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-0139050
Owner:	Kerry Ingredients Inc.
Address:	3400 Millington Road, Beloit, WI 53511
Continuing Authority:	Kerry Ingredients Inc.
Address:	3400 Millington Road, Beloit, WI 53511
Facility Name:	Kerry Ingredients and Flavours - Greenville
Address:	HCR 2 Box 2560, Highway E, Greenville, MO 63944
Legal Description:	Sec. 34, T29N, R6E, Wayne County
UTM Coordinates:	X = 732295, Y = 4114034
Receiving Stream:	Tributary to Goose Creek
First Classified Stream and ID:	8-20-13 MUDD 1.0 (C) (3960)
USGS Basin & Sub-watershed No.:	07140107-0102

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 #003 – Cooling Tower Blowdown only; SIC # 2099
This industrial facility does not require a certified wastewater operator.

Design Flow: 0.0288 MGD
Average Flow: unknown – new discharge; see accompanying antidegradation review

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.

February 1, 2019
Effective Date

February 1, 2023
Modification Date

January 31, 2024
Expiration Date

Chris Wieberg, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #003 *cooling tower*	**TABLE A-1** **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 **FEBRUARY 1, 2019** 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	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
Temperature	°F	90	90	once/month	measured
CONVENTIONAL					
Chemical Oxygen Demand	mg/L	*	*	once/month	grab
Chlorine/Bromine, Total Residual Φ	µg/L	17 (ML130)	8 (ML130)	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
pH	SU	6.5 to 9.0	6.5 to 9.0	once/month	grab
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/month	grab
Copper, Total Recoverable	µg/L	351	212	once/month	grab
NUTRIENTS					
Nitrogen, Total (TN)	mg/L	*	*	once/month	grab
Phosphorus, Total (TP)	mg/L	*	*	once/month	grab
OTHER					
Chloride	mg/L	378	188	once/month	grab
Sulfate	mg/L	*	*	once/month	grab
Chloride plus Sulfate	mg/L	*	*	once/month	grab
Hardness	mg/L	*	*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
Whole Effluent Toxicity, Chronic See Special Condition #1	TU_c	1.6		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2020. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

* Monitoring and reporting requirement only.

Ω The facility will report the minimum and maximum values. pH is not to be averaged.

Φ This permit contains a Total Residual Chlorine/Bromine (TRC/B) limit below the minimum quantification level (ML) of the most sensitive EPA approved CLTRC methods. The Department has determined the current acceptable ML for total halogens to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
   (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013; Table IA, 40 CFR Part 136).* The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
      - The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).

- The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).

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

(c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.

(d) The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.

(e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.

(f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

(g) Accelerated Testing Trigger: If the regularly scheduled chronic WET test exceeds the TU_c limit, the permittee shall conduct accelerated follow-up WET testing as prescribed in the following conditions. Results of the follow-up accelerated WET testing shall be reported in TU_c. This permit requires the following additional toxicity testing if any one test result exceeds a TU_c limit.

(1) A multiple dilution test shall be performed for both test species within 60 calendar days of becoming aware the regularly scheduled WET test exceeded a TU_c limit, and once every two weeks thereafter until one of the following conditions are met:

i. Three consecutive multiple-dilution tests are below the TU_c limit. No further tests need to be performed until next regularly scheduled test period.

ii. A total of three multiple-dilution tests exceed the TU_c limit.

(2) Follow-up tests do not negate an initial test result.

(3) The permittee shall submit a summary of all accelerated WET test results for the test series along with complete copies of the laboratory reports as received from the laboratory within 14 calendar days of the availability of the third test exceeding a TU_c limit.

(h) TIE/TRE Trigger: The following shall apply upon the exceedance of the TU_c limit in three accelerated follow-up WET tests. The permittee should contact the Department within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact the Department upon the third follow up test exceeding a TU_c limit, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE within 60 calendar days of the date of the automatic trigger or the Department's direction to perform either a TIE or TRE. The plan shall be based on EPA Methods and include a schedule for completion. This plan must be approved by the Department before the TIE or TRE is begun.

2. Electronic Discharge Monitoring Report (eDMR) Submission System

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

(1) Schedule of Compliance Progress Reports; and

(2) Any additional report required by the permit excluding bypass reporting.
After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.

(b) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:

(1) General Permit Applications/Notices of Intent to discharge (NOIs);

(2) Notices of Termination (NOTs);

(3) No Exposure Certifications (NOEs);

(4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and

(5) Bypass reporting.

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

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

waiver request may submit monitoring data and reports on paper to the Department for the period the approved electronic reporting waiver is effective.

3. 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).

4. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.

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

6. 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).

7. 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.

8. 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) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter, then zero (0) is reported for the parameter.
   (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).

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS MO-0139050
KERRY INGREDIENTS AND FLAVOURS - GREENVILLE

This Statement of Basis (Statement) gives pertinent information regarding modification to the above listed operating permit. A Statement is not an enforceable part of a Missouri State Operating Permit.

PART I – FACILITY INFORMATION

Facility Type and Description: same

PART II – MODIFICATION RATIONALE

This operating permit is hereby modified to implement the results of a Biotic Ligand Model for copper. Typographical changes, pagination, and formatting also occurred.

ANTIBACKSLIDING:

Federal antibacksliding requirements [CWA §402(o) and 40 CFR § 122.44(l) https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-122#p-122.44(l) generally prohibit a reissued permit from containing effluent limitations that are less stringent than the previous permit, with some exceptions. All renewed permits are analyzed for evidence of backsliding. There are several express statutory exceptions to the antibacksliding requirements, located in CWA § 402(o)(2) and 40 CFR 122.44(l).

- ✓ Revised limitations in this operating permit reissuance conform to the anti-backsliding provisions pursuant to CWA §303(d)(4)(B) for waters attaining uses. Copper is not an impairment for any nearby water. The initial antidegradation limits were based solely on WQS. The change is based on new information and in compliance with antidegradation review requirements; there is no review required pursuant to the antidegradation policy as the wastewater flow is not increasing.

WLA MODELING:

A Biotic Ligand Model (BLM) was submitted for copper. The results of the study are implemented in this modification. See Appendix B. The May 4, 2022 approval from DNR's Watershed Protection Section listed the Chromic Maximum Concentration (CMC) as 390 µg/L, and the Chronic Continuous Concentration (CCC) as 242 µg/L. The hardness used for the study was 169 mg/L. The values below were calculated utilizing normal TSD methods for calculating a permit limit from WQS. Study data was used to determine facility variability (CV). Table A-1 was changed to reflect these values. The conditions for copper are superseded in this modification.

Copper Limit Derivation

CMC 390 µg/L
CCC 242 µg/L
LTAa: WLAa * LTAa multiplier = 390 * 0.449 = 175.176 [CV: 0.388, 99th %ile]
LTAc: WLAc * LTAc multiplier = 242 * 0.652 = 157.695 [CV: 0.388, 99th %ile]
use most protective LTA: 157.695
Daily Maximum: MDL = LTA * MDL multiplier = 157.695 * 2.226 = 351.1 µg/L [CV: 0.388, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 157.695 * 1.346 = 212.3 µg/L [CV: 0.388, 95th %ile, n=4]

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. 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 starts December 9, 2022 and ends January 9, 2023. No comments were received.

DATE OF STATEMENT OF BASIS: NOVEMBER 10, 2022

COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
2019 FACT SHEET FOR THE PURPOSE OF NEW OPERATING PERMIT
MO-0139050; KERRY INGREDIENTS AND FLAVOURS – GREENVILLE

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: Industrial
SIC Code(s): 2099 - Food Preparations, Not Elsewhere Classified
NAICS Code(s): 311942 - Spice and Extract Manufacturing
Application Date: 07/27/2018

FACILITY DESCRIPTION:
Kerry's Greenville facility manufactures and distributes smoke process products for the food and beverage industry. The major operations conducted at the facility consist of sawdust and wood chip handling and drying, calciner operations (thermal treatment applied to the sawdust/wood chips), raw material and finished product storage, and material loading/unloading. Water is supplied to the facility via an onsite groundwater well withdrawing from an aquifer at a depth of 720 feet (pump positioned at approximately 480 feet). Wastewater streams generated onsite currently include sanitary wastewater, miscellaneous process washdowns, noncontact cooling tower blowdown, and water softener backwash (if unable to be incorporated into product). These wastewater streams are currently managed through the onsite septic system. However Kerry recently began pursuing an expansion project which would increase the production capacity at the facility requiring utilities supporting these functions to be expanded (i.e. water softening and cooling water). The septic system is not hydraulically capable of managing the increased cooling water flow and Kerry is therefore pursuing permitting this stream as a surface water discharge. Contained herein is the description of the proposed discharge: Outfall #003 (noncontact cooling tower blowdown) which will be conveyed to Goose Creek via existing stormwater outfalls 001.

Water softener backwash is not permitted for discharge by this permit. Stormwater from this facility is managed by permit MO-R130068.

The charter number for the continuing authority for this facility is F00405044; 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 an email dated 12/17/2018.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#003	unknown	0.0288 MGD	none	Cooling Tower Blowdown

FACILITY PERFORMANCE HISTORY & COMMENTS:
This is a new discharge; an antidegradation review was completed; see Appendix A. No historical data exist.

FACILITY MAP:

PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY'S WATER QUALITY:
The receiving waterbody has no current water quality data available.

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
✓ Not applicable; this facility does not discharge to an impaired segment of a 303(d) listed stream.

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/
✓ Not applicable; this facility does not discharge to a waterbody/watershed with a TMDL.

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
✓ All Other Waters

RECEIVING WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO SEGMENT	12-DIGIT HUC
#003	Tributary to Goose Creek	n/a	n/a	General Criteria	0.0 mi	07140107-0102
	8-20-13 MUDD V1.0	C	3960	AQL, HHP, IRR, LWW, SCR, WBC(B)	0.2 mi	

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:
For all outfalls, mixing zone and zone of initial dilution are not allowed per 10 CSR 20-7.031(5)(A)4.B.(I)(a) and (b), as the base stream flow does not provide dilution to the effluent.

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

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.
✓ Not applicable; the facility does not discharge to a losing stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or 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.
✓ New discharge, backsliding does not apply.

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
✓ Applicable; new process water discharge, please see APPENDIX A – ANTIDEGRADATION ANALYSIS.

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.
✓ Not applicable; the facility does have stormwater discharges but is currently regulated under MOR130068.

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.

EFFLUENT LIMITATION GUIDELINE:
Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.
✓ The facility does not have an associated ELG.

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 State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect the specified narrative criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist, the permit may include monitoring to later determine the discharges potential to impact the receiving stream's narrative criteria. It should also be noted Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
- 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.
- There is RP for unsightly or harmful bottom deposits therefore this permit contains a TSS limit.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- There is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates oil will be present in sufficient amounts to impair beneficial uses.
- There is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates scum and 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.
- There is RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses; the facility is expected to discharge TSS which may cause turbidity in the receiving stream.
- 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.
- This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.

(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.

- There is RP for physical changes that would impair the natural biological community; this permit implements TSS limits.
- There is RP for chemical changes that would impair the natural biological community - this is very similar to (D) above, see Part IV, Effluent Limits Derivation below.
- 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.

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

✓ It is unknown if this facility falls under the definition of major water user and is not registered with the Department. The facility must register with the Department if the requirements are met. Registration can be completed at this website: https://dnr.mo.gov/MWU/

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.

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).

✓ Not applicable; a mathematical RPA was not conducted for this facility as it is a new discharge.

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.

✓ Not applicable; this permit does not contain a SOC due to a SOC is not applicable for this facility.

SPILL REPORTING:
Per 10 CSR 24-3.010, 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).
✓ Permittee is not authorized to land apply biosolids. Sludge/biosolids are stored in the septic tank.

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

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute Water Quality Standards (WQSs) are based on one hour of exposure, and must be protected at all times. Therefore, industrial stormwater facilities with toxic contaminants present in the stormwater may have the potential to cause a violation of acute WQSs if toxic contaminants occur in sufficient amounts. In this instance, the permit writer may apply daily maximum limitations.

Conversely, it is unlikely for rainfall to cause a discharge for four continuous days from a facility; if this does occur however, the receiving stream will also likely sustain a significant amount of flow providing dilution. Most chronic WQSs are based on a four-day exposure with some exceptions. Under this scenario, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

A standard mass-balance equation cannot be calculated for stormwater from this facility because the stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day or storm event. The amount of stormwater discharged from the facility will vary based on current and previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability may increase the stream flow dramatically over a short period of time (flash).

Numeric benchmark values are based on site specific requirements taking in to account a number of factors but cannot be applied to any process water discharges. First, the technology in place at the site to control pollutant discharges in stormwater is evaluated. The permit writer also evaluates other similar permits for similar activities. A review of the guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) may also occur. Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard may also be used. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without

resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.
40 CFR 122.44(b)(1) requires the permit implement the most stringent limitations for each discharge, including industrially exposed stormwater; and 40 CFR 122.44(d)(1)(i) and (iii) requires the permit to include water-quality based effluent limitations where reasonable potential has been found; however, because of the non-continuous nature of stormwater discharges, staff are unable to perform statistical Reasonable Potential Analysis (RPA). Reasonable potential determinations (RPDs; see REASONABLE POTENTIAL above) using best professional judgment are performed.

Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the conditions of the permit.

BMP inspections typically occur more frequently than sampling. Sampling frequencies are based on the facility's ability to comply with the benchmarks and the requirements of the permit. Inspections should occur after large rain events and any other time an issue is noted; sampling after a benchmark exceedance may need to occur to show the corrective active taken was meaningful.

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.

- ✓ Applicable, this facility has stormwater-only outfalls but are regulated under MOR130068 at this time. The facility may not terminate permit MOR130068 until the stormwater outfalls are listed under this permit.

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.

If parameter-specific numeric benchmark exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: https://dnr.mo.gov/forms/#WaterPollution

✓ Applicable; a SWPPP was developed and implemented for this facility under MOR130068.

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.

✓ Applicable; this facility has stated they are currently discharging domestic wastewater and process wastewater subsurface; the facility must register the Class V well with the state.

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 were calculated where relevant using water quality criteria or water quality model results and by applying the dilution equation below:

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

Where C = downstream concentration

Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

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

WLA MODELING:
Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.
✓ Not applicable; a WLA study was either not submitted or determined not applicable by Department staff.

PART IV. EFFLUENT LIMITS DETERMINATIONS

OUTFALL #003 – COOLING TOWER BLOWDOWN

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	NEW	ONCE/MONTH	ONCE/MONTH	24 HR. TOT
TEMPERATURE	°F	90	90	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
CONVENTIONAL							
COD	mg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
CHLORINE, TOTAL RESIDUAL	µg/L	17 (ML130)	8 (ML130)	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
PH Ω	SU	6.5 TO 9.0	6.5 to 9.0	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	100	30	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
COPPER, TR	µg/L	22.0	14.0	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
NUTRIENTS							
NITROGEN, TOTAL N (TN)	mg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
PHOSPHORUS, TOTAL P (TP)	mg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
OTHER							
CHLORIDE	mg/L	378	188	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
SULFATE	mg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
CHLORIDE PLUS SULFATE	mg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
HARDNESS	mg/L	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
WET TEST - CHRONIC	TUc	1.6	-	NEW	ONCE/YEAR	ONCE/YEAR	GRAB

* Monitoring and reporting requirement only
Ω Report the minimum and maximum pH values; pH is not to be averaged
NEW permit is new
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. The facility will report the total flow in millions of gallons per day (MGD).

Temperature
90 °F per antidegradation review; see Appendix A.

CONVENTIONAL:

Chemical Oxygen Demand (COD)
Monitoring required per antidegradation review, Appendix A.

Chlorine/Bromine, Total Residual (TRC/B) [Halogens]
17 µg/L daily maximum and 8 µg/L monthly average. Compliance language for TRC/B, including the minimum level (ML), is described on page 2 of the permit. See Appendix A, antidegradation review.

Total Suspended Solids (TSS)
100 mg/L daily maximum; 30 mg/L monthly average per antidegradation review, see Appendix A.

METALS:

Aluminum, Total Recoverable
Monthly monitoring required, see antidegradation review, Appendix A.

Copper, Total Recoverable
22.0 µg/L daily maximum; 14.0 µg/L monthly average, see antidegradation review, Appendix A.

NUTRIENTS:

Nitrogen, Total N (TN)
Monthly monitoring required, see antidegradation review, Appendix A.

Phosphorous, Total P (TP)
Monthly monitoring required, see antidegradation review, Appendix A.

OTHER:

Chloride
378 mg/L daily maximum; 188 mg/L monthly average; see antidegradation review, Appendix A.

Sulfate
Monthly monitoring required, see antidegradation review, Appendix A.

Chloride plus Sulfate
Monthly monitoring required, see antidegradation review, Appendix A.

Hardness
Monitoring required to determine future water quality limitations.

Whole Effluent Toxicity (WET) Test, Chronic
Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures the provisions in 10 CSR 20-6 and the Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the Department may require other terms and conditions it deems necessary to assure compliance with the CWA and related regulations of the Missouri Clean Water Commission. The following Missouri Clean Water Laws (MCWL) apply: §644.051.3. requires the Department to set permit conditions complying with the MCWL and CWA; §644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits); and §644.051.5. is the basic authority to require testing conditions. WET tests are required by all facilities meeting the following criteria:
✓ Other – new discharge, assessment required.
1.6 TUc; See antidegradation review, Appendix A.

PART V. SAMPLING AND REPORTING REQUIREMENTS

Refer to each outfall's derivation and discussion of limits section to review individual sampling and reporting frequencies and sampling type. Additionally, see Standard Conditions Part I attached at the end of this permit and fully incorporated within.

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.

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

SAMPLING FREQUENCY JUSTIFICATION:
This facility is a new facility monthly sampling is required to determine if the facility will be in compliance with the operating permit in accordance with Appendix U of Missouri's Water Pollution Control Permit Manual.

SAMPLING TYPE JUSTIFICATION:
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.

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.

PART VI. 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 become synchronized by expiring the end of the 3rd quarter, 2022.

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 December 21, 2018 to January 21, 2019. The facility provided comments; responses to the Public Notice of this operating permit did not warrant modification of this permit as no Schedule of Compliance was deemed appropriate.

DATE OF FACT SHEET: DECEMBER 20, 2018
REVISED: JANUARY 23, 2019

COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL SCIENTIST / KEITH FORCK, ENVIRONMENTAL ENGINEER
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT / ENGINEERING SECTION
573-526-3386 / 573-526-4232
Pam.Hackler@dnr.mo.gov / Keith.Forck@dnr.mo.gov

Appendix A, Antidegradation Review

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

DEC 21 2018

Mr. Paul Costephens
HCR 2 Box 2560 Highway E
Greenville, MO 63944

RE: Water Quality and Antidegradation Review Preliminary Determination for Kerry Ingredients and Flavours - Greenville, MO-0139050, Wayne County

Dear Mr. Costephens:

In accordance with the *Missouri Antidegradation Rule and Implementation Procedure (AIP)*, your proposed discharge is subject to an Antidegradation Review. The enclosed *Water Quality and Antidegradation Review (WQAR)* summarizes this preliminary determination based upon your *Antidegradation Report (Executive Summary) for Kerry Ingredients and Flavours - Greenville* Report dated July 27, 2018, which proposed implementation of an ion exchange for the non-contact cooling tower blowdown water as the preferred alternative.

The WQAR contains pertinent antidegradation review information based on the use of existing water quality, effluent limitations and monitoring requirements for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (AIP) dated July 13, 2016, U.S. Environmental Protection Agency (EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources (Department) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4. The WQAR would also allow you to pursue construction of one of the other approved reasonable alternatives without the need to modify this Antidegradation review.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, an engineering report, or a facility plan. These submittals must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited.

Recycled paper

To reduce cost and time spent scanning permit applications, plans, and specification, the Water Protection Program's Engineering Section has begun asking for electronic copies of submitted documents in addition to paper copies. While it is not currently a requirement, submittal of electronic documents on a compact disc or other removable electronic media is being proposed in the new rulemaking for 10 CSR 20-6.010.

Following the Department's public notice of draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the Department will review any public notice comments received. If significant comments are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final.

Following issuance of the construction permit and completion of the actual facility construction, the Department will proceed with the issuance of the operating permit.

Some projects are eligible for funding through the Department's Clean Water State Revolving Fund (CWSRF) Program. Applications for funding and guidance documents can be found at https://dnr.mo.gov/env/wpp/srf/wastewater-project-guidance.htm. Project eligibility determinations are made, in accordance with 10 CSR 20-4.040. Projects that are eligible for funding are listed on the Intended Use Plan, provided additional CWSRF requirements are met, including but not limited to environmental review requirements, public hearing requirements, user charge requirements and approval of construction plans and specifications. For questions related to the CWSRF Program, please contact Joan Doerhoff, Financial Assistance Center Coordinator Unit Chief, at 573-526-0940.

If you should have questions, please feel free to contact Keith Forck by telephone at (573) 526-4232 by e-mail at keith.forck@dnr.mo.gov, or by mail at P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

Refaat Mefrakis

Refaat Mefrakis, P.E., Chief
Engineering Section

Enclosures

RM:kfn

c: Ms. Beth Eckley, Ramboll beckley@ramboll.com

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
Engineering Section

Water Quality and Antidegradation Review

For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
Tributary to Goose Creek

by
Kerry Ingredients and Flavours - Greenville

December 2018

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1. FACILITY INFORMATION

FACILITY NAME: Kerry Ingredients and Flavours - Greenville NPDES #: MO-0139050

FACILITY TYPE: INDUSTRIAL – Food Preparation – SIC #2099
FACILITY DESCRIPTION: As a result of the submitted alternative analysis, the applicant's preferred alternative is implementation of an ion exchange for the non-contact cooling tower blowdown water. The design flow will be 0.0288 MGD from Outfall #003.

COUNTY:	Wayne	UTM COORDINATES:	X = 732322 / Y = 4114162
12- DIGIT HUC:	07140107-0102	LEGAL DESCRIPTION:	NW ¼, Section 34, T29N, R6E
EDU*:	Ozark/Upper St. Francis/Castor	ECOREGION:	Ozark Highland

* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (Department) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised July 13, 2016, a facility is required to use *Missouri's Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

New outfall – no history. No receiving water information.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
003	0.0445	Ion Exchange	Tributary to Goose Creek	0.2

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Tributary to Goose Creek	-	-	0.0	0.0	0.0	General Criteria
8-20-13 MUDD V1.0	C	3960	-	-	-	AQL, HHP, IRR, LWW, SCR, WBC(B)

** Irrigation (IRR), Livestock & Wildlife Protection (LWP), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

RECEIVING WATER BODY SEGMENT #1: Tributary to Goose Creek and Goose Creek
Upper end segment* UTM coordinates: X = 732326 / Y = 4114162 (Outfall)
Lower end segment* UTM coordinates: X = 739372 / Y = 4115374 (confluence with Bear Creek)

* Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. General Comments

Ramboll Engineering prepared, on behalf of Kerry Ingredients and Flavours - Greenville, the *Antidegradation Report (Executive Summary)* for Kerry Ingredients and Flavours - Greenville dated July 27, 2018. Applicant elected to assume that all pollutants of concern (POC) are significantly degrading the receiving stream in the absence of existing water quality. An alternative analysis was conducted to fulfill the requirements of the AIP. No dissolved oxygen modeling analysis was submitted for review. Information that was provided by the applicant in the submitted report and summary forms in Appendix C was used to develop this review document.

Geohydrological Evaluation has been requested and the report is expected to show that that the receiving stream is gaining for discharge purposes (Appendix A: Map). This report is expected before the end of the year and if the report states losing, then the pollutants will need to be re-evaluated for groundwater protection in the WQAR.

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and records of endangered species were found for the project area. It is recommended that the U.S. Fish and Wildlife Service and the Missouri Department of Conservation be contacted for further coordination (see Appendix B).

5. Antidegradation Review Information

The following is a review of the *Antidegradation Report* dated July 27, 2018.

5.1. Tier Determination

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix C), Pollutants of concern are defined as those pollutants "proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge." (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix C).

Table 1. Pollutants of Concern and Tier Determination

Pollutants of Concern	Tier*	Degradation	Comment
Temperature	2	Significant	
Chemical Oxygen Demand	**	Significant	
Total Suspended Solids (TSS)	**	Significant	
Total Nitrogen	2	Significant	
Total Phosphorus	2	Significant	
Chloride	2	Significant	
Sulfate	2	Significant	
Chlorine/Bromine, Total Recoverable	2	Significant	
pH	***	Significant	Permit limits applied
Aluminum, Total Recoverable	2	Significant	
Copper, Total Recoverable	2	Significant	
Whole Effluent Toxicity - Chronic	2	Significant	

* Tier assumed. Tier determination not possible: ** No in-stream standards for these parameters. *** Standards for these parameters are ranges

The following Antidegradation Review Summary attachments in Appendix D were used by the applicant:

For pollutants of concern, the attachments are:
☒ Attachment A, Tier 2 with significant degradation.

5.2. Existing Water Quality

No existing water quality data was submitted. All POCs were considered to be Tier 2 and significantly degraded in the absence of existing water quality.

5.3. No Discharge Evaluation

According to 10 CSR 20-6.010 (4)(D), reports for the purpose of constructing a wastewater treatment facility shall consider the feasibility of constructing and operating a no discharge facility. Because Missouri's antidegradation implementation procedures specify that if the proposed activity results in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Part of that analysis as shown below is the non-degrading or no discharge evaluation. See Section 5.4.1 discussion for the regionalization alternative.

Surface irrigation was considered impracticable due to lack of adequate available land for application of wastewater.

5.4. Demonstration of Necessity and Social and Economic Importance

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Six alternatives from non-degrading to less degrading to degrading alternatives were evaluated. Alternative #1, non-degrading surface irrigation, was eliminated as impracticable due to not enough adequate land available. Alternative #2, non-degrading reuse/recycle, was eliminated as impracticable due to being too much water. Alternative #3, non-degrading discharge to regional wastewater system, was eliminated as impracticable due to distance and inadequate capacity. Only the ion exchange, Alternative #4, was considered practicable. Alternative #5, filtration is not expected to achieve reduction in the copper concentration due to the copper being in the dissolved form. Alternative, #6, chemical precipitation could be effective, but effectiveness treatability studies would need to be conducted and this study cannot reliably be conducted until the system is operating. Due to this uncertainty, this technology was considered impracticable.

5.4.1. Regionalization Alterative

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional wastewater collection system is mentioned. The applicant provided discussion of this alternative. The alternative analysis mentions the City of Greenville as the regional authority, but does not have adequate capacity. This authority is not operative in the area at this time so a waiver required under 10 CSR 20-6.010(3) (B) 1 Continuing Authorities was not obtained.

Needs a Waiver to prevent conflict with area wide management plan approved under Section 208 of the Clean Water Act and/or under 10 CSR 20-6.010(3) (B) 1 or 2 Continuing Authorities? (Y or N) N

5.3.2 Losing Stream Alterative Discharge Location

Under 10 CSR 20-7.015(4) (A), *discharges to losing stream shall be permitted only after other alternatives including land application, discharge to gaining stream and connection to a regional facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.* Without new information, it is believed that the discharge does not discharge to a losing stream segment or will not discharge with 2 miles of a losing stream segment.

5.3.3 Social and Economic Importance Evaluation

The applicant first identified the community that will be affected by the proposed degradation of water quality. The affected community is those living near the site, City of Greenville, and Wayne County. Secondly, a number of relevant factors were identified including increasing by 60 percent the locally sourced raw material purchases, 142 temporary and 4 full-time employees will be employed due to this expansion, and Wayne County has high poverty rate and low median household income. Within a Social and Economic Benefits section each factor was evaluated. Appendix D, Attachment A: Tier 2 with Significant Degradation form contains a summary of this information.

6. General Assumptions of the Water Quality and Antidegradation Review

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.

7. Mixing Considerations

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

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

Kerry Ingredients and Flavours - Greenville
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8. Permit Limits and Monitoring Information

Wasteload Allocation Study Conducted (Y or N):	N	Use Attainability Analysis Conducted (Y or N):	N	Whole Body Contact Use Retained (Y or N):	Y

OUTFALL #003

Wet Test (Y or N):	Y	Frequency:	Once/Year	AEC:	100%	Method:	Multiple/ chronic

Table 3. Effluent Limits Outfall 003

Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Basis for Limit (Note 1)	Monitoring Frequency
Flow	MGD	*		*	FSR	Once/Month
Temperature	°F	90		90	FSR	Once/Month
Chemical Oxygen Demand$_5$	MG/L	*		*	PEL	Once/Month
Total Suspended Solids	MG/L	100		30	PEL	Once/Month
Total Nitrogen	MG/L	*		*	PEL	Once/Month
Total Phosphorus	MG/L	*		*	PEL	Once/Month
Chloride	MG/L	378		188	FSR	Once/Month
Sulfate		*		*	FSR	Once/Month
Chlorine/Bromine, Total Residual	µG/L	17 ML<130		8 ML<130	FSR	Once/Month
pH	SU	6.5–9.0		6.5–9.0	FSR	Once/Month
Aluminum, Total Recoverable	µG/L	*		*	FSR	Once/Month
Copper, Total Recoverable	µG/L	22.0		14.0	FSR	Once/Month
Hardness	MG/L	*		*	FSR	Once/Month
Whole Effluent Tox. –Chronic	TUc	1.6		-	FSR	once/year

Note 1– Water Quality-based Effluent Limitation – WQBEL; or Minimally Degrading Effluent Limit – MDEL; or Preferred Alternative Effluent Limit – PEL; or Technology-based Effluent Limit – TBEL; or No Degradation effluent Limit – NDEL; or Federal/State Regulation – FSR; or Not Applicable – N/A. Also, please see the **General Assumptions of the WQAR #4 & #5.**

* Monitoring requirements only.

9. Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

10. Derivation and Discussion of Limits

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow
C_e = effluent concentration
Q_e = effluent flow

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

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

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD_5 and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III.

OUTFALL #003 – LIMIT DERIVATION

- **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.

- **Temperature**. In accordance with 10 CSR 20-7.031(5)(D), water contaminant sources shall not cause or contribute to stream temperature in excess of ninety degrees Fahrenheit (90 °F).

- **Chemical Oxygen Demand (COD)**. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. An increase in COD may indicate excessive materials/chemicals treating the cooling water and may indicate a need for maintenance or improvement of operational controls.

- **Total Suspended Solids (TSS)**. There is no water quality standard for TSS; however, excessive sediment discharges may impact instream water quality. TSS is also a valuable indicator parameter. An increase in TSS may indicate a need for maintenance of improvement of operational controls. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. From consultation with the permittee the proposed limits of 100 mg/L daily maximum and 30 mg/L monthly average are considered achievable.

- **Nitrogen, Total**. Monitoring only. The permittee indicated that this pollutant is present in the discharge. Monitoring will be included to determine reasonable potential.

- **Phosphorus, Total**. Monitoring only. The permittee indicated that this pollutant is present in the discharge. Monitoring will be included to determine reasonable potential.

- **Chloride**. Protection of Aquatic Life CCC = 860 mg/L, CMC = 230 mg/L [10 CSR 20-7.031(4)(L)].

  $LTA_c = 230\ (0.527) = 121.2$ mg/L [CV = 0.6, 99th Percentile, 30 day avg]
  $LTA_a = 860\ (0.321) = 276.1$ mg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_a or LTA_c.

  MDL = 121.2 (3.11) = 378 mg/L [CV = 0.6, 99th Percentile]
  AML = 121.2 (1.55) = 188 mg/L [CV = 0.6, 95th Percentile, n = 30]

  The "base case" for chloride was no treatment as the facility believed that there is no reasonable potential for this pollutant. The ion exchange treatment for copper will provide some treatment for chlorides as a side benefit, therefore the ion exchange is considered the preferred alternative for chloride. Because the efficiency of ion exchange for removing chloride is unknown, water quality based limits will be placed in the permit. A reasonable potential analysis may be conducted at renewal as there is not enough data at this time.

- **Sulfate**. Monitoring only. The permittee indicated that this pollutant is present in the discharge. Monitoring will be included to determine reasonable potential.

- **Chlorine/Bromine, Total Residual (TRC/TRB)**. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background = 0 µg/L. The permittee uses chorine and/or bromine in the cooling system. Both chlorine and bromine behave nearly identically in the freshwater environment causing rapid chemical oxidation reactions with available molecules. These halogens are found in the same category of the periodic table, are highly reactive, and neither is found elementally in nature. When determining free available chlorine, the analytical method is the same for both parameters; although no approved method for bromine is found in 40 CFR 136. Detection for chlorine has interferences of other strongly oxidizing molecules and specifically lists bromine presence as interference if only chlorine is to be measured. All field tests measure chlorine, bromine, and any other oxidizing agents present such as iodate, chlorine dioxide, ozone, permanganate, hydrogen peroxide, and disinfection byproducts such as chlorite and chlorate without indemnity, and provide the summation of these parameters in the colorimetric result. Effluent limitation guidelines and Missouri Water Quality Standards do not include bromine; however, given the inherent similarity, the permit writer has determined bromine and chlorine may be considered the same pollutant therefore they are both covered under this permit. The permit writer has determined using chlorine limitations from the effluent limitation guideline at 40 CFR 423 for freely available chlorine, and Missouri Water Quality Standards for total recoverable chlorine to be the best course forward at this time to provide coverage for bromine under technology-based limitations and analysis and calculations for water quality-based limitations. Part IV provides the determination of the limits.

  Acute WLA: $C_e = 19$ µg/L
  Chronic WLA: $C_e = 10$ µg/L
  $LTA_a = 19\ (0.321) = 6.1$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_c = 10\ (0.527) = 5.3$ µg/L [CV = 0.6, 99th Percentile]
  Use most protective number of LTA_a or LTA_c.
  MDL = 5.3 (3.11) = 16.5 µg/L [CV = 0.6, 99th Percentile]
  AML = 5.3 (1.55) = 8.2 µg/L [CV = 0.6, 95th Percentile, n = 4]

Standard compliance language for TRC, including the minimum level (ML), will be described in the permit.

- **pH**. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units.

Metals

Hardness Dependent Metals:

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L. This hardness is the department current default procedure. Please note that the Clean Water Commission has adopted changes to the water quality standard such that the hardness value on the 50 percentile value and a new default way based on ecoregions would use a value of 110 mg/L for this facility. This is not being applied because these standards have not yet been approved by the U.S. Environmental Protection Agency.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and adsorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

- **Aluminum, Total Recoverable**. Monitoring only. The permittee indicated that they believe this pollutant is present in the discharge. The permit writer has used best professional judgment to include monitoring to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream.

- **Copper, Total Recoverable**. Daily maximum limit of 22 µg/L, monthly average limit of 14 µg/L. Application received on 7/27/2018 reported 56.1 µg/L of copper as a reference sample for this outfall. This value exceeds water quality standards. Effluent limits will be included in this permit to protect the aquatic life water quality standard found in 10 CSR 20-7.031 Table A. Copper water quality standards are dependent on hardness. Site specific hardness was not available for this outfall, and a standard hardness of 162 mg/L was used to calculate limits.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960

Acute AQL WQS: $e^{(0.9422 * \ln 162 - 1.7003)} * 0.960 = 21.2$ [at Hardness 110]
Chronic AQL WQS: $e^{(0.8545 * \ln 162 - 1.7020)} * 0.960 = 13.5$ [at Hardness 110]
Acute TR WQS: $21.2 \div 0.96 = 22.0$ [Total Recoverable Conversion]
Chronic TR WQS: $13.5 \div 0.96 = 14.0$ [Total Recoverable Conversion]
Acute WLA: $C_e = 22.0$ µg/L [WLA=WQS when no mixing]
Chronic WLA: $C_e = 14.0$ µg/L

The preferred alternative for copper is the installation and operation of an ion exchange process. The ion exchange unit is anticipated to achieve copper concentrations lower than WQBELs, calculated above, but the design and removal efficiency is not yet known so WQBELs will be applied as an upper limit. As stated above, these water quality standards are dependent on hardness and therefore these limits will be recalculated with the hardness data available at the time of renewal.

- **Whole Effluent Toxicity (WET) Test, Chronic.** A WET test is a quantifiable method to determine discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water. Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures the provisions in 10 CSR 20-6 and the Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the Department may require other terms and conditions it deems necessary to assure compliance with the CWA and related regulations of the Missouri Clean Water Commission. The following Missouri Clean Water Laws (MCWL) apply: §644.051.3. requires the Department to set permit conditions complying with the MCWL and CWA; §644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits); and §644.051.5. is the basic authority to require testing conditions. Due to this being a new facility with Water Quality-Based Effluent Limitations for toxic substances, WET testing is required.

  The permit writer has determined this facility has reasonable potential to cause toxicity in the receiving stream. Acute tests are not required when chronic tests are performed; the acute toxicity can be back-calculated based on chronic test data.

  WQS: no toxics in toxic amounts [10 CSR 20-7.031(4)(J)2.B.] = 0.3 TUa, 1.0 TUc
  Acute WLA: C_e = ((## cfs_{DF} + ## cfs $_{ZID7Q10}$) 0.3 TUa – (## $cfs_{ZID7Q10}$ * 0 $TUa_{Background}$)) ÷ ## cfs_{DF}

  C_e = 0.3 TUa*10 = 3.0 TUa,c ACR: acute-to-chronic ratio = 10]
  (The acute WLA is converted to a long-term average concentration (LTAa,c) using: WLAa,c = WLAa × ACR. A default acute to chronic ratio [ACR] value of 10 is used based on section 1.3.4 (page 18) and Appendix A of the March 1991 TSD.)
  Chronic WLA: C_e = ((## cfs_{DF} + ## cfs $_{MZ7Q10}$) 1.0 TUa,c – (## cfs_{MZ7Q10} * 0 $TUc_{Background}$)) ÷ ## cfs_{DF}

  C_e = 1.0 TUa,c
  $LTA_{a,c}$: 3.0 (0.321) = 0.963 TUa,c [CV = 0.6, 99th Percentile]
  LTA_c: 1.0 (0.527) = **0.527 TUa,c** [CV = 0.6, 99th Percentile]
  Use most protective number of $LTA_{a,c}$ or LTA_c.
  MDL: 0.527 (3.11) = 1.64 TUc= **1.6 TUc** [CV = 0.6, 99th Percentile]

  The standard Allowable Effluent Concentration (AEC) for facilities discharging to streams without mixing considerations or lakes is 100%. The standard dilution series for facilities discharging to waterbodies without mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25%.

  Annual testing is the minimum testing frequency; monitoring requirements promulgated in 40 CFR 122.44(i)(2) state "requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once per year."

11. ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION

The proposed new cooling tower discharge, Kerry Ingredients and Flavours - Greenville, 28,800 gallons per day will result in significant degradation of the segment identified in the Tributary to Goose Creek. Ion exchange was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations. The other technologies were evaluated, and determined to be not practicable.

It has also been determined that the other treatment options presented (filtration or chemical precipitation) may also be considered reasonable alternatives provided they are designed to be capable of meeting the effluent limitations developed based on the preferred alternative. If any of these options are selected, you may proceed with the appropriate facility plan, construction permit application, or other future submittals without the need to modify this Antidegradation review document.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. The Department has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Keith Forck
Date: 12/13/2018
Unit Chief: John Rustige, P.E. JR

Kerry Ingredients and Flavours - Greenville
December 2018
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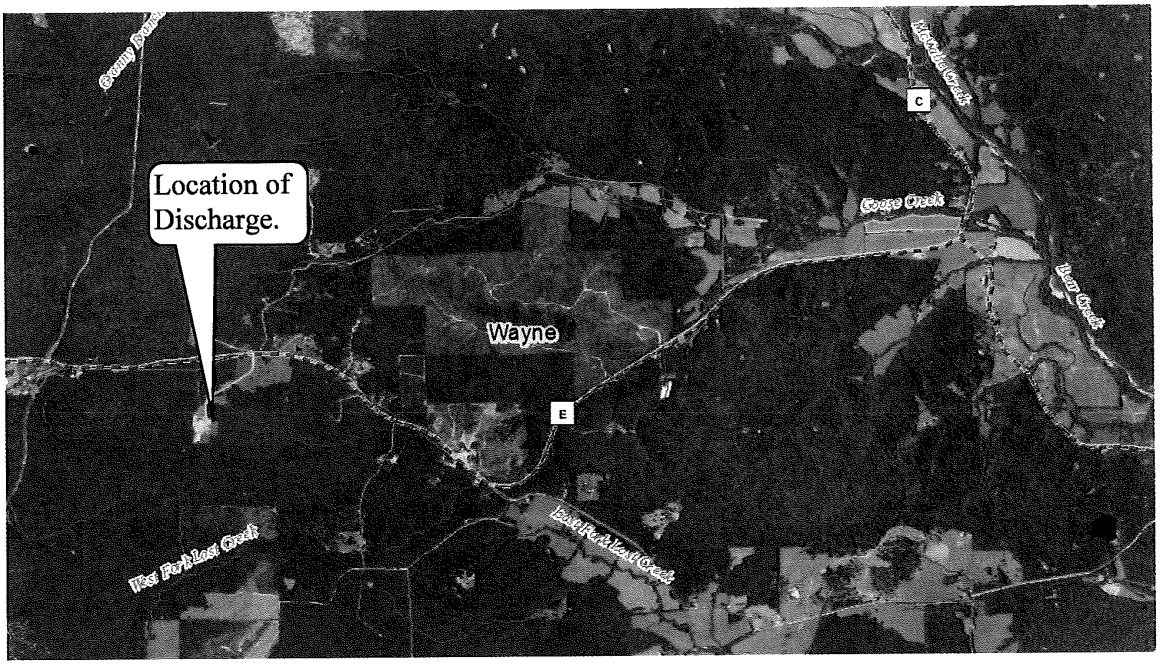
Appendix A: Map of Discharge Location



Appendix B: Natural Heritage Review

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Kerry CTBD_Internal Outfall #4849
Project Description: Outfall 101: NW ¼, NW ¼, Sec 34, T29N, R6E, Wayne County (37° 8' 41.5" N / 90° 23' 2.5" W) OUTFALL 101 to currently permitted Outfall 001 – DISCHARGE TO UNNAMED TRIBUTARY TO GOOSE CREEK (TO BEAR CREEK, THEN UPPER CASTOR RIVER). Outfall 001 currently permitted for stormwater.
Project Type: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Effluent Discharge, Effluent discharge - renewal or modification of discharge to stream
Contact Person: robin richards
Contact Information: rrichards@ramboll.com or 703-516-2432

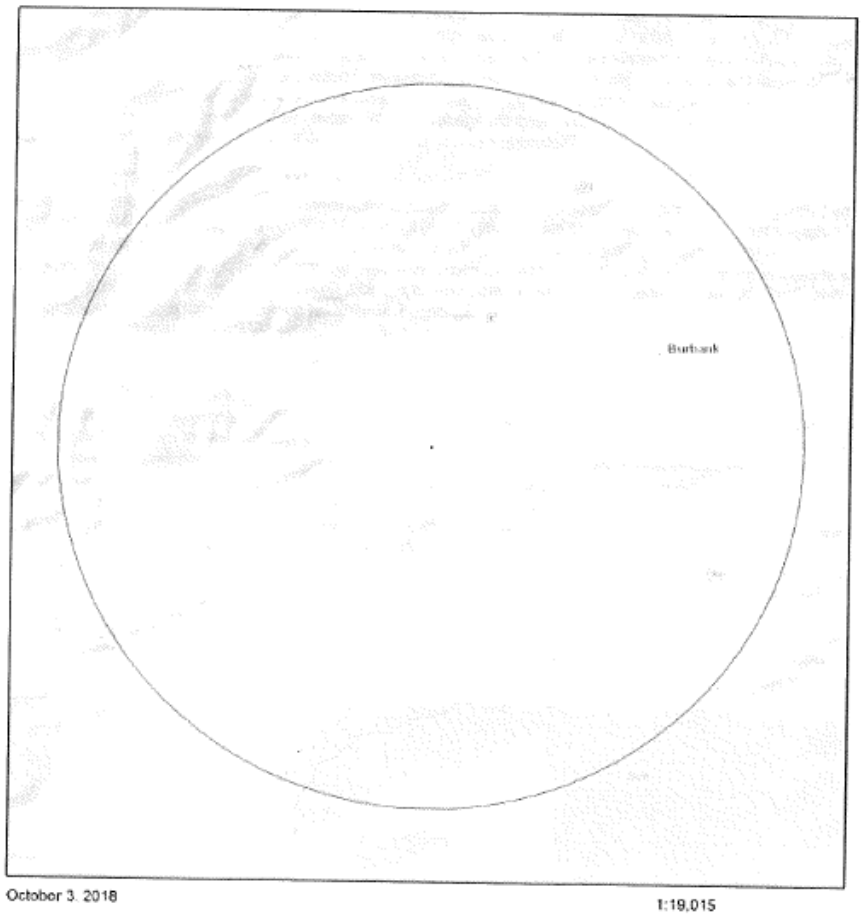
Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

The Natural Heritage Report is not a site clearance letter for the project. It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at https://ecos.fws.gov/ipac/ for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or www.modot.mo.gov/ehp/index.htm for additional information on recommendations.

Kerry CTBD_Internal Outfall



October 3, 2018

1:19,015

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

Project Boundary

Buffered Project Boundary

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Species or Communities of Conservation Concern within the Area:

There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182
NaturalHeritageReview@mdc.mo.gov

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, MARK TWAIN NF, please contact USFS.

Project Type Recommendations:
Waste Transfer, Treatment, and Disposal - Liquid Effluent Discharge - New or Renewal of Permit: Clean Water Act permits issued by other agencies regulate both construction and operation of wastewater systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream. Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions.
Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with of native plant species compatible with the local landscape and for wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats (*Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis*, federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. **If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

The project location submitted and evaluated is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. See http://mdc.mo.gov/104 for best management recommendations.

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See http://mdc.mo.gov/9633 for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (?140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (http://dnr.mo.gov/env/wpp/401/index.html), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit http://dnr.mo.gov/env/wpp/permits/index.html for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below.

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182
NaturalHeritageReview@mdc.mo.gov

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

Additional information on Missouri's sensitive species may be found at http://mdc.mo.gov/discover-nature/field-guide/endangered-species . Detailed information about the animals and some plants mentioned may be accessed at http://mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx . If you would like printed copies of best management practices cited as internet URLs, please contact the Missouri Department of Conservation.

Kerry Ingredients and Flavours - Greenville
December 2018
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Appendix C: Antidegradation Review Summary Attachments
The attachments that follow contain summary information provided by the applicant.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY FOR PUBLIC NOTICE
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE
KERRY INGREDIENTS AND FLAVOURS – GREENVILLE		573-224-3281
ADDRESS (PHYSICAL)	**CITY**	**STATE** / **ZIP CODE**
HCR 2 BOX 2560 HIGHWAY E	GREENVILLE	MO / 63944

2. OWNER

NAME AND OFFICIAL TITLES			
PAUL COSTEPHENS, PRODUCTION MANAGER			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
HCR 2 BOX 2560 HIGHWAY E	GREENVILLE	MO	63944
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		
573-705-4601	PAUL.COSTEPHENS@KERRY.COM		

3. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf

NAME AND OFFICIAL TITLES			
EVAN VERBANIC, RSE MANAGER			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
3460 MISSISSION ROAD	BELOIT	WI	53511
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		
	EVAN.VERBANIC@KERRY.COM		

4. RECEIVING WATER BODY SEGMENT #1

NAME
GOOSE CREEK
(water body segment defined as location of first discharge to confluence with Bear Creek, downstream significant water body)

4.1 UPPER END OF SEGMENT (Location of discharge)
UTM_____ OR Lat 37° 8' 41.5" N Long 90° 23' 2.5" W

4.2 LOWER END OF SEGMENT
UTM_____ OR Lat 37° 9' 15" N Long 90° 18' 16" W

Per the Missouri Antidegradation Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

5. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)

NAME
NOT APPLICABLE

5.1 UPPER END OF SEGMENT
UTM_____ OR Lat_____ Long_____

5.2 LOWER END OF SEGMENT
UTM_____ OR Lat_____ Long_____

6. WET WEATHER ANTICIPATIONS

If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to the antidegradation review report. NOT APPLICABLE

What is the Wet Weather Flow Peaking Factor in relation to design flow?

Wet Weather Design Summary:

MO 780-2021 (06-19)

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7. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II A.1. (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data approved by the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Watershed Protection Section. **Additional information needed with the EWQ data includes**: 1) Date existing water quality data was provided by the Watershed Protection Section, 2) Approval date by the Watershed Protection Section of the QAPP, project sampling plan, and data collected for all appropriate POCs.

Comments/Discussion: Goose Creek is a designated low flow stream. Therefore, no existing water quality data are available and all applicable water quality criteria must be met at end of pipe.

8. SUMMARY OF THE POLLUTANTS OF CONCERN AND THE PROPOSED EFFLUENT LIMITS

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Anti-degradation Implementation Procedure Section II.A. and assumed or demonstrated to cause significant degradation. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with.

Pollutants of Concern*	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
Outfall 101				
Copper, dissolved	mg/L		0.026	0.016
Outfall 102				
Zinc, dissolved	mg/L		0.211	0.211
Copper, dissolved	mg/L		0.026	0.016

Proposed limits must not violate water quality standards, be protective of beneficial uses, and achieve the highest statutory and regulatory requirements.

*Assumed Tier 2

9. IDENTIFYING ALTERNATIVES

Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided." as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1. the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.

Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri in their Tier 2 Reviews with alternative analysis must comply with the requirements set forth in the *New Technology Definitions and Requirements Factsheet* that can be found at http://dnr.mo.gov/pubs/pub2453.pdf.

Non-degrading alternatives: Non-degrading alternatives evaluated include land application/irrigation, recycling or reuse, and discharge to a local publicly owned treatment works (POTW).

Less-degrading alternatives: Less-degrading alternatives evaluated included treatment with ion exchange or an evaporator.

Alternatives ranging from less-degrading to degrading including Preferred Alternative
(All treatment levels for POCs must at a minimum meet water quality standards)

Alternatives	Level of Treatment Attainable for each Pollutant of Concern					
	Zinc (mg/L)	Copper (mg/L)				
Land application / irrigation	N/A	N/A	Alternative results in no surface water discharge			
Recycling / reuse	N/A	N/A	Alternative results in no surface water discharge			
Discharge to POTW	N/A	N/A	Alternative results in no surface water discharge			
Treatment with Ion Exchange	< 0.211	< 0.016				

MO 780-2031 (07-13)

10. DETERMINATION OF THE REASONABLE ALTERNATIVE

Per the Antidegradation Implementation Procedure Section II B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. **Please do not write "See Report" for any box below.**

Practicability Summary:

The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts. Factors for each alternative were ranked on a scale from zero (0) to five (5) ranging from impractical to reasonably practical respectively. The total scoring for each alternative is the product of the individual rankings. Alternatives are deemed practicable if the total score (product of the individual rankings) is greater than zero. For Outfall 101, none of the identified alternatives were determined to be practicable. For Outfall 102, both recycle/reuse and indirect discharge were determined to be practicable alternatives.

Economic Efficiency Summary:

Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Alternatives from Section 8.1 above are deemed practicable if the total score is greater than zero.

All identified non-degrading and less-degrading alternatives were deemed to be impractical for implementation for the cooling tower blowdown discharge (Outfall 101). No economic efficiency evaluation is required.

Both recycle/reuse and indirect discharge were determined to be practical non-degrading alternatives to a direct discharge system. Kerry considers both options to be economically efficient for implementation.

Affordability Summary:

An affordability analysis may be used to determine if the alternative is too expensive to reasonably implement. However, any alternatives identified as practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis.

Kerry has chosen not to supply an affordability analysis and considers both recycle/reuse and indirect discharge of the softener backwash stream (Outfall 102) to be affordable. No identified alternatives meet the practicability requirements for Outfall 101 and therefore no affordability analysis was performed.

Preferred Chosen Alternative:

The preferred alternative for Outfall 101 is direct discharge of the cooling tower blowdown without additional treatment. This alternative results in greater than minimal degradation as it relates to the dissolved copper water quality standard. Therefore, the social and economic importance (SEI) of the discharge must be documented.

The preferred alternative for Outfall 102 is recycle/reuse. Currently, softener backwash is managed in this manner by recycling this stream into the product. Should modifications to guidelines prohibit such management practices in the future, Kerry will pursue indirect discharge to the Greenville WWTF via certified waste haulers.

Reasons for Rejecting the other Evaluated Alternatives:

The following identified alternatives for Outfall 101 did not meet practicability criteria for the following reasons:

- Non-degrading alternatives (land application/irrigation, reuse/recycling, and indirect discharge) were determined to be technically infeasible due primarily to the volume of the proposed discharge; and
- The less-degrading alternative (treatment with ion exchange) had many secondary environmental impacts including energy consumption and solid waste generation.

The following identified alternatives for Outfall 102 did not meet practicability criteria for the following reasons:

- The non-degrading alternative for land application/irrigation was technically infeasible due to introduction of substances with potential to adversely impact soils and vegetation.
- The less-degrading alternative (treatment with ion exchange and/or evaporator) had many secondary environmental impacts including energy consumption and solid waste generation.

Comments/Discussion:

11. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge

Identify the affected community:

The affected community is defined in 10 CSR 20-7.031(2)(B) as the community in the geographical area in which the waters are located. The affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project.

Greenville is a small city located on U.S. Highway 67 near the intersection of Route D and E. The population of Greenville was 511 as measured during the 2010 census. Greenville is located in Wayne County, Missouri along the St. Francis River. The estimated population for Wayne County in July 2017 was roughly 13,000 with approximately 5,600 households with 2.35 persons per household. Roughly 75% of the population earned a high school diploma or higher with 12% of the population possessing a Bachelor's degree or higher. The Wayne County median household income (in 2016 dollars) was $33,954 versus the national median household income of $55,322. Total employment in Wayne County in 2016 was 1,692. Additionally, the persons in poverty in Wayne County was 26% versus the national average of 12.7%.

Identify relevant factors that characterize the social and economic conditions of the affected community:

Relevant factors for the affected community include household income, persons in poverty, and employment

Describe the important social and economic development associated with the project:

Through a cooperative effort with Missouri Department of Economic Development (DED), the Ozark Foothills Regional Planning Commission, Wayne County Enhanced Enterprise Zone Board and the Wayne County Commission, Kerry pursued expansion of its Greenville facility through a $14,295,000 investment. The facility produces a variety of liquid smoke products and currently employs 25 workers with plans to add four (4) additional permanent positions as a result of this expansion. The expansion will add approximately 20,650 square feet of manufacturing space including sawdust receiving and storage, production equipment, and additional office and conference space. Locally sourced raw material purchases are expected to increase by 60% due to this expansion with production increasing by the same amount. Additionally, 142 temporary contract personnel have been employed as a result of this expansion.

PROPOSED PROJECT SUMMARY:

As demonstrated above, the Kerry Greenville expansion yields increased employment opportunities for the community both directly at the facility and for vendors supporting the facility. Additionally, it should be noted that the streams (Outfall 101 and 102) requested for surface water discharge are relatively unpolluted streams with the presence of pollutants of concern due to background groundwater concentrations. Based on this evaluation, allowing degradation of water quality is necessary and accommodates important economic or social development in the area where the surface water is located.

Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.

SIGNATURE | DATE: 7/11/18

STATE OF MISSOURI
BETH NEWSOM ECKLEY
NUMBER
PE-2008019538
PROFESSIONAL ENGINEER

NAME AND OFFICIAL TITLE/LICENSE #: Beth Newsom Eckley, Managing Consultant\ PE-2008019538

COMPANY NAME: Ramboll

ADDRESS: 1807 Park 270 Drive, Suite 450

CITY: St. Louis | STATE: MO | ZIP CODE: 63146

TELEPHONE NUMBER WITH AREA CODE: 314-590-2080

E-MAIL ADDRESS: beckley@ramboll.com

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE | DATE: 7-12-18

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE | DATE: 7/12/18

APPENDIX B: BLM MODEL APPROVAL

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor — Dru Buntin, Director

MEMORANDUM

DATE: May 4, 2022

TO: Pam Hackler, Environmental Scientist
Industrial Wastewater Permit Section

THROUGH: John Hoke, Chief
Water Pollution Control Branch

THROUGH: Heather Peters, Chief
Watershed Protection Section

FROM: Ashley Grupe, Chief
Water Quality Standards Unit

SUBJECT: City of Greenville Kerry Ingredients and Flavours Biotic Ligand Model Study (MO-139050)

On behalf of Kerry Ingredients and Flavours-Greenville, Pace Analytical submitted to the Missouri Department of Natural Resources the results of a biotic ligand model (BLM) study for Outfall 003 dated January 18, 2022. This BLM was conducted under a Quality Assurance Project Plan (QAPP) approved by the Department on December 10, 2020. The BLM final report discussed the scope of the biotic ligand model study and the need to develop site-specific criteria for discharges of copper via Outfall 003. Results of this study are summarized in this memo and the tables that follow.

1. The sampling events were performed in agreement to the QAPP approved by the Department and thus data can be used for calculating site-specific criteria for copper.

2. The consultant removed two samples from data collection due to a lack of field data and laboratory holding time issues. The removal of these samples still resulted in the minimum number of samples required. The criterion formed with the input parameters developed the instantaneous water quality criteria (IWQC) to be used per recommendation by the Department.

3. The consultant demonstrated the differences in the aquatic life acute and chronic criteria by calculating the site-specific criteria utilizing the default hardness value for warm-water fishery criteria of 169 milligrams per liter (mg/L) and the 50th percentile site-specific hardness value from the BLM dataset of 89.4 mg/L. Calculations were performed using the 1995 EPA Update to Copper Criteria of:
   - Acute: CMC (µg/L) = $e^{(0.9422*\ln(\text{Hardness})-1.7003)} * 0.96$
   - Chronic: CCC (µg/L) = $e^{(0.8545*\ln(\text{Hardness})-1.702)} * 0.96$

In the final BLM report, Kerry Ingredients and Flavours requested a total copper criterion maximum concentration value (CMC) of 390 microgram per liter (µg/L) and criterion continuous concentration (CCC) value of 242 µg/L be used to compute the site-specific acute and chronic criteria for copper discharge, respectively. These values were developed using the average of 13 samples gathered over the 3 month period.

The Watershed Protection Section recommends using the site-specific criteria values proposed by the report as they are scientifically defensible and the BLM was conducted in accordance with guidance from the Department.

Kerry MO Field and BLM Analytical Results (Data Inputs)

Parameters	Temp (Field)	pH (Field)	Dissolved Organic Carbon (DOC)	Aklalinity	Ca, Total	Mg, Total	Na, Total	K, Total	SO4	Chloride	Cu, Total	Cu, Dissolved	Sulfide
Units	°C	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	mg/L
1/25/2021	-1	-1	15.1	691	18.7	11.1	337	<1.00	19.9	23	94.3	61.2	<0.05
1/27/2021	3.8	8.11	14.5T8	633	22.6	11.2	290	<1.00	9.87	18.6	77.3	48.5	<0.05
1/29/2021	1479	8.65	14.2	607	20.8	10.5	265	<1.00	9.48	18.9	111	56	<0.05
2/1/2021	10.4	8.93	14.2	631	33.9	13.6	301	<1.00	9.9	18.6	149	62.2	<0.05
2/3/2021	15	8.88	14.4	617	21.1	10.6	288	<1.00	9.29	18.8	110	54.2	<0.05
2/5/2021	7.1	8.68	15.4	613	13.4	8.6	274	<1.00	10.1	18.8	68.9	52.9	<0.05
2/8/2021	15.5	8.77	13.7	543	14.4	7.42	235	<1.00	9.36	17.2	80.8	61.4	<0.05
3/1/2021	15.9	8.88	20.9	642	3.33	16.7	274	<1.00	12.9	27.3	187	115	<0.05

Parameters	Temp (Field)	pH (Field)	Dissolved Organic Carbon (DOC)	Aklalinity	Ca, Total	Mg, Total	Na, Total	K, Total	SO4	Chloride	Cu, Total	Cu, Dissolved	Sulfide
Units	°C	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	mg/L
3/3/2021	18.6	8.75	20.1	629	21.1	12.8	278V	<1.00	12.2	26.1	128	95.8	<0.05
3/5/2021	15.7	8.8	16.2	635	17.8	11	30	<1.00	12.1	27.1	106	81.7	<0.05
3/10/2021	20	8.71	17.6	521	12.3	8.18	264	<1.00	10	18.2	74.8	56.1	<0.05
3/12/2021	19	8.81	16.4	635	14.3	11.2	303	1	11.9	21.1	70.9	69.9	<0.05
3/15/2021	11.1	8.52	16.5	553	11.9	8.6	262	<1.00	9.55	17.2	64.1	56.9	<0.05
3/18/021	17.4	8.81	15.4	603	12	8.34	289	<1.00	10.6	17.5	67.8	54.1	<0.05
3/22/2021	12.3	8.66	13.8	563	9.73	6.51	289	<1.00	10.6	16.4	46.5	40.8	<0.05

1 – Data missing from COC. Sampling event not used in BLM.
T8 – Samples received past / too close to hold time expiration at laboratory. Hold time for unpreserved DOC samples is 2 days. Data considered invalid and not used in BLM.
V – The sample concentration is too high to evaluate accurate spike recoveries. Data considered valid and used in BLM.

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.

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

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

SECTION A – GENERAL REQUIREMENTS

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

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

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

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

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

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

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

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

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

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

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

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

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

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

SECTION H – CLOSURE REQUIREMENTS

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

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

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

SECTION I – MONITORING FREQUENCY

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

TABLE 5

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

[1] Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

[2] Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

[3] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

[4] One sample for each 1,000 dry tons of sludge.

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

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

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

Received 9/7/22 AP40179

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 09/07/22	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 – 0139050 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	
Kerry Ingredients and Flavours - Greenville		573-224-3281	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
4742 Wayne Route E	Greenville	MO	63944

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
Kerry Ingredients Inc.		920-663-6742	
EMAIL ADDRESS			
patrick.lehman@kerry.com			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
3400 Millington Road	Beloit	WI	53511

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Kerry Ingredients Inc.		920-2663-6742	
EMAIL ADDRESS			
patrick.lehman@kerry.com			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
3400 Millington Road	Beloit	WI	53511

5. OPERATOR CERTIFICATION

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE	
Not applicable	Not applicable	Not applicable	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
Not applicable	Not applicable	NA	Not applicable

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
Justin F Province	HSE Manager	573-208-3161
E-MAIL ADDRESS		
justin.province@kerry.com		

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

NAME			
Barbara Morris			
ADDRESS	CITY	STATE	ZIP CODE
1157 Breezy Knoll	Houston	TX	77064

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

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

003 NW ¼ NW ¼ Sec 34 T 29N R 6E Wayne County
UTM Coordinates Easting (X): 732356.31 Northing (Y): 4114162.23

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 2099 and NAICS 311942 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: CAA Operating Permit Number OP2021-008; MOR130068 GPCF Stormwater

F. Do you use cooling water in your operations at this facility? YES ☑ NO ☐
If yes, please indicate the source of the water: On-site groundwater well

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
Patrick Lehman, Director, Operations Smoke & Grill	920-663-6742
SIGNATURE	DATE SIGNED
	9-6-2022

MO 780-1479 (04-21)

MDNR Form C

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

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

GENERAL INFORMATION (PLEASE SEE INSTRUCTIONS)

1.0 NAME OF FACILITY

Kerry Ingredients and Flavours - Greenville

1.1 THIS FACILITY IS OPERATING UNDER MISSOURI STATE OPERATING PERMIT (MSOP) NUMBER:

MO-139050

1.2 IS THIS A NEW FACILITY? PROVIDE CONSTRUCTION PERMIT (CP) NUMBER IF APPLICABLE.

No

1.3 Describe the nature of the business, in detail. Identify the goods and services provided by the business. Include descriptions of all raw, intermediate, final products, byproducts, or waste products used in the production or manufacturing process, stored outdoors, loaded or transferred and any other pertinent information for potential sources of wastewater or stormwater discharges.

Kerry Ingredients and Flavours - Greenville manufactures and distributes smoke process products for the food and beverage industry. The major operations conducted at the facility consist of sawdust and wood chip handling and drying, calciner operations (thermal treatment applied to sawdust/wood chips), raw materials and finished product storage, and material loading/unloading. Additionally, a wood char byproduct that is generated during the calcining process is sold to third-party wood char briquette manufacturers.

FLOWS, TYPE, AND FREQUENCY

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

2.1 For each outfall (1) below, provide: (2) a description of all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, stormwater runoff, and any other process or non-process wastewater, (3) the average flow and maximum flow (put max in parentheses) contributed by each operation and the sum of those operations, (4) the treatment received by the wastewater, and (5) the treatment type code. Continue on additional sheets if necessary.

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW; INCLUDE ALL PROCESSES AND SUB PROCESSES AT EACH OUTFALL	3. AVERAGE FLOW AND (MAXIMUM FLOW), INCLUDE UNITS.	4. TREATMENT DESCRIPTION	5. TREATMENT CODES FROM TABLE A
003	Cooling Tower Blowdown	2,438 (5,450) gpd*	Discharge to surface water	4-A

Attach additional pages if necessary.

*Based on data collected from when the flow measurement system became operational in May 2020 through May 2022 (the most recent publicly available data at the time of data download).

2.2 INTERMITTENT DISCHARGES

Except for stormwater runoff, leaks, or spills, are any of the discharges described in items 2.0 or 2.1 intermittent or seasonal?

☑ Yes *(complete the following table)* ☐ No *(go to section 2.3)*

1. OUTFALL NUMBER	2. OPERATION(S) CONTRIBUTING FLOW	3. FREQUENCY		4. FLOW				C. DURATION *(in days)*
				A. FLOW RATE *(in mgd)*		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK *(specify average)*	B. MONTHS PER YEAR *(specify average)*	1. MAXIMUM DAILY	2. LONG TERM AVERAGE	3. MAXIMUM DAILY	4. LONG TERM AVERAGE	
003	Cooling tower blowdown	Varies*	Varies*	0.0055	0.0024	168,950gal	74,635 gal	Varies*

2.3 PRODUCTION

A. Does an effluent limitation guideline (ELG) promulgated by EPA under section 304 of the Clean Water Act apply to your facility? Indicate the part and subparts applicable.

☐ Yes 40 CFR_____ Subpart(s) _____ ☑ No *(go to section 2.5)*

B. Are the limitations in the effluent guideline(s) expressed in terms of production (or other measure of operation)? Describe in C below.

☐ Yes *(complete C.)* ☐ No *(go to section 2.5)*

C. If you answered "yes" to B, list the quantity representing an actual measurement of your maximum level of production, expressed in the terms and units used in the applicable effluent guideline and indicate the affected outfalls.

A. OUTFALL(S)	B. QUANTITY PER DAY	C. UNITS OF MEASURE	D. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*

2.4 IMPROVEMENTS

A. Are you required by any federal, state, or local authority to meet any implementation schedule for the construction, upgrading, or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ Yes *(complete the following table)* ☐ No *(go to 2.6)*

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

B. Optional: provide below or attach additional sheets describing water pollution control programs or other environmental projects which may affect discharges. Indicate whether each program is underway or planned, and indicate actual or planned schedules for construction. This may include proposed bmp projects for stormwater.

*Blowdown is driven by conductivity of the water in the cooling system. Once conductivity reaches an operational threshold, the system discharges water until the conductivity is reduced to a second threshold. This does not occur at a regular frequency. Flow rate is calculated using volume measured by a totalizer divided by the number of days in the month.

2.5 SLUDGE MANAGEMENT

Describe the removal of any industrial or domestic biosolids or sludges generated at your facility. Include names and contact information for any haulers used. Note the frequency, volume, and methods (incineration, landfilling, composting, etc) used. See Form A for additional forms which may need to be completed.

Domestic biosolids are stored in a septic tank, which is emptied as needed. Dorris Plumbing, 2605 Fair St, Poplar Bluff, MO, 63901, 573-785-7574 last emptied the tank over two years ago.

No industrial sludge is produced at the facility.

DATA COLLECTION AND REPORTING REQUIREMENTS FOR APPLICANTS

3.0 EFFLUENT (AND INTAKE) CHARACTERISTICS (SEE INSTRUCTIONS)

A. & B. See instructions before continuing – complete one Table 1 for **each outfall** (and intake) – annotate the outfall (intake) number or designation in the space provided. The facility is not required to complete intake data unless required by the department or rule.

C. Use the space below to list any pollutants listed in the instructions section 3.0 C. Table B which you know or have reason to believe is discharged or may be discharged from any outfall not listed in parts 3.0 A or B on Table 1. For every pollutant listed, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	3. OUTFALL(S)	4. ANALYTICAL RESULTS (INCLUDE UNITS)
None expected			

3.1 Whole Effluent Toxicity Testing

A. To your knowledge, have any Whole Effluent Toxicity (WET) tests been performed on the facility discharges (or on receiving waters in relation to your discharge) within the last three years?

☑ Yes (go to 3.1 B) ☐ No (go to 3.2)

3.1 B

Disclose wet testing conditions, including test duration (chronic or acute), the organisms tested, and the testing results. Provide any results of toxicity identification evaluations (TIE) or toxicity reduction evaluations (TRE) if applicable. Please indicate the conclusions of the test(s) including any pollutants identified as causing toxicity and steps the facility is taking to remedy the toxicity.

12/31/2020: Ceriodaphnia chronic = 1.0 TUc; Pimephales chronic = 1.0 TUc
12/31/2021: Ceriodaphnia chronic = 1.3 TUc; Pimephales chronic = 1.0 TUc No TIE or TRE performed.

3.2 CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported herein, above, or on Table 1 performed by a contract laboratory or consulting firm?

☑ Yes (list the name, address, telephone number, and pollutants analyzed by each laboratory or firm.) ☐ No *(go to 4.0)*

A. LAB NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list or group)*
Pace Analytical	12065 Lebanon Rd. Mount Juliet, TN 37122	615-758-5858	Table 1 constituents

4.0 STORMWATER

4.1
Do you have industrial stormwater discharges from the site? If so, attach a site map outlining drainage areas served by each outfall. Indicate the following attributes within each drainage area: pavement or other impervious surfaces; buildings; outdoor storage areas; material loading and unloading areas; outdoor industrial activities; structural stormwater control measures; hazardous waste treatment, storage, and disposal units; and wells or springs in the area.

OUTFALL NUMBER	TOTAL AREA DRAINED (PROVIDE UNITS)	TYPES OF SURFACES (VEGETATED, STONE, PAVED, ETC)	BEST MANAGEMENT PRACTICES EMPLOYED; INCLUDE STRUCTURAL BMPS AND TREATMENT DESIGN FLOW FOR BMPS DESCRIBE HOW FLOW IS MEASURED
001		Authorized under	General Industrial Stormwater Permit MO-R130068; SWPPP implemented.
002		Authorized under	General Industrial Stormwater Permit MO-R130068; SWPPP implemented.

4.2 STORMWATER FLOWS
Provide the date of sampling with the flows, and how the flows were estimated.
Outfalls not required to be sampled.

SIGNATORY REQUIREMENTS

5.0 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
Patrick Lehman, Director, Operations Smoke & Grill	920-663-6742
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
	9-6-2022

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

FORM C TABLE 1 FOR 3.0 - ITEMS A AND B

EFFLUENT (AND INTAKE) CHARACTERISTICS — THIS OUTFALL IS: Cooling Tower Blowdown — OUTFALL NO. 003

3.0 PART A – You must provide the results of at least one analysis for every pollutant in Part A. Complete one table for each outfall or proposed outfall. See instructions.

1. POLLUTANT	2. VALUES							3. UNITS *(specify if blank)*	
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUES		C. LONG TERM AVERAGE VALUES		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	8.05	1.93	--	--	--	--	1	mg/L	lb/day
B. Chemical Oxygen Demand (COD)	76.5	3.33	76.5	3.33	33.9	0.7	25	mg/L	lb/day
C. Total Organic Carbon (TOC)	5.65	1.36	--	--	--	--	1	mg/L	lb/day
D. Total Suspended Solids (TSS)	39.2	0.65	39.2	0.65	4.88	0.09	25	mg/L	lb/day
E. Ammonia as N	<0.100	--	--	--	--	--	1	mg/L	--
F. Flow	VALUE 0.0055		VALUE 0.0055		VALUE 0.0024		25	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)**	VALUE 77.0		VALUE 77.0		VALUE 60.7		10	°F	
H. Temperature *(summer)**	VALUE 84.9		VALUE 84.9		VALUE 68.9		15	°F	
I. pH	MINIMUM 7.98		MAXIMUM 9.26		AVERAGE 8.70		25	STANDARD UNITS (SU)	

3.0 PART B – Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark Column 2A for any pollutant, you must provide the results for at least one analysis for the pollutant. Complete one table for each outfall (intake). Provide results for additional parameters not listed here in Part 3.0 C.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUES		C. LONG TERM AVERAGE VALUES		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)		X	MINIMUM 7.3	0.06	MINIMUM 7.3	0.06	MINIMUM 221.8	5.1	25	mg/L	lb/day
B. Bromide (24959-67-9)	X		2.15	0.516	--	--	--	--	1	mg/L	lb/day
C. Chloride (16887-00-6)	X		44.8	1.0	44.8	1.0	21.8	0.4	25	mg/L	lb/day
D. Chlorine, Total Residual	X		0.37	0.01	0.37	0.01	0.07	0.001	25	mg/L	lb/day
E. Color		X	--	--	--	--	--	--	0	--	--
F. Conductivity	X		--	--	--	--	--	--	0**	--	--
F. Cyanide, Amenable to Chlorination		X	--	--	--	--	--	--	0	--	--

* Summer = May 1 - November 30; Winter = December 1 - April 30

** Conductivity was not a required parameter on Form C in 2018 when the original permit application was prepared. No sample was collected.

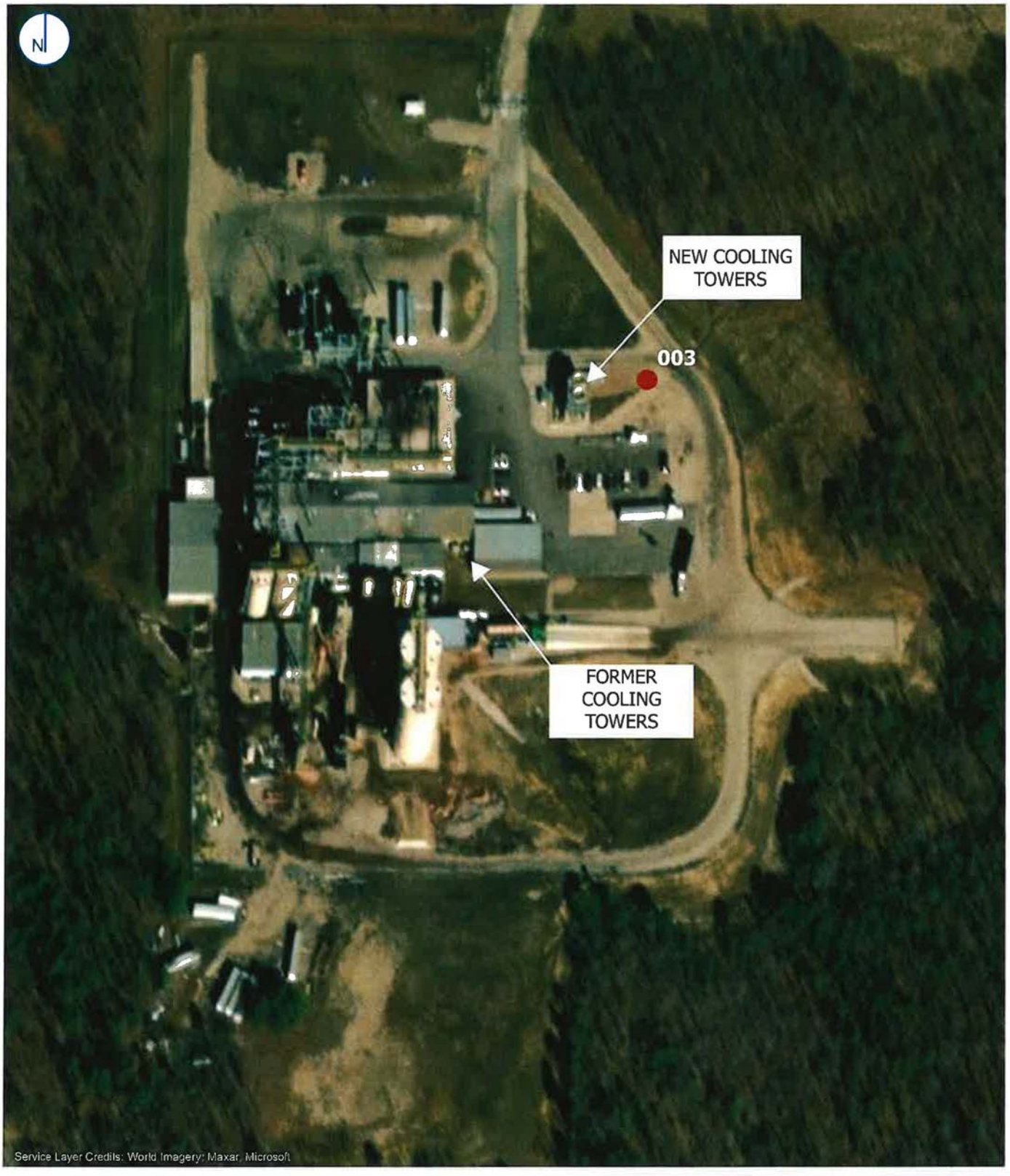
1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants (Continued)											
G. *E. coli*		X	--	--	--	--	--	--	0	--	--
H. Fluoride (16984-48-8)		X	< 0.100	--	--	--	--	--	1	mg/L	--
I. Nitrate plus Nitrate *(as N)*	X		0.108	0.026	--	--	--	--	1	mg/L	lb/day
J. Kjeldahl, Total (as N)	X		0.913	0.219	--	--	--	--	1	mg/L	lb/day
K. Nitrogen, Total Organic *(as N)*	X		1.021	0.245	--	--	--	--	1	mg/L	lb/day
L. Oil and Grease		X	<6.76	--	--	--	--	--	1	mg/L	--
M. Phenols, Total		X	--	--	--	--	--	--	0	--	--
N. Phosphorus *(as P)*, Total (7723-14-0)	X		7.2	0.3	7.2	0.3	3.5	0.1	25	mg/L	lb/day
O. Sulfate *(as SO^4)* (14808-79-8)	X		24.9	0.8	24.9	0.8	11.7	0.2	25	mg/L	lb/day
P. Sulfide *(as S)*		X	< 0.0500	--	--	--	--	--	1	mg/L	--
Q. Sulfite (as SO^3) (14265-45-3)		X	<3.00*	--	--	--	--	--	1	mg/L	--
R. Surfactants		X	--	--	--	--	--	--	0	--	--
S. Trihalomethanes, Total		X	--	--	--	--	--	--	0	--	--
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	X		4.8	0.1	4.8	0.1	1.0	0.02	25	mg/L	lb/day
2M. Antimony, Total Recoverable (7440-36-9)		X	<0.00200	--	--	--	--	--	1	mg/L	--
3M. Arsenic, Total Recoverable (7440-38-2)		X	<0.00100	--	--	--	--	--	1	mg/L	--
4M. Barium, Total Recoverable (7440-39-3)	X		0.0136	0.0033	--	--	--	--	1	mg/L	lb/day
5M. Beryllium, Total Recoverable (7440-41-7)		X	<0.00100	--	--	--	--	--	1	mg/L	--
6M. Boron, Total Recoverable (7440-42-8)		X	<0.200	--	--	--	--	--	1	mg/L	--
7M. Cadmium, Total Recoverable (7440-43-9)		X	<0.00100	--	--	--	--	--	1	mg/L	--
8M. Chromium III Total Recoverable (16065-83-1)	X		0.00184**	0.00044	--	--	--	--	1	mg/L	lb/day
9M. Chromium VI, Dissolved (18540-29-9)		X	--	--	--	--	--	--	0	--	--
10M. Cobalt, Total Recoverable (7440-48-4)		X	<0.00200	--	--	--	--	--	1	mg/L	--

* Sample received outside holding time
** Reported result is as total recoverable chromium.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	X		0.06	0.001	0.06	0.001	0.03	0.0005	25	mg/L	lb/day
12M. Iron, Total Recoverable (7439-89-6)	X		0.300	0.072	--	--	--	--	1	mg/L	lb/day
13M. Lead, Total Recoverable (7439-92-1)	X		0.00133	0.00032	--	--	--	--	1	mg/L	lb/day
14M. Magnesium, Total Recoverable (7439-95-4)	X		21	5.04	--	--	--	--	1	mg/L	lb/day
15M. Manganese, Total Recoverable (7439-96-5)	X		0.00951	0.0023	--	--	--	--	1	mg/L	lb/day
16M. Mercury, Total Recoverable (7439-97-6)		X	<0.000200	--	--	--	--	--	1	mg/L	--
17M. Methylmercury (22967926)		X	--	--	--	--	--	--	0	--	--
18M. Molybdenum, Total Recoverable (7439-98-7)		X	<0.00500	--	--	--	--	--	1	mg/L	--
19M. Nickel, Total Recoverable (7440-02-0)		X	<0.00100	--	--	--	--	--	1	mg/L	--
20M. Selenium, Total Recoverable (7782-49-2)		X	<0.00200	--	--	--	--	--	1	mg/L	--
21M. Silver, Total Recoverable (7440-22-4)		X	<0.00100	--	--	--	--	--	1	mg/L	--
22M. Thallium, Total Recoverable (7440-28-0)		X	<0.00100	--	--	--	--	--	1	mg/L	--
23M. Tin, Total Recoverable (7440-31-5)		X	0.00124*	0.00030	--	--	--	--	1	mg/L	lb/day
24M. Titanium, Total Recoverable (7440-32-6)		X	<0.0100	--	--	--	--	--	1	mg/L	--
25M. Zinc, Total Recoverable (7440-66-6)	X		0.0387	0.0093	--	--	--	--	1	mg/L	lb/day
Subpart 3 – Radioactivity											
1R. Alpha Total		X	--	--	--	--	--	--	0	--	--
2R. Beta Total		X	--	--	--	--	--	--	0	--	--
3R. Radium Total		X	--	--	--	--	--	--	0	--	--
4R. Radium 226 plus 228 Total		X	--	--	--	--	--	--	0	--	--
Other Parameters:											
Chlorides and sulfates	X		55.6	1.4	55.6	1.4	33.8	0.7	25	mg/L	lb/day
Nitrogen, total (as N)	X		5.9	0.15	5.9	0.15	2.9	0.05	25	mg/L	lb/day

* The same analyte is found in the associated blank (blank result = 0.000983 mg/L).

Figures



C:\Users\CacaceJM\OneDrive - Ramboll\Documents\Kerry_Ingredients\Kerry_Ingredients\Kerry_Ingredients aprx\Ramboll_ANSI_A_Portrait

PROJECT 169000XXXX | DATED: 8/2/2022 | DESIGNER: CACACEJM

LEGEND

● Approximate Location of Outfall

0 0.02 0.04 0.09 Miles

SITE LAYOUT
KERRY INGREDIENTS AND FLAVOURS

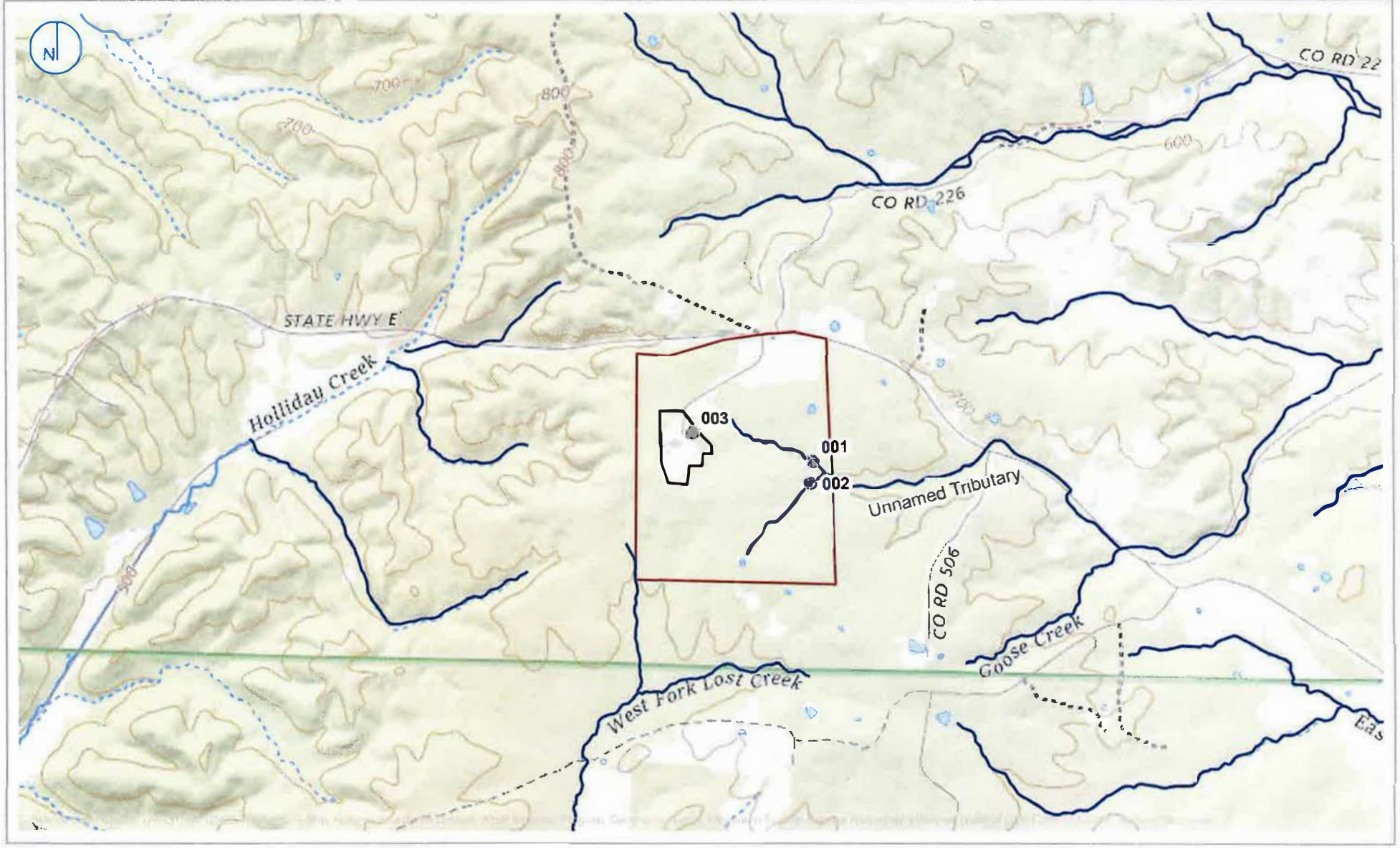
FIGURE 01

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

HCR 2 BOX 2560 HIGHWAY E, GREENVILLE, MISSOURI

PROJECT 169000XXXX | DATED 8/2/2022 | DESIGNER CACACEJM C:\Users\CacaceJM\OneDrive - Ramboll\Documents\Kerry_Ingredients\Kerry_Ingredients\Kerry_Ingredients\Kerry_Ingredients.aprx\Ramboll_ANSI_A_Landscape



Legend

- Outfalls
- Creeks
- Approximate Property Boundary
- Approximate Facility Fenceline

0 2,500 5,000 Feet

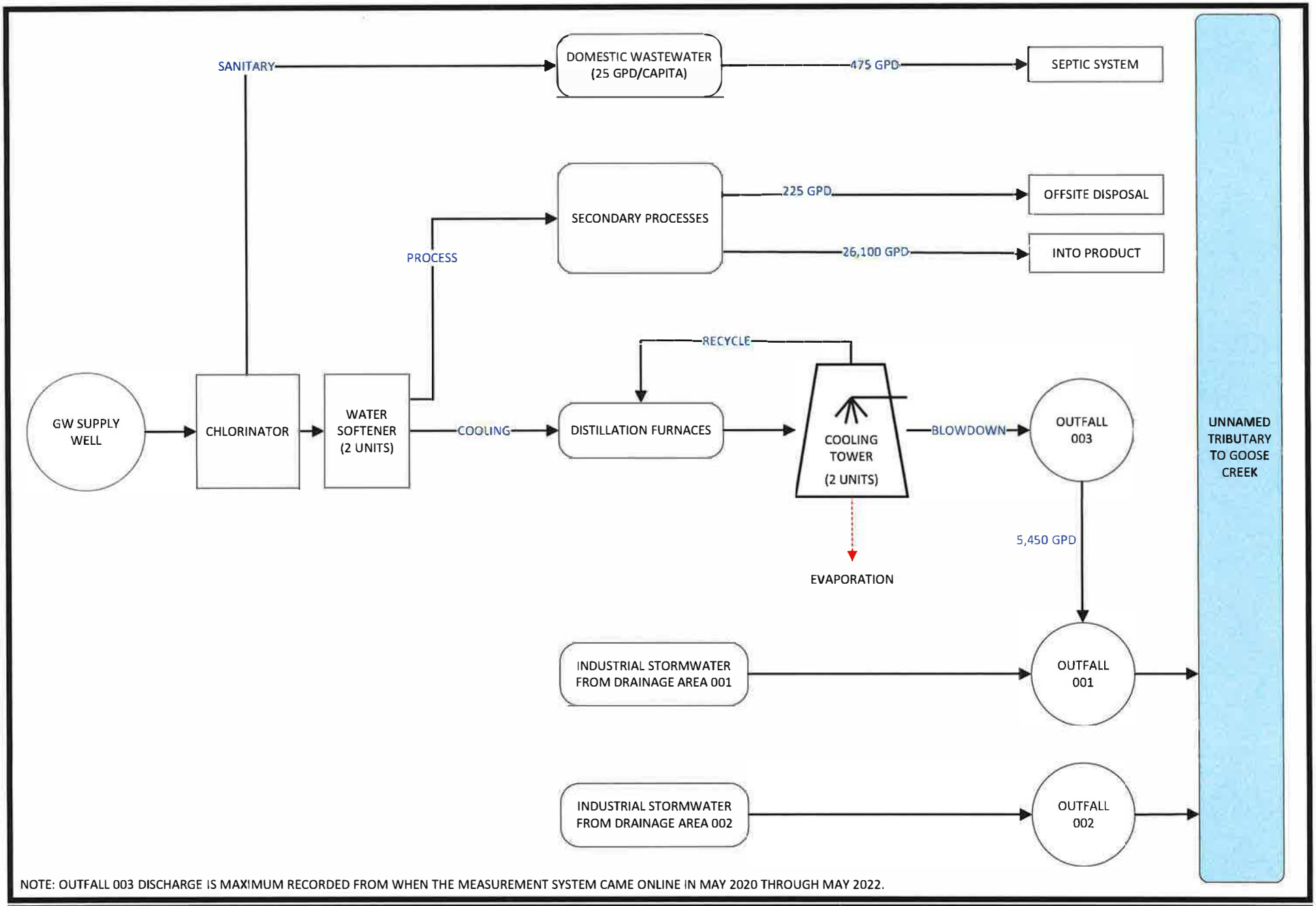
TOPOGRAPHIC MAP WITH OUTFALL LOCATIONS

Kerry Ingredients and Flavours
HCR 2 Box 2560 Highway E, Greenville, Missouri

FIGURE 02

RAMBOLL US CONSULTING, INC
A RAMBOLL COMPANY

RAMBOLL



NOTE: OUTFALL 003 DISCHARGE IS MAXIMUM RECORDED FROM WHEN THE MEASUREMENT SYSTEM CAME ONLINE IN MAY 2020 THROUGH MAY 2022.

RAMBOLL

EDITED BY: C. CUNNANE | DATE: 2022AUG29

LINE DISCHARGE DRAWING/WATER BALANCE
KERRY INGREDIENTS AND FLAVOURS
HCR 2 BOX 2560 HIGHWAY E, GREENVILLE, MISSOURI

FIGURE 03

PROJECT: 1940102892

Kerry – Greenville
4742 Wayne Route E
Greenville, MO 63944
www.kerry.com

September 7, 2022

Michael Abbot
Chief, Operating Permits Section
Water Protection Program
Missouri DNR
1101 Riverside Drive
Jefferson City, MO 65101

NPDES Permit Modification Application
Kerry Ingredients and Flavours – Greenville, Missouri
Missouri State Operating Permit No. MO-139050

Dear Mr. Abbott,

Kerry Ingredients and Flavours in Greenville, Missouri is pleased to submit this NPDEs Permit Modification Application for Permit MO-039050 following the acceptance of the Site-Specific Copper Biotic Ligand Model (BLM) Report for Outfall 003.The attached application is complete and details the reasoning for the modification.

As always, Kerry welcomes all feedback and conversation regarding this application, and are open to meeting with you and your staff to discuss.

Thank You,

Justin Province, PE
HSE Manager

Kerry – North America
4742 Wayne Route E
Greenville, MO 63944
Phone: 573-208-3161
Email justin.province@kerry.com

Cc: Ms. Pam Hackler – Environmental Scientist
Joe Morgan – Kerry Plant Manager

Intended for	**Kerry Ingredients and Flavours – Greenville** **2 HCR Box 2560 Highway E** **Greenville, MO 63944**
Document type	**Permit Application**
Date	**August 30, 2022**

KERRY INGREDIENTS
NPDES PERMIT MODIFICATION APPLICATION

RAMBOLL
Classified as General Business

NPDES Permit Modification Application

Order of Materials

Executive Summary

MDNR Form A

MDNR Form C

- Outfall 101 – Cooling Tower Blowdown

Supporting Figures

- Site Layout
- Topographic Map with Outfall Locations
- Line Discharge Drawing / Water Balance

EXECUTIVE SUMMARY

This Executive Summary and the subsequent attachments constitute the permit modification application for Kerry Ingredients and Flavours (Kerry) Greenville facility for its National Pollutant Discharge Elimination System (NPDES) Operating Permit No. MO-0139050. This summary describes the permitting-related activities since the Operating Permit became effective February 1, 2019. Through this application, Kerry respectfully requests authorization from Missouri Department of Natural Resources (MDNR) for the continued discharge from the facility to the receiving waters of Goose Creek and subsequently Bear Creek in Wayne County, with the site-specific criteria values for Total Recoverable Copper approved by MDNR on May 4, 2022.

Per MDNR (Mary Samuelson, email dated June 8, 2022) direction, this NPDES permit modification application includes the primary materials, as follows:

- MDNR Form A – Application for Nondomestic Permit Under Missouri Clean Water Law
- MDNR Form C – Application for Discharge Permit – Manufacturing, Commercial, Mining, Silviculture Operations, Process and Stormwater
- Supporting figures

One-quarter of the annual operating fee will be submitted separately to MDNR.

PERMITTING HISTORY

Missouri State Operating Permit No. MO-0139050 ("Permit") was issued to Kerry with an effective date of February 1, 2019. The Permit authorizes the discharge of cooling tower blowdown via Outfall 003 to an unnamed tributary to Goose Creek and includes effluent limits derived through the antidegradation review process. The water quality-based effluent limitations (WQBELs) for copper included in the Permit are 22.0 ug/L and 14.0 ug/L as a daily maximum and monthly average, respectively. Because water sampling at the facility demonstrated a magnitude of copper present in the source groundwater that exceeds the WQBELs imposed at the discharge point, Kerry evaluated if the imposed copper limitations were overly stringent using the copper Biotic Ligand Model (BLM). The *QAPP for Site-Specific Copper BLM* (Ramboll, 2020) dated December 8, 2020, was approved by MDNR on December 10, 2020, and cooling tower blowdown samples were collected from January through March 2021. The analytical sample results were used in the BLM and the evaluation was submitted to MDNR in the *Site-Specific Copper Biotic Ligand Model Report* (Ramboll, 2022) on January 18, 2022. MDNR subsequently approved the proposed site-specific criteria values for Total Recoverable Copper in a letter dated May 4, 2022, stating that the values are scientifically defensible and were derived in accordance with guidance from MDNR.

FACILITY DESCRIPTION AND OUTFALL INVENTORY

Kerry's Greenville facility manufactures and distributes smoke process products for the food and beverage industry. The major operations conducted at the facility consist of sawdust and wood chip handling and drying, calciner operations (thermal treatment applied to the sawdust/wood chips), raw material and finished product storage, and material loading/unloading. Water is supplied to the facility via an onsite groundwater well withdrawing from an aquifer at a depth of 720 feet (pump positioned at approximately 480 feet). Wastewater streams generated onsite currently include sanitary wastewater, miscellaneous process washdowns, noncontact cooling tower blowdown, and water softener backwash (if unable to be incorporated into product). The onsite septic system currently manages sanitary wastewater. Since the expansion of the facility's production capacity and the installation of new cooling towers, cooling tower blowdown has been permitted under Permit No. MO-0139050 as a surface water discharge through Outfall 003 (noncontact cooling tower blowdown), which is conveyed to an Unnamed Tributary to Goose Creek via existing stormwater Outfall 001. The Greenville Facility also discharges stormwater to the Unnamed Tributary to Goose Creek via Outfall 002.

Descriptions of these outfalls are summarized, as follows:

- Outfalls 001 and 002 are stormwater discharges authorized under the General Industrial Stormwater Permit (MOR130068) to discharge stormwater associated with industrial activity to the Unnamed Tributary to Goose Creek.
- Outfall 003 is the blowdown from two stainless steel cooling tower units supplying cooling water to heat exchangers for the condensing of calciner off gases. Blowdown from the cooling tower system is estimated to occur 1-2 times per day, with an average daily flow equivalent to 20 gpm (28,800 GPD) during summer months (June – August) and 10 gpm (14,400 GPD) during September – May.

Outfall 003 discharges are conveyed to the Unnamed Tributary of Goose Creek via Outfall 001.

EFFLUENT CHARACTERIZATION

Form C requires the presentation of effluent characterization data (concentration and mass) for select constituents. As a part of the original permit application dated July 2018, required Form C parameters were sampled and analyzed. Outfall 003 has been regularly sampled per Permit requirements since receiving authorization to discharge noncontact cooling tower blowdown to the Unnamed Tributary to Goose Creek. These results were used to update Form C, particularly to provide long-term average data.

For all data:

- For temperatures, summer was defined as May 1 through November 30, and winter was defined as December 1 through April 30.
- Mass values were not calculated if a parameter was non-detect.
- The presence of a "<" flag indicates that all results for that parameter were nondetect.
- A sample was collected for the required Form C parameters on the following date:
    - Outfall 003 (aka Outfall 101) parameters were collected on March 27, 2018
- Data reported through the electronic discharge monitoring reports (eDMR) system were downloaded from the MDNR Clean Water Information System for May 2020 through May 2022, the most current month available at the time of download. These data are most representative of the current and future operations and accurately estimate flow since the flow measurement system became operational in May 2020.

REQUEST FOR NO NEW SAMPLING

Parameters listed on Form C Section 3.0 Items A and B were analyzed in 2018 and the facility has been operating as described in the July 2018 permit application. Given that this permit modification request is solely to incorporate the approved site-specific criteria values for Total Recoverable Copper and monthly Total Recoverable Copper data have been included on Form C, Kerry respectfully requests that no additional sampling for Form C parameters be required for this permit modification.

MDNR Form A