

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-0001945

Owner: Kraft Foods Global Inc.
Address: Three Lakes Drive, Northfield, IL 60093

Continuing Authority: Same as Above
Address: Same as Above

Facility Name: Kraft Foods Global Inc. WWTF
Facility Address: 2035 E. Bennett, Springfield MO 65804

Legal Description: See Page 2 (Two)
Lat/Long: See Page 2 (Two)

Receiving Stream: See Page 2 (Two)
First Classified Stream and ID: See Page 2 (Two)
USGS Basin & Sub-watershed No.: See Page 2 (Two)

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

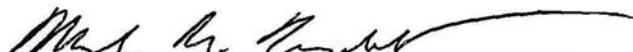
FACILITY DESCRIPTION

Outfall #001 – Cheese; Processed & Natural / Sewerage Works - SIC #2022 / 4952

See Page 2 (Two)

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

October 14, 2009
Effective Date


Mark N. Templeton, Director Department of Natural Resources

October 13, 2014
Expiration Date

Cynthia S. Davies, Regional Director, Southwest Regional Office

Outfall #001 – Cheese; Processed & Natural – SIC#2022
Non-contact Cooling Water

Design Flow is 206,000 gallons per day.

Stormwater runoff and Non-contact Cooling water discharge through this outfall.

Legal Description: SE¼. NW ¼, Sec. 29, T29N, R21W, Greene County
Lat/Long: +3711274 / -09315249

Receiving Stream: Unnamed Tributary to Fassnight Creek (U)
First Classified Stream and ID: Fassnight Creek(C) (03427)
USGS Basin & Sub-watershed No.: (11010002-020001)

Outfall #002 – Cheese; Processed & Natural – SIC#2022
Stormwater runoff.

Actual flow is dependent upon rainfall.

Legal Description: SE¼. NW ¼, Sec. 29, T29N, R21W, Greene County
Lat/Long: +3711285 / -09315263

Receiving Stream: Unnamed Tributary to Fassnight Creek (U)
First Classified Stream and ID: Fassnight Creek(C) (03427)
USGS Basin & Sub-watershed No.: (11010002-020001)

Outfall #003 – Cheese; Processed & Natural – SIC#2022
Stormwater runoff.

Actual flow is dependent upon rainfall.

Legal Description: SE¼. NW ¼, Sec. 29, T29N, R21W, Greene County
Lat/Long: +3711210 / -09315268

Receiving Stream: Unnamed Tributary to Fassnight Creek (U)
First Classified Stream and ID: Fassnight Creek(C) (03427)
USGS Basin & Sub-watershed No.: (11010002-020001)

Outfall #004 – Cheese; Processed & Natural – SIC#2022
Stormwater runoff.

Actual flow is dependent upon rainfall.

Legal Description: SE¼. NW ¼, Sec. 29, T29N, R21W, Greene County
Lat/Long: +3711217 / -09315138

Receiving Stream: Unnamed Tributary to Fassnight Creek (U)
First Classified Stream and ID: Fassnight Creek(C) (03427)
USGS Basin & Sub-watershed No.: (11010002-020001)

Outfall #005 – Cheese; Processed & Natural – SIC#2022
Stormwater runoff and Non-contact Cooling water discharge through Outfall #001.

Actual flow is dependent upon rainfall

Legal Description: SE¼. NW ¼, Sec. 29, T29N, R21W, Greene County
Lat/Long: +3711262 / -09315253

Receiving Stream: Unnamed Tributary to Fassnight Creek (U)
First Classified Stream and ID: Fassnight Creek(C) (03427)
USGS Basin & Sub-watershed No.: (11010002-020001)

A. 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 interim effluent limitations shall become effective upon issuance and remain in effect until **August 31, 2012**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 (Note 1)</u>						
Flow	GPD	*		*	once/weekday	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L	45		30	once/month**	24 hr. composite
Total Suspended Solids	mg/L	*		*	once/month**	grab
pH – Units	SU	***		***	once/month**	grab
Ammonia	mg/L	20		15	once/month**	grab
Temperature	°F	90			once/month**	grab
Oil & Grease	mg/L	15		10	once/month**	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE **November 28, 2009**.

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #002, #003, #004, #005 - Stormwater</u>						
Flow	GPD	*		*	once/quarter****	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L	45		30	once/quarter****	grab
Settleable Solids	mL/L/hr.	1.5		1.0	once/quarter****	grab
pH – Units	SU	***		***	once/quarter****	grab
Oil & Grease	mg/L	15		10	once/quarter****	grab
Temperature	°F	*		*	once/quarter****	grab
Ammonia	mg/L	*		*	once/quarter****	grab
Rainfall****	inches	*		*	once/quarter****	rainfall event total

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE **January 28, 2010**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 9	
PERMIT NUMBER MO-0001945						
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 September 01, 2012 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 (Note 1)</u>						
Flow	GPD	*		*	once/weekday	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L	45		30	once/month**	24 hr. composite
Total Suspended Solids	mg/L	*		*	once/month**	grab
pH – Units	SU	***		***	once/month**	grab
Ammonia (Summer) (Winter)	mg/L	4.9 11.05		1.2 2.7	once/month**	grab
Temperature	°F	90			once/month**	grab
Oil & Grease	mg/L	15		10	once/month**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE October 28, 2012 .						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #002, 003, 004- Stormwater</u>						
Flow	GPD	*		*	once/quarter*****	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L	45		30	once/quarter*****	grab
Settleable Solids	mL/L/hr.	1.5		1.0	once/quarter*****	grab
pH – Units	SU	***		***	once/quarter*****	grab
Oil & Grease	mg/L	15		10	once/quarter*****	grab
Temperature	°F	*			once/quarter*****	grab
Ammonia	mg/L	12.1		4.6	once/quarter*****	grab
Rainfall*****	inches	*		*	once/quarter*****	rainfall event total
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE January 28, 2012 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

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 **September 01, 2012** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #005 – Stormwater (Note 2)						
Flow	GPD	*		*	once/quarter****	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L	45		30	once/quarter****	grab
Settleable Solids	mL/L/hr.	1.5		1.0	once/quarter****	grab
pH – Units	SU	***		***	once/quarter****	grab
Oil & Grease	mg/L	15		10	once/quarter****	grab
Temperature	°F	*			once/quarter****	grab
Ammonia	mg/L	*		*	once/quarter****	grab
Rainfall*****	inches	*		*	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE **January 28, 2012**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS
 IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, < II for POTWs > & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** Sample once per month. Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the month of March (sample collected in March), report due by April 28th.
- *** pH is measured in pH units and is not to be averaged. The pH for all facilities except lagoons is limited to the range of 6.5-9.0 pH units.
- **** **All samples shall be collected from a discharge resulting from a precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable precipitation event. Sampling shall occur once per quarter in the periods of January through March, April through June, July through September, and October through December, please note that monitoring reports shall be submitted no later than the 28th day of the month following the monitoring period (April 28th, July 28th, October 28th, and January 28th, respectively). If a precipitation event does not occur within the reporting period, report as no discharge.** For tracking purposes samples taken anytime in the first quarter (January through March) will be recorded by the department as though they were taken in March, samples taken anytime in the second quarter (April through June) will be recorded by the department as though they were taken in June, samples taken anytime in the third quarter (July through September) will be recorded by the department as though they were taken in September, and samples taken in the fourth quarter (October through December) will be recorded by the department as though they were taken in December. PLEASE NOTE THIS CAN BE MODIFIED FOR ANY SAMPLING PERIOD
- ***** The total precipitation for the event sampled shall be reported.

Note 1 - Outfall #001 shall be sampled during non-precipitation events.

Note 2 - Discharge from Storm water actually flows through Outfall #001. Storm water samples will have non-contact cooling water present.

C. SPECIAL CONDITIONS

1. There shall be no descalants or other maintenance chemicals present in the cooling water discharge. If the chemicals are present, notification to the department shall be made 60 days prior to discharge. At that time the department may require you to conduct a Whole Effluent Toxicity (WET) Test, depending on the MSDS sheet and the season.
2. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

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

2. All outfalls must be clearly marked in the field.
3. Changes in Discharges of Toxic Substances

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

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
4. Report as no-discharge when a discharge does not occur during the report period.

5. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;

C. SPECIAL CONDITIONS (continued)

- (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
6. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared within 30 days and implemented within 90 days of permit issuance. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Storm Water Management For Industrial Activities, Developing Pollution Prevention Plans and Best Management Activities, (Document number EPA 832-R-92-006) published by the United States Environmental Protection Agency (USEPA) in September 1992.

The SWPPP must include the following:

- (a) An assessment of all storm water discharges associated with vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning, and chemical deicing/anti-icing activities. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
 - (b) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. Minimum BMPs are listed in SPECIAL CONDITIONS #7 below.
 - (c) The SWPPP must include a schedule for a bi-monthly site inspection and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. Deficiencies must be corrected within seven days. Inspection reports must be kept on site with the SWPPP. These must be made available to DNR personnel upon request.
 - (d) A provision for designating an individual to be responsible for environmental matters.
 - (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.
7. Permittee shall adhere to the following minimum Best Management Practices:
- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

C. SPECIAL CONDITIONS (continued)

- (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state. Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits

D. SCHEDULE OF COMPLIANCE

1. By **August 31, 2010** submit a completed application for construction permit, application fee, and one copy each of an engineering report, plans and specifications prepared by a professional engineer registered in the State of Missouri to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807, for providing wastewater treatment improvements to comply with the final effluent limitations as listed in Part A of this permit, designed in accordance with Missouri Clean Water Law Regulation 10 CSR 20 Chapter 8.

Please note that you may be able to meet the Ammonia final effluent limits without a construction permit. If the final effluent limits can be achieved without a construction permit please submit in writing by **August 31, 2010** how you are planning to meet the new effluent limits.

2. Within fifteen (15) calendar days of receipt of any request for additional information or changes in the engineering report, plans or specifications, respond and if necessary submit engineering modifications to the department.
3. Within 365 calendar days of issuance of the construction permit, construct the permitted wastewater treatment improvements.
4. Within fifteen (15) calendar days of completion of construction of wastewater treatment improvements, submit a Statement of Work Completed form, signed, sealed, and dated by a professional engineer registered in the State of Missouri certifying that the project has been completed substantially in accordance with the approved plans and specifications. In addition to the Statement of Work Completed, submit an application for a Missouri State Operating Permit modification complete with the appropriate modification fee to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807.
5. Annual progress reports shall be submitted on January 28th of each year until the construction completed. The report shall include what step of the process the facility is at, how much construction has been completed, approximately time of completion, etc. The first report is due **January 28, 2010**.

If you have questions you may contact the Missouri Department of Natural Resources, Southwest Regional Office by calling 417-891-4300 or by mail at 2040 West Woodland, Springfield, Missouri, 65807.

**Missouri Department of Natural Resources
Statement of Basis
Kraft Foods Global Inc. WWTF
NPDES #: MO-MO-0001945
Greene County**

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

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

Part I – Facility Information

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

Facility Description:

Outfall #001 – Non-contact cooling water/HVAC condensate

Outfall #002 – Stormwater runoff

Outfall #003 – Stormwater runoff

Outfall #004 – Stormwater runoff

Outfall #005 – Stormwater runoff and Non-Contact Cooling Water

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	206,000	Primary	Non-contact cooling water/ HVAC condensate	0.65
002	dependent upon precipitation	Primary	Stormwater runoff	0.66
003	dependent upon precipitation	Primary	Stormwater runoff	0.61
004	dependent upon precipitation	Primary	Stormwater runoff	0.80
005	dependent upon precipitation	Primary	Stormwater runoff and Non-contact cooling water	0.65

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

Notice of Violations – 03/27/01 BOD, 03/28/02 Oil/Grease, 11/20/07 BOD, 12/05/07 BOD

Outfall #001 – 10/31/04 Missing Flow, 6/30/05 Missing NH₃, 9/30/05 Missing NH₃, 12/31/05 – Missing NH₃, 3/31/06 Missing NH₃, 6/30/06 pH exceedance, 9/30/06 Missing NH₃, 3/31/07 Missing NH₃, 4/30/07 pH exceedance, 6/30/07 Missing NH₃, 9/30/07 exceedance BOD, 12/31/07 Missing NH₃, 9/30/08 – Missing NH₃, 12/31/08 Missing NH₃,

Outfall #002 – 6/30/04 pH exceedance

Outfall #003 – 6/30/04 pH exceedance, 9/30/04 BOD, O&G exceedance, 9/30/07 BOD exceedance.

Outfall #004 – 6/30/09 BOD, pH exceedance, 12/31/05 Flow exceedance.

Comments: The facility was last inspected on September 28, 2004. The facility was considered to be in compliance during the inspection.

Ammonia was change for Outfall # 002, 003, 004 monthly average to 4.6 because acute is more protective for aquatic life.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

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

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category list effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed Tributary to Fassnight Creek	U		General Criteria	11010002	Ozark/ White
Fassnight Creek	C	03427	General Criteria, LWW, AQL, WBC-B		

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

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed Tributary to Fassnight Creek	0	0	0

MIXING CONSIDERATIONS

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

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

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

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

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

ANTIDegradation:

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

Not Applicable ;

Renewal no degradation proposed and no further review necessary.

APPLICABLE PERMIT PARAMETERS:

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

Bio-solids, Sludge, & Sewage Sludge:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, 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 a 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.

Not Applicable This condition is not applicable to the permittee for this specific facility.

COMPLIANCE AND ENFORCEMENT:

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

Not Applicable ;

The permittee/facility is not under enforcement action and is considered to be in compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Not Applicable ;

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

REASONABLE POTENTIAL ANALYSIS (RPA):

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

Applicable ;

A RPA was conducted for this facility for (parameters) and determined that this facility has the potential to cause or contribute to violations of Water Quality. Please see **APPENDIX C – RPA RESULTS**.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs). Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

Not Applicable ;

This wastewater treatment facility is not a POTW. Influent monitoring is not being required to determine percent removal.

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

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

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power

failures, and vandalism. A SSOs is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

Not Applicable ;

This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ;

The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)].

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* [EPA 832-R-92-006] (Storm Water Management), BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable ;

A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined to total amount of pollutant that may be discharged into that stream without endangering its water quality.

Not Applicable ;

Wasteload allocations were not calculated.

WLA MODELING:

Not Applicable ;

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

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Not Applicable ;

At this time, the permittee is not required to conduct WET test for this facility.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable ;

This facility does not discharge to a 303(d) listed stream.

Adjusted Design Flow:

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

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

Not Applicable ;

Industrial facilities do not qualify for adjusted design flows.

Outfall #001 – Main Facility Outfall (Cooling Water/HVAC)

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD ₅	MG/L	1	45		30	NO	S
TSS	MG/L	1	*		*	NO	S
PH (S.U.)	SU	1	**		**	YES	6.0 – 9.0
AMMONIA AS N (SUMMER)	MG/L	5	4.99		1.21	YES	20, 15

AMMONIA AS N (WINTER)	MG/L	5	11.05		2.67	YES	20, 15
TEMPERATURE	°F	5	90			NO	S
OIL & GREASE	MG/L	1	15		10	NO	S
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

*** - Monitoring requirement only**

** - pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

N/A – Not applicable

S – Same as previous operating permit

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

– Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.

Total Suspended Solids (TSS).

– Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.

pH.

– pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

Temperature. Monitoring requirement due to the toxicity of Ammonia varies by temperature.

Total Ammonia Nitrogen. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Oct. 1 – March 31	6	7.8	3.1	12.1
April 1 – Sept. 30	27	7.8	1.4	12.1

Winter: Oct 1 – March 31, Summer: April 1 – Sept. 30

Summer – Chronic WLA = 1.4 mg N/L, Acute WLA = 12.1 mg N/L. No mixing zone is allowed. Discharges to Unclassified Stream.

LTA_c = 1.4 mg/L (0.619) = 0.867 mg N/L

LTA_a = 12.1 mg/L (0.173) = 2.09 mg N/L

[CV = 1.2, 99th Percentile, 30 day average]

[CV = 1.2, 99th Percentile]

MDL = 0.867 mg/L * 5.76 = 4.99 mg N/L
 AML = 0.867 mg/L * 1.39 = 1.21 mg N/L

[CV = 1.2, 99th Percentile]
 [CV = 1.2, 95th Percentile, n = 30]

Winter – Chronic WLA = 3.1 mg N/L, Acute WLA = 12.1 mg N/L. No mixing zone is allowed. Discharges to Unclassified Stream.

LTA_c = 3.1 mg/L (0.619) = 1.92 mg N/L
 LTA_a = 12.1 mg/L (0.173) = 2.09 mg N/L

[CV = 1.2, 99th Percentile, 30 day average]
 [CV = 1.2, 99th Percentile]

MDL = 1.92 mg/L * 5.76 = 11.05 mg N/L
 AML = 1.92 mg/L * 1.39 = 2.67 mg N/L

[CV = 1.2, 99th Percentile]
 [CV = 1.2, 95th Percentile, n = 30]

Season	Maximum Daily Limit (mg N/L)	Average Monthly Limit (mg N/L)
Oct 1 – March 31	11.05	2.67
April 1 – Sept 30	4.99	1.21

Oil & Grease. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/WEEKDAY	MONTHLY
BOD ₅	ONCE/MONTH	MONTHLY
TSS	ONCE/MONTH	MONTHLY
PH	ONCE/MONTH	MONTHLY
TEMPERATURE	ONCE/MONTH	MONTHLY
AMMONIA AS N	ONCE/MONTH	MONTHLY
OIL & GREASE	ONCE/MONTH	MONTHLY

Outfall #002 - Stormwater

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD ₅	MG/L	1	45		30	NO	S
SS	ML/L/HR	1	1.5		1.0	NO	S
PH (S.U.)	SU	1	**		**	YES	6.0 – 9.0
AMMONIA AS N	MG/L	5	12.1		4.6	YES	NONE
RAINFALL	INCHES	1	*		*	NO	S
OIL & GREASE	MG/L	1	15		10	NO	S
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - **Monitoring requirement only**

** - pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

N/A – Not applicable

S – Same as previous operating permit

Basis for Limitations Codes:

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

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

– Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.

Settable Solids (SS).

– Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.

pH.

– pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

Ammonia as N: Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Oct. 1 – March 31	6	7.8	3.1	12.1
April 1 – Sept. 30	27	7.8	1.4	12.1

Winter: Oct 1 – March 31, Summer: April 1 – Sept. 30

Summer – Zone of Initial Dilution is not allowed. Mixing Zone is allowed = 0 cfs

Acute

$$((Q_e + Q_s) * C - (Q_s * C_s)) / Q_e$$

$$((0 + 0) * 12.1 - (0 * 0.01)) / 0 = 12.1$$

$$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile]

$$MDL = 3.9 \text{ mg/L} * 3.11 = 12.1 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile]

$$AML = 3.9 \text{ mg/L} * 1.19 = 4.6 \text{ mg N/L}$$

[CV = 0.6, 95th Percentile, n = 30]

Because the chronic summer number is the smallest compared to fall, spring, and winter and the summer chronic was higher than the acute, the other seasons for chronic were not calculated because it would have shown that the acute value would be more protective.

Maximum Daily Limit (mg N/L)	Average Monthly Limit (mg N/L)
12.1	4.6

Oil & Grease. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/QUARTER	QUARTERLY
BOD ₅	ONCE/QUARTER	QUARTERLY
SS	ONCE/QUARTER	QUARTERLY
PH	ONCE/QUARTER	QUARTERLY
RAINFALL	ONCE/QUARTER	QUARTERLY
AMMONIA AS N	ONCE/QUARTER	QUARTERLY
OIL & GREASE	ONCE/QUARTER	QUARTERLY

Outfall #003 - Stormwater

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD ₅	MG/L	1	45		30	NO	S
SS	ML/L/HR	1	1.5		1.0	NO	S
PH (S.U.)	SU	1	**		**	YES	6.0 – 9.0
AMMONIA AS N	MG/L	5	12.1		4.6	YES	NONE
RAINFALL	INCHES	1	*		*	NO	S
OIL & GREASE	MG/L	1	15		10	NO	S
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

*** - Monitoring requirement only**

** - pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

N/A – Not applicable

S – Same as previous operating permit

Basis for Limitations Codes:

- | | |
|---|-----------------------------------|
| 11. State or Federal Regulation/Law | 6. Antidegradation Policy |
| 12. Water Quality Standard (includes RPA) | 7. Water Quality Model |
| 13. Water Quality Based Effluent Limits | 8. Best Professional Judgment |
| 14. Lagoon Policy | 9. TMDL or Permit in lieu of TMDL |
| 15. Ammonia Policy | 10. WET test Policy |
| | 11. Dissolved Oxygen Policy |

OUTFALL #003 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

- Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

		LIMITS					LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD ₅	MG/L	1	45		30	NO	S
SS	ML/L/HR	1	1.5		1.0	NO	S
PH (S.U.)	SU	1	**		**	YES	6.0 – 9.0
AMMONIA AS N	MG/L	5	12.1		4.6	YES	NONE
RAINFALL	INCHES	1	*		*	NO	S
OIL & GREASE	MG/L	1	15		10	NO	S
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

*** - Monitoring requirement only**

** - pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

N/A – Not applicable

S – Same as previous operating permit

Basis for Limitations Codes:

- | | |
|---|-----------------------------------|
| 16. State or Federal Regulation/Law | 6. Antidegradation Policy |
| 17. Water Quality Standard (includes RPA) | 7. Water Quality Model |
| 18. Water Quality Based Effluent Limits | 8. Best Professional Judgment |
| 19. Lagoon Policy | 9. TMDL or Permit in lieu of TMDL |
| 20. Ammonia Policy | 10. WET test Policy |
| | 11. Dissolved Oxygen Policy |

OUTFALL #004 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

– Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

Settable Solids (SS).

– Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

pH.

– pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

Ammonia as N: Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Oct. 1 – March 31	6	7.8	3.1	12.1
April 1 – Sept. 30	27	7.8	1.4	12.1

Winter: Oct 1 – March 31, Summer: April 1 – Sept. 30

Summer – Zone of Initial Dilution is not allowed. Mixing Zone is allowed = 0 cfs
Acute

$$\frac{((Q_e + Q_s) \cdot C - (Q_s \cdot C_s))}{Q_e}$$

$$\frac{((0 + 0) \cdot 12.1 - (0 \cdot 0.01))}{0} = 12.1$$

$$LTA_a = 12.1 \text{ mg/L } (0.321) = 3.9 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile]

$$MDL = 3.9 \text{ mg/L} \cdot 3.11 = 12.1 \text{ mg N/L}$$

$$AML = 3.9 \text{ mg/L} \cdot 1.19 = 4.6 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile]

[CV = 0.6, 95th Percentile, n = 30]

Because the chronic summer number is the smallest compared to fall, spring, and winter and the summer chronic was higher than the acute, the other seasons for chronic were not calculated because it would have shown that the acute value would be more protective.

Oil & Grease. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/QUARTER	QUARTERLY
BOD ₅	ONCE/QUARTER	QUARTERLY
SS	ONCE/QUARTER	QUARTERLY
PH	ONCE/QUARTER	QUARTERLY
RAINFALL	ONCE/QUARTER	QUARTERLY
AMMONIA AS N	ONCE/QUARTER	QUARTERLY
OIL & GREASE	ONCE/QUARTER	QUARTERLY

Outfall #005 – Stormwater and Non-contact Cooling water

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	YES	NONE
BOD ₅	MG/L	1	45		30	YES	NONE
SS	ML/L/HR	1	1.5		1.0	YES	NONE
PH (S.U.)	SU	1	**		**	YES	NONE
AMMONIA AS N	MG/L	5	*		*	YES	NONE
RAINFALL	INCHES	1	*		*	YES	NONE
OIL & GREASE	MG/L	1	15		10	YES	NONE
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

*** - Monitoring requirement only**

** - pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

N/A – Not applicable

S – Same as previous operating permit

Basis for Limitations Codes:

21. State or Federal Regulation/Law

6. Antidegradation Policy

- | | |
|---|-----------------------------------|
| 22. Water Quality Standard (includes RPA) | 7. Water Quality Model |
| 23. Water Quality Based Effluent Limits | 8. Best Professional Judgment |
| 24. Lagoon Policy | 9. TMDL or Permit in lieu of TMDL |
| 25. Ammonia Policy | 10. WET test Policy |
| | 11. Dissolved Oxygen Policy |

OUTFALL #005 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

- 45 mg/L as a Weekly Average and 30 mg/L as a Monthly Average. Please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

Settable Solids (SS).

- 1.5 mg/L as a Weekly Average and 1.0 mg/L as a Monthly Average. Please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

pH.

- pH is limited to the range of 6.5 – 9.0 pH units, as per [10 CSR 20-7.031(4)(E)]. pH is measured in pH units and is not to be averaged.

Total Ammonia Nitrogen. Monitoring requirement only. Monitoring for ammonia is included to determine whether a “reasonable potential” exists to exceed water quality standards after the discharge begins.

Oil & Grease. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/QUARTER	QUARTERLY
BOD ₅	ONCE/QUARTER	QUARTERLY
SS	ONCE/QUARTER	QUARTERLY
pH	ONCE/QUARTER	QUARTERLY
RAINFALL	ONCE/QUARTER	QUARTERLY
AMMONIA AS N	ONCE/QUARTER	QUARTERLY
OIL & GREASE	ONCE/QUARTER	QUARTERLY

Administrative Requirements

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

Date of Factsheet: July 31, 2009

Tara Massey
 WP Permitting and Assistance Unit
 (417) 891-4300
 tara.massey@dnr.mo.gov

APPENDIX C – RPA RESULTS:

CONSTITUENT	CMC*	RWC ACUTE *	CCC*	RWC CHRONIC*	REASONAB LE POTENTIAL	# OF SAMPLES* *	CV***
AMMONIA (OUTFALL #001)	12.1	4	3.1	4	YES	22	0.810
AMMONIA - (OUTFALL #002)	12.1	21	3.1	21	YES	11	1.213
AMMONIA - (OUTFALL #003)	12.1	21	3.1	21	YES	11	1.213
AMMONIA (OUTFALL #004)	12.1	8	3.1	8	YES	21	0.9862

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).

A more detailed version including calculations of this RPA is available upon request.