The facility must sample the discharge concurrently of applying the biocide.

Total Suspended Solids (TSS)
Net 100 mg/L daily maximum; net 30 mg/L monthly average; this is parameter number 00533 in the eDMR system. The facility will also report the gross TSS discharge for parameter number 00530 in eDMR. This facility utilizes ultrafiltration (UF) and reverse osmosis (RO) systems. The permit writer has established these systems increase solids within the effluent. The ELG at 40 CFR 423.12(b)(3) has indicated RO is a low volume waste source therefore is controlled through TSS technology limitations. Additionally, federal regulations at 40 CFR 122.45(g) allow for net credits of TSS. Technology limits are 100 mg/L daily maximum, and 30 mg/L monthly average (net). The facility will measure the effluent at end of pipe and intake. Should the facility require additional monitoring to meet the monthly average, the facility may sample more frequently as necessary. The facility must measure the intake and effluent at generally the same time. If the facility is not utilizing the intake on the Missouri River, the facility may not calculate net limits but must report the discharge as a whole.

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). Propagation of fish, shellfish, and wildlife apply designated as "Aquatic Life Protection" in 10 CSR 20-7.031 Tables A1 and A2. Additional use criterion (HHP, DWS, GRW, IRR, or

LWW) may also be used as applicable to determine the most protective effluent limit for the waterbody class and uses. The hardness value used for hardness-dependent metals calculations was based on the default 50th percentile and is reported in the calculations below. This facility is located in the Central Plains/Blackwater/Lamine area therefore the hardness used was 125 mg/L.

Aluminum, Total Recoverable

The Department has reason to believe this parameter is present in the discharge therefore the permit writer has determined monitoring for this parameter to be appropriate. Even though the facility marked believed absent on the 2019 renewal application materials, the permit writer has reason to believe this parameter is present in the discharge due to use and discharge of backwash from ultrafiltration (UF) and reverse osmosis (RO) systems. These systems are known to concentrate pollutants in the discharge where the ambient stream used as source water has this pollutant present in amounts which may be concentrated to above Missouri Water Quality Standards by the UF and RO systems. Monitoring is required to fully characterize the discharge and to determine reasonable potential to exceed water quality standards for this pollutant.

Arsenic, Total Recoverable

The Department has reason to believe this parameter is present in the discharge therefore the permit writer has determined monitoring for this parameter to be appropriate. Even though the facility marked believed absent on the 2019 renewal application materials, the permit writer has reason to believe this parameter is present in the discharge due to use and discharge of backwash from ultrafiltration (UF) and reverse osmosis (RO) systems. These systems are known to concentrate pollutants in the discharge where the ambient stream used as source water has this pollutant present in amounts which may be concentrated to above Missouri Water Quality Standards by the UF and RO systems. Monitoring is required to fully characterize the discharge and to determine reasonable potential to exceed water quality standards for this pollutant.

Copper, Total Recoverable

Daily maximum limit of 75.8 µg/L, monthly average limit of 28.1 µg/L. Previous permit modification implemented copper monitoring. The facility reported from 0.001 to 67 µg/L. A reasonable potential analysis showed reasonable potential; the facility cannot meet the new limits at this time therefore a schedule of compliance is afforded. The facility must report all data in µg/L. Copper background average is 8.995 µg/L.

Acute AQL: e^(0.9422 * ln190 – 1.700300) * (0.960) = 24.597 µg/L [at hardness 190]
Chronic AQL: e^(0.78545 * ln190 – 1.702) * (0.960) = 15.499 µg/L [at hardness 190]
TR Conversion: AQL/Translator = 24.597 / 0.96 = 25.622 [at hardness 190]
TR Conversion: AQL/Translator = 15.499 / 0.96 = 16.145 [at hardness 190]
Acute WLA: ((126.873 cfsDF + 383.075 cfsZID) * 25.622 – (383.075 cfsZID * 8.996 background)) / 126.873 cfsDF = 75.822
Chronic WLA: ((126.873 cfsDF + 3830.75 cfsMZ) * 16.145 – (3830.75 cfsMZ * 8.996 background)) / 126.873 cfsDF = 231.99
LTAa: WLAa * LTAa multiplier = 75.822 * 0.174 = 13.159 [CV: 1.201, 99th %ile]
LTAc: WLAc * LTAc multiplier = 231.99 * 0.321 = 74.456 [CV: 1.201, 99th %ile]
use most protective LTA: 13.159
Daily Maximum: MDL = LTA * MDL multiplier = 13.159 * 5.762 = 75.8 µg/L [CV: 1.201, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 13.159 * 2.135 = 28.1 µg/L [CV: 1.201, 95th %ile, n=4]

Iron, Total Recoverable

The Department has reason to believe this parameter is present in the discharge therefore the permit writer has determined monitoring for this parameter to be appropriate. Even though the facility marked believed absent on the 2019 renewal application materials, the permit writer has reason to believe this parameter is present in the discharge due to use and discharge of backwash from ultrafiltration (UF) and reverse osmosis (RO) systems. These systems are known to concentrate pollutants in the discharge where the ambient stream used as source water has this pollutant present in amounts which may be concentrated to above Missouri Water Quality Standards by the UF and RO systems. Monitoring is required to fully characterize the discharge and to determine reasonable potential to exceed water quality standards for this pollutant.

OTHER:

Chloride

The Department has reason to believe this parameter is present in the discharge therefore the permit writer has determined monitoring for this parameter to be appropriate. UF and RO systems are known to concentrate pollutants in the discharge where the ambient stream used as source water has this pollutant present in amounts which may be concentrated to above Missouri Water Quality Standards. Monitoring is required to fully characterize the discharge and to determine reasonable potential to exceed water quality standards for this pollutant.

Fluoride

The Department has reason to believe this parameter is present in the discharge therefore the permit writer has determined monitoring for this parameter to be appropriate. Even though the facility marked believed absent on the 2019 renewal application materials, the permit writer has reason to believe this parameter is present in the discharge due to use and discharge of backwash

from ultrafiltration (UF) and reverse osmosis (RO) systems. These systems are known to concentrate pollutants in the discharge where the ambient stream used as source water has this pollutant present in amounts which may be concentrated to above Missouri Water Quality Standards by the UF and RO systems. Monitoring is required to fully characterize the discharge and to determine reasonable potential to exceed water quality standards for this pollutant.

Sulfate

The Department has reason to believe this parameter is present in the discharge therefore the permit writer has determined monitoring for this parameter to be appropriate. Even though the facility marked believed absent on the 2019 renewal application materials, the permit writer has reason to believe this parameter is present in the discharge due to use and discharge of backwash from ultrafiltration (UF) and reverse osmosis (RO) systems. These systems are known to concentrate pollutants in the discharge where the ambient stream used as source water has this pollutant present in amounts which may be concentrated to above Missouri Water Quality Standards by the UF and RO systems. Monitoring is required to fully characterize the discharge and to determine reasonable potential to exceed water quality standards for this pollutant.

OUTFALL #INT – INTAKE

INFLUENT TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW AT INTAKE	MGD	*	*	NEW	ONCE/DAY	MONTHLY	24 HR. TOT
TEMPERATURE (STREAM OR INTAKE)	°F	*	*	NEW	ONCE/DAY	MONTHLY	GRAB
CONVENTIONAL							
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	*	*	SAME	ONCE/MONTH	MONTHLY	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
ARSENIC, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
COPPER, TR	µg/L	*	*	SAME	ONCE/MONTH	MONTHLY	GRAB
IRON, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
FLUORIDE	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB

* Monitoring and reporting requirement only
NEW parameter not established in previous state operating permit
TR Total Recoverable

DERIVATION AND DISCUSSION OF LIMITS FOR INFLUENT MONITORING:

PHYSICAL:

Flow (Intake)
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. Prior to the 2017 renewal permit, the facility was reporting effluent flow in CFS. To become in line with most other facilities in the state, permit was changed in 2017 to MGD. The facility must submit the flow rate for the intake in MGD.

Temperature (River/Intake)
Daily monitoring requirement (°F); T_s = Receiving stream's ambient temperature. The ambient stream temperature can be used or, for many facilities, the intake temperature can be used to determine stream's temperature. This requirement is used to calculate the change in temperature (ΔT) and the maximum temperature (T_{cap}).

CONVENTIONAL:

Total Suspended Solids (Intake)
The department has determined influent measurement of TSS is necessary to determine net limitations for this facility. The process employed at the facility has been known to concentrate solids and metals in the effluent. Monthly monitoring is required to determine the extent of the concentration the solids undergo. Continued from previous permit.

METALS:

Aluminum, Arsenic, Copper, Iron; Total Recoverable (Intake)
The department has determined influent monitoring of copper is necessary to determine upstream concentrations of copper in the Missouri River. The process employed at the facility has been known to concentrate solids and metals in the effluent. Monthly monitoring is required to determine the extent of the concentration the metals undergo. Copper continued from previous permit.

OTHER:

Chloride, Fluoride, Sulfate

The department has determined influent monitoring of these parameters is necessary to determine upstream concentrations in the Missouri River. The process employed at the facility has been known to concentrate pollutants in the effluent. Monthly monitoring is required to determine the extent of the concentration the pollutants undergo. All new requirement.

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 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 two years old, such 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.

✓ This permit will be issued for a period of five years due to the studies required to be submitted with the application for renewal.

PUBLIC NOTICE:
The Department shall give public notice a draft permit has been prepared and its issuance is pending. http://dnr.mo.gov/env/wpp/permits/pn/index.html Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

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

✓ The Public Notice period for this operating permit was from 9/27/2019-10/28/2019; no comments were received.

DATE OF FACT SHEET: OCTOBER 29, 2019

COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
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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.

rec'd 11/11/2021 AP 37906

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	FEE SUBMITTED
JET PAY CONFIRMATION NUMBER	

PLEASE READ ALL THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.
SUBMITTAL OF AN INCOMPLETE APPLICATION MAY RESULT IN THE APPLICATION BEING RETURNED.

IF YOUR FACILITY IS ELIGIBLE FOR A NO EXPOSURE EXEMPTION:
Fill out the No Exposure Certification Form (Mo 780-2828): https://dnr.mo.gov/forms/780-2828-f.pdf

1. REASON FOR APPLICATION:

☐ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – _____, is submitting an application for renewal, and there is no proposed increase in design wastewater flow. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.

☐ b. This facility is now in operation under permit MO – _____, is submitting an application for renewal, and there is a proposed increase in design wastewater flow. Antidegradation Review may be required. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.

☐ c. This is a facility submitting an application for a new permit (for a new facility). Antidegradation Review may be required. New permit fee is required.

☑ d. This facility is now in operation under Missouri State Operating Permit (permit) MO – 0004847 and is requesting a modification to the permit. Antidegradation Review may be required. Modification fee is required.

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Vicinity Energy Kansas City, INC		816-889-4900	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
115 Grand BLVD	Kansas City	MO	64106

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
Vicinity Energy, LLC		763-617-0226	
EMAIL ADDRESS			
Sean.Caldwell@vicinityenergy.us			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
100 Franklin Street, 2nd floor	Boston	MA	02110

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Vicinty Energy Kansas City, INC		816-889-4969	
EMAIL ADDRESS			
Scott.Stordahl@vicinityenergy.us			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
115 Grand BLVD	Kansas City	MO	64106

5. OPERATOR CERTIFICATION

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE	
N/A			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
Scott Stordahl	General Manager	816-215-2880
E-MAIL ADDRESS		
Scott.Stordahl@vicinityenergy.us		

7. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary.

NAME			
City of Kansas CIty			
ADDRESS	CITY	STATE	ZIP CODE
Grand Avenue viaduct Property	Kansas City	MO	64106

8. ADDITIONAL FACILITY INFORMATION

8.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)
For Universal Transverse Mercator (UTM), use Zone 15 North referenced to North American Datum 1983 (NAD83)

001 SW ¼ ____¼ Sec 32 T 50N R 33W Jacksc County
UTM Coordinates Easting (X): _____ Northing (Y): _____

002 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

Include all subsurface discharges and underground injection systems for permit consideration.

8.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
Primary SIC 4961 and NAICS 221330 SIC _____ and NAICS _____
SIC _____ and NAICS _____ SIC _____ and NAICS _____

9. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

A. Is this permit for a manufacturing, commercial, mining, solid/hazardous waste, or silviculture facility? YES ☑ NO ☐
If yes, complete Form C.

B. Is the facility considered a "Primary Industry" under EPA guidelines (40 CFR Part 122, Appendix A) : YES ☐ NO ☑
If yes, complete Forms C and D.

C. Is wastewater land applied? YES ☐ NO ☑
If yes, complete Form I.

D. Are sludge, biosolids, ash, or residuals generated, treated, stored, or land applied? YES ☐ NO ☑
If yes, complete Form R.

E. Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority? YES ☑ NO ☐
If yes, please include a list of all permits or approvals for this facility:
Environmental Permits for this facility: OP2018-006

F. Do you use cooling water in your operations at this facility? YES ☑ NO ☐
If yes, please indicate the source of the water: Missouri River

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

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit https://dnr.mo.gov/env/wpp/edmr.htmfor information on the Department's eDMR system and how to register.

☐ - I will register an account online to participate in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before any reporting is due, in compliance with the Electronic Reporting Rule.

☑ - I have already registered an account online to participate in the Department's eDMR system through MoGEM.

☐ - I have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

☐ - The permit I am applying for does not require the submission of discharge monitoring reports.

11. FEES

Permit fees may be paid by attaching a check, or online by credit card or eCheck through the JetPay system. Use the URL provided to access JetPay and make an online payment:
For new permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591

For modifications: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596

12. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Jonathan Morgan, Regional EHS Manager	580-898-4882
SIGNATURE	DATE SIGNED
	11/10/2021

MO 780-1479 (04-21)

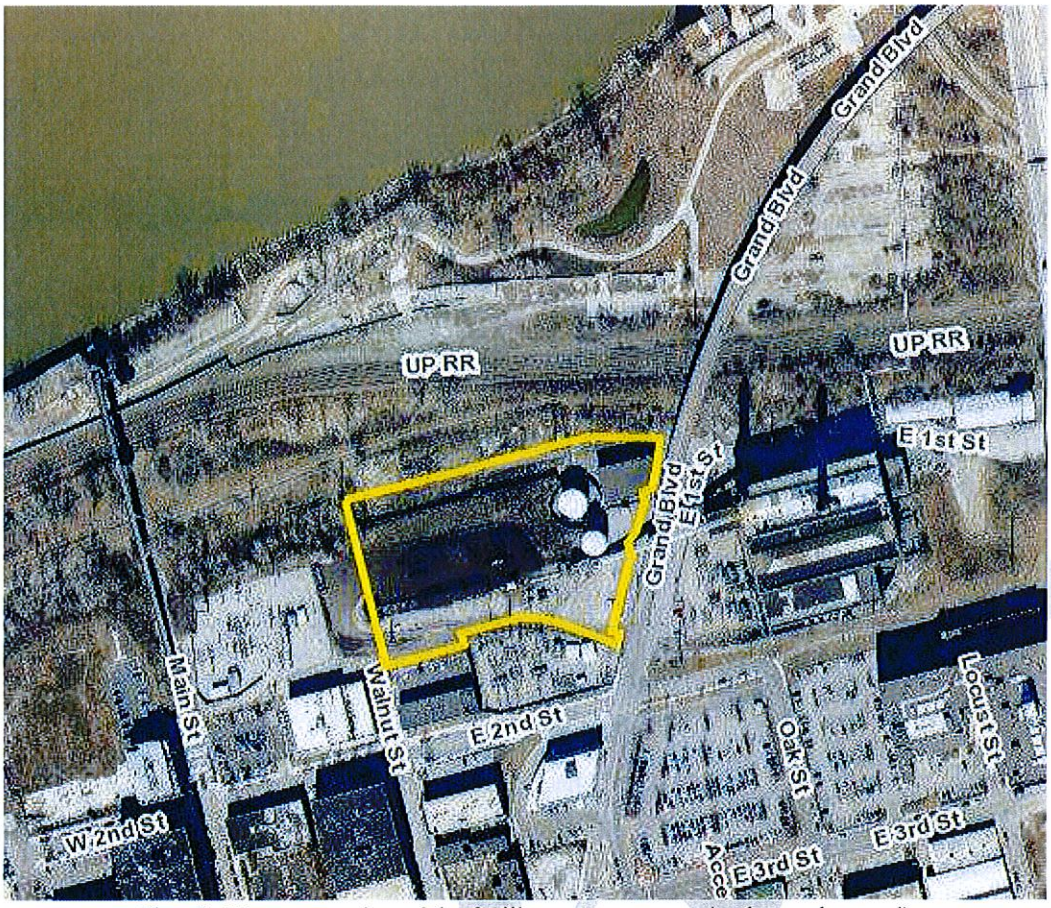

Plate 2: Western portion of the facility—storage area (no longer has coal)

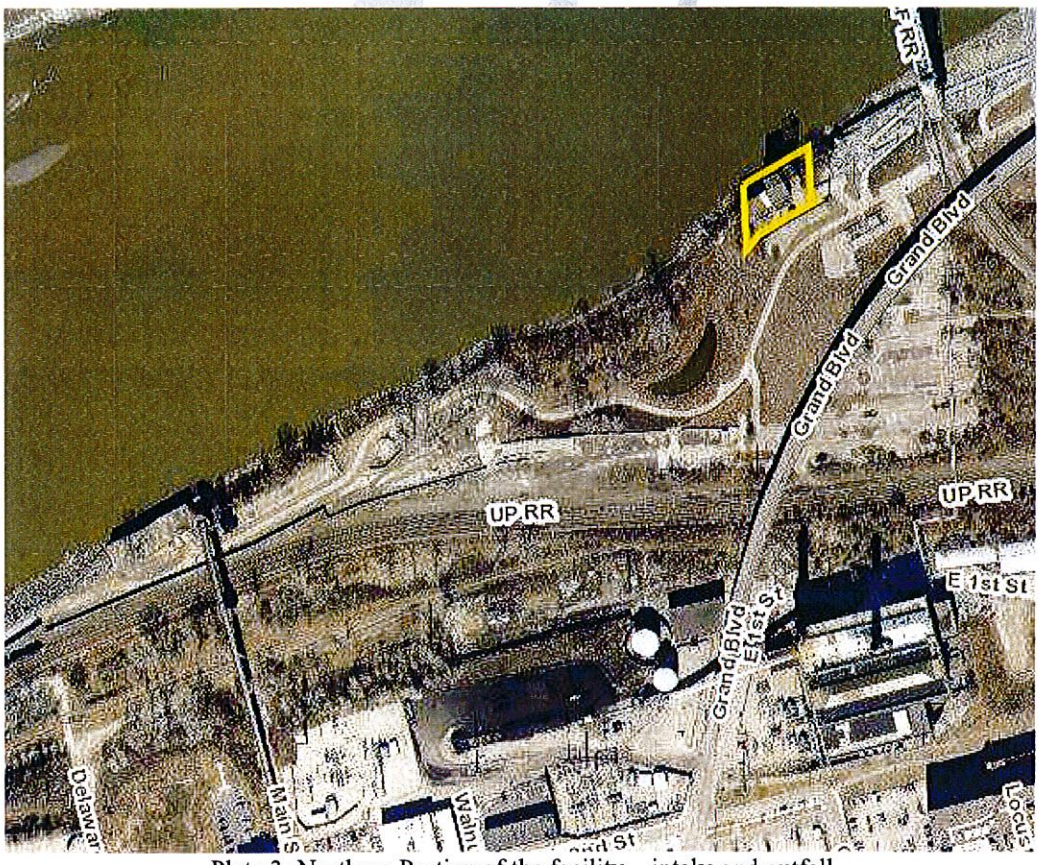

Plate 3: Northern Portion of the facility—intake and outfall

Missouri Department of Natural Resources
Water Protection Program; Industrial Wastewater Unit; NPDES Permitting
1101 Riverside Drive; PO Box 176
Jefferson City, MO 65102

October 21, 2021

Attn. Pam Hackler - Environmental Scientist

Sent via electronic mail to: Pam.Hackler@dnr.mo.gov

Dear Ms. Hackler,

We hope this finds you well. We are reaching out to the MDNR via your office to provide an update on the progress of our effort since our last extension to comply with some of the "Special Condition" requirements and expectations in Vicinity Energy Kansas City, Inc. (Vicinity) NPDES permit, (MO-0004847).

Specifically, we are looking to discuss options we might have to extend the current stated deadlines for D.1.(a-c) of our NPDES permit. Engineering is now complete, and an RFP has been issued with bids expected in December. Our intention is to move forward with the current 316(b) Best Technology Available (BTA) identified and approved in that permit requiring operational modified traveling water screens with fish return. However, due to many current and ongoing issues (identified below) that are beyond our control, we have concerns that we will not be able to meet the deadline of November 30, 2022. These circumstances include identification of important constraints with modified traveling screens that have led us to consider another technology to achieve compliance.

We are seeking approval for an additional one-year extension of the requirements in section D.1.(a-c) due primarily to the following events and ongoing issues.

1. COVID has delayed the project as it has affected much of the nation's industry. In recent months we have been able to safely travel, and the project is moving forward, however the resurgent Delta variant caused delays in the planning and developing stage this past year.

2. The equipment needed is being delayed due to global impacts of the pandemic on manufacturing and shipping.

3. Additionally, we recently became aware that a "Bat Study" is required by the US Corps of Engineers, to ensure protection of listed-species prior to removal of trees near our pump house that will be used for our laydown area once construction commences.

4. As part of the design and procurement process, we understand that site-specific constraints for using modified traveling screens make our vendor selection decision more complicated and that assessing bids will take longer than we anticipated.

5. Finally, we identified a potential alternative to the modified screens and fish return that would reduce the flows to below 0.5 ft/sec which may be preferable and could substantially reduce impingement mortality beyond modified traveling screens. We are moving in parallel with this new evaluation and the original design/procurement efforts until the alternate technology is fully evaluated.

There are other less impactful reasons for the delays and need of an extension, but we want to keep this request as clear and concise for expeditious and practical reasons.

In summary, Vicinity Energy Kansas City is formally requesting an extension of one year to be added to our existing deadlines for completion of Section D. Special Conditions 1.(a-c) of our current NPDES permit, #MO0004847, bringing the deadline for completion of these items to November 30, 2023.

Please let me know if there is additional information required, or if you have any questions regarding this request. We look forward to your response.

Regards,

DocuSigned by:

2ADF4BD29FDA442...

Charles Melcher
VP of Operations
Vicinity Energy
Office +1-206-710-7330
Charles.melcher@vicinityenergy.us