STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

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

Permit No.	MO-0082996
Owner:	Evergy, Inc.
Address:	818 South Kansas Avenue, Topeka, KS 66612
Continuing Authority:	same as above
Address:	same as above
Facility Name:	Iatan Generating Station
Facility Address:	20250 Highway 45 North, Weston, MO 64098
Legal Description:	NW ¼ SE ¼ Sec 31 T54N R36W; Platte County
UTM Coordinates:	see page two
Receiving Stream:	see page two
First Classified Stream and ID:	see page two
USGS Basin & Sub-watershed No.:	Mission Creek-Missouri River; 10240011-0304

authorizes activities pursuant to the terms and conditions of this permit in accordance with the Missouri Clean Water Law and/or the National Pollutant Discharge Elimination System; it does not apply to other regulated activities.

FACILITY DESCRIPTION

Coal fired power plant; SIC # 4911; NAICS # 221112. Iatan is a steam electrical power generation plant primarily engaged in the generation of electricity for distribution and sale, located in Platte County. CWA §316(b) and 40 CFR 423 applicable, no ash is stored in ponds; ponds were closed by complete ash removal. The plant consists of two generating units with a total estimated capability of about 1,596 MW. Unit 1 is single pass cooling withdrawing water from the Missouri River, unit 2 cools by cooling towers, makeup water is from collector wells. This facility does not require a certified wastewater operator per 10 CSR 20-9.030 as this facility is privately owned. Domestic wastewater is recycled for use in other processes.
See pages 2 & 3.

April 1, 2023
Effective Date

March 31, 2028
Expiration Date

John Hoke, Chief, Water Pollution Control Branch

FACILITY DESCRIPTION CONTINUED

ENERGY CENTER OUTFALLS:

OUTFALL #001 – once-through non-contact cooling water, intake circulation water, seal water system subject to CWA §316(a)
UTM Z15 X = 329527; Y = 4368095
Receiving Stream: Missouri River (P) 0226, 303(d)
Design & Actual Flow: 471 MGD

OUTFALL #002 – domestic wastewater; internal monitoring point; discharge re-used for plant processes, does not discharge to waters of the state. Domestic sludge is removed by a contract hauler. Design population equivalent: 265
UTM Z15 X = 329250; Y = 4368548
Design sludge production: 2.3 dry tons per year
Design flow: 12,000 gallons per day (0.012 MGD), 0 discharge to waters of the state

OUTFALL #003 – holding basin, settling. Receives: pretreatment blowdown, filter backwash, carbon purifier, reverse osmosis system, emergency reclaim hopper sumps, plant drains, plant wash-down, excess fire protection water, steam cycle and sample table, auxiliary boilers, neutralization basin, demineralizer, polisher regeneration, water treatment chemical and floor drains, coal pile runoff, fuel yard wash-down, dust suppression, dumper building, precipitation, stormwater runoff [including lay-down area], and stormwater drains. Did not discharge during last permit term. Gate valve must be opened to discharge. Low volume wastes per 40 CFR 423.12(b)(3)
UTM Z15 X = 329237; Y = 4368416
Receiving Stream: Wellson Slough Bypass (C) 3960
Design flow: 16.8 MGD

OUTFALL #007 – stormwater only; graveled substation and parking lot; discharges to north of plant area
UTM Z15 X = 330182; Y = 4368544
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

OUTFALL #008 – stormwater only; southeastern area of plant with laydown yard; drains to the southeast
UTM Z15: X = 330288; Y = 4367711
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

PERMITTED FEATURE #009 – cooling water intake structure, 3/8 inch traveling screen, and wash down water; subject to CWA §316(b)
UTM Z15 X = 329205; Y = 4367991
Withdrawing River: Missouri River (P) 0226, 303(d)
Design Intake Flow (DIF): 536 MGD

OUTFALL #CT1 – cooling tower bank internal monitoring point
UTM Z15 X = 330036; Y = 4368104

OUTFALLS #02B, #004, #005, #006 – eliminated (see fact sheet for additional information)

FACILITY DESCRIPTION CONTINUED

UWL (UTILITY WASTE LANDFILL) ASSOCIATED OUTFALLS:

OUTFALL #010 – utility waste landfill leachate; monitoring well purge water applied to open face of UWL
UTM Zone 15 X = 331268; Y = 4367693
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573
Design flow: 0.41598 MGD; average flow is 0 MGD

OUTFALL #011 – utility waste landfill contact stormwater, Best Management Practices (BMPs), equalization basin
UTM Z15 X = 331380; Y = 4367774
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573
Design flow: 13.661 MGD; actual flow dependent upon precipitation

The following five stormwater outfalls were identified by the facility as ST for stormwater and LC for letdown channel. All are non-contact stormwater at the UWL.

OUTFALL #ST1 – utility waste landfill non-contact stormwater, Best Management Practices (BMPs). Outfall established at the 2023 renewal. Discharge of contact stormwater through this outfall is prohibited.
UTM Z15 X = 331233; Y = 4368755
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

OUTFALL #LC2 – utility waste landfill non-contact stormwater, Best Management Practices (BMPs). Outfall established at the 2023 renewal. Discharge of contact stormwater through this outfall is prohibited.
UTM Z15 X = 331036; Y = 4368828
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

OUTFALL #LC3 – utility waste landfill non-contact stormwater, Best Management Practices (BMPs). Outfall established at the 2023 renewal. Discharge of contact stormwater through this outfall is prohibited.
UTM Z15 X = 330831; Y = 4368757
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

OUTFALL #LC4 – utility waste landfill non-contact stormwater, Best Management Practices (BMPs). Outfall established at the 2023 renewal. Discharge of contact stormwater through this outfall is prohibited.
UTM Z15 X = 330694; Y = 4368581
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

OUTFALL #ST5 – utility waste landfill non-contact stormwater, Best Management Practices (BMPs). Outfall established at the 2023 renewal. Discharge of contact stormwater through this outfall is prohibited.
UTM Z15 X = 330702; Y = 4368362
Receiving Stream: Tributary to Harpst Chute
First Classified Stream: Harpst Chute (P) 3573

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001 *non-contact cooling water*	**TABLE A-1** **INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The facility is authorized to discharge from outfall(s) as specified. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in Table A-2 must be achieved as soon as possible but no later than **April 1, 2027**. These interim effluent limitations are effective beginning **April 1, 2023** and remain in effect through **March 31, 2027** or as soon as possible. Discharges shall be controlled, limited and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNIT	INTERIM EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: T					
Flow	MGD	*	*	daily	24 hr. total
Effluent Flow (Q_e)	cfs	*	*	daily	measured
Effluent Temperature (T_e)	°F	*	*	daily	measured
Stream Flow (Q_s)	cfs	*	*	daily	measured
Stream Temperature (T_s)	°F	*	*	daily	measured
Temperature Cap T_{cap} ♠	°F	*	*	daily	calculated
Temperature Change ΔT ♦	°F	5	*	daily	calculated

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2023X.

OUTFALL #001 *non-contact cooling water*	**TABLE A-2** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **April 1, 2027**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	UNIT	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: T					
Flow	MGD	*	*	daily	24 hr. total
Effluent Flow (Q_e)	cfs	*	*	daily	measured
Effluent Temperature (T_e)	°F	*	*	daily	measured
Stream Flow (Q_s)	cfs	*	*	daily	measured
Stream Temperature (T_s)	°F	*	*	daily	measured
Temperature Cap T_{cap} ♠	°F	90	*	daily	calculated
Temperature Change ΔT ♦	°F	5	*	daily	calculated

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2027.

OUTFALL #001 *non-contact cooling water*	**TABLE A-3** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **April 1, 2023** and remain in effect until expiration of the permit. Discharges shall be controlled, limited and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNIT	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: C					
Chlorine, Free Available ‡‡	mg/L	0.5	0.2	Conditional	grab
Chlorine, Total Residual ‡, ‡‡	µg/L	23.6 (ML=130)	11.8 (ML=130)	Conditional	grab
Acute WET Test ⁝, ‡‡	TUa	*	-	Conditional	grab

MONITORING REPORTS SHALL BE SUBMITTED NO MORE THAN 30 DAYS FROM BIOCIDE USE.

Chlorine & Biocide Report ǂ SHALL BE SUBMITTED YEARLY; THE FIRST REPORT IS DUE JANUARY 28, 2024.

OUTFALL #003 *categorical wastewater*	**TABLE A-4** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **00** and remain in effect until expiration of the permit. Discharges shall be controlled, limited, and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MINIMUM MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M					
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
CONVENTIONAL					
Oil & Grease	mg/L	15	10	once/month	grab
pH †	SU	6.5 to 9.0	-	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
METALS					
Aluminum, Total Recoverable	µg/L	750	374	once/month	grab
NUTRIENTS					
Ammonia as N	mg/L	*	*	once/month	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as Nitrogen	mg/L	*	*	once/month	grab
Nitrogen, Total (TN)	mg/L	*	*	one/month	calculation ǂǂ
Phosphorus, Total (TP)	mg/L	*	*	once/month	grab
OTHER					
Chloride	mg/L	*	*	once/month	grab
Sulfate	mg/L	*	*	once/month	grab
Chloride Plus Sulfate	mg/L	*	*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2023.					
LIMIT SET: WA					
OTHER					
Whole Effluent Toxicity, Acute ⁝	TU_a	*		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2024.					

OUTFALL #010 *utility waste landfill leachate wastewater*	**TABLE A-5** **INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The facility is authorized to discharge from outfall(s) as specified. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in Table A-6 must be achieved as soon as possible but no later than **April 1, 2029**. These interim effluent limitations are effective beginning **April 1, 2023** and remain in effect through **March 31, 2029** or as soon as possible. Discharges shall be controlled, limited, and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNITS	INTERIM EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MINIMUM MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M					
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
Hardness (CaCO3)	mg/L	*	*	once/month	grab
CONVENTIONAL					
Oil & Grease	mg/L	20	15	once/month	grab
pH †	SU	6.5 to 9.0	-	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/month	grab
Boron, Total Recoverable	µg/L	*	*	once/month	grab
Magnesium, Total Recoverable	µg/L	*	*	once/month	grab
Manganese, Total Recoverable	µg/L	*	*	once/month	grab
Molybdenum, Total Recoverable	µg/L	*	*	once/month	grab
Nickel, Total Recoverable	µg/L	*	*	once/month	grab
Selenium, Total Recoverable	µg/L	*	*	once/month	grab
NUTRIENTS					
Ammonia as N	mg/L	*	*	once/month	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as Nitrogen	mg/L	*	*	once/month	grab
Nitrogen, Total (TN)	mg/L	*	*	once/month	calculation ǂǂ
OTHER					
Chloride	mg/L	*	*	once/month	grab
Sulfate	mg/L	*	*	once/month	grab
Chloride plus Sulfate	mg/L	*	*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2023.					
LIMIT SET: WA					
Whole Effluent Toxicity, Acute ⁝	TU_a	*		once/year	grab
Limit Set: WC					
Whole Effluent Toxicity, Chronic ⁝	TU_c	*		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2024.					

OUTFALL #010 *utility waste landfill leachate wastewater*	**TABLE A-6** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **April 1, 2029** and remain in effect until expiration of the permit. Discharges shall be controlled, limited, and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MINIMUM MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M					
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
Hardness (CaCO3)	mg/L	*	*	once/month	grab
CONVENTIONAL					
Oil & Grease	mg/L	20	15	once/month	grab
pH †	SU	6.5 to 9.0	-	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/month	grab
Boron, Total Recoverable	µg/L	3285	1638	once/month	grab
Magnesium, Total Recoverable	µg/L	*	*	once/month	grab
Manganese, Total Recoverable	µg/L	*	*	once/month	grab
Molybdenum, Total Recoverable	µg/L	*	*	once/month	grab
Nickel, Total Recoverable	µg/L	*	*	once/month	grab
Selenium, Total Recoverable	µg/L	8.2	4.1	once/month	grab
NUTRIENTS					
Ammonia as N	mg/L	*	*	once/month	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as Nitrogen	mg/L	*	*	once/month	grab
Nitrogen, Total (TN)	mg/L	*	*	once/month	calculation ǂǂ
OTHER					
Chloride	mg/L	*	*	once/month	grab
Sulfate	mg/L	*	*	once/month	grab
Chloride plus Sulfate	mg/L	1000	*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MAY 28, 2029.					
LIMIT SET: WA					
Whole Effluent Toxicity, Acute ⁝	TU_a	0.3 (ML1.0)		once/year	grab
Limit Set: WC					
Whole Effluent Toxicity, Chronic ⁝	TU_c	1.6		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2030.					

OUTFALL #011 *Contact UWL Stormwater*	**TABLE A-7** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **April 1, 2023** 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 LIMITATIONS		BENCH-MARKS	MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE		MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: Q						
PHYSICAL						
Flow	MGD	*		-	once/quarter ◊	24 Hr Est.
CONVENTIONAL						
Chemical Oxygen Demand	mg/L	**		90	once/quarter ◊	grab
Oil & Grease	mg/L	**		10	once/quarter ◊	grab
pH †	SU	**		6.0 to 9.0	once/quarter ◊	grab
Total Suspended Solids	mg/L	**		100	once/quarter ◊	grab
METALS						
Aluminum, Total Recoverable	µg/L	**		1100	once/quarter ◊	grab
OTHER						
Chloride	mg/L	*		-	once/quarter ◊	grab
Sulfate	mg/L	*		-	once/quarter ◊	grab
Chloride + Sulfate	mg/L	**		2000	once/quarter ◊	grab
Surfactants ⏚	mg/L	**		1.0	once/quarter ◊	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2023.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

* Monitoring and reporting requirement only

♠ Temperature Cap [T_{cap}] is the temperature of the receiving stream at the end of the regulatory mixing zone. Q_s can be the Missouri River flow measured at St. Joseph (USGS 06818000).
$T_{cap} = [((Q_s/4)T_s + Q_eT_e)) / ((Q_s/4) + Q_e)]$

♦ Delta Temperature is the amount in temperature °F that a facility causes the receiving stream's temperature to raise at the end of the regulatory mixing zone. It is designated with [ΔT] in the equation below.
$\Delta T = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e))] - T_s$

** Monitoring and reporting requirement with benchmark. See Special Conditions for additional requirements.

‡ Chlorine, Total Residual. This permit contains a Total Residual Chlorine (TRC) limit (or monitoring). The effluent limit is below the minimum quantification level of the most sensitive EPA approved CLTRC methods. The department has determined the current acceptable minimum level (ML) for total residual chlorine is 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The facility will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured and detection values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and non-detect 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. The facility shall report less than "<" the value obtained on the meter for non-detections. The less than symbol shall not be used for detections. The facility shall not log the ML as the quantified value unless the quantified value is the ML. Do not chemically dechlorinated unless it is necessary to meet permit limits.

‡‡ This permit contains a free available chlorine limit and conditional sampling. Table A-3 in the permit describes conditional sampling. The facility must collect samples and analyze for free available chlorine, total residual chlorine, and whole effluent toxicity, upon every occasion (daily, concurrently) of chlorine use. The facility is not required to sample for chlorine if the biocide used is not chlorine based. However, the facility must still collect a sample for WET testing (daily, concurrently) upon biocide use.

ǂ To comply with yearly reporting, each year, even if chlorine or biocides/molluscicides are not used, the facility will submit a short report. The report must detail each chemical used, the dosing concentration, and the time applied to the system. The facility must sample for free available chlorine, total residual chlorine, and whole effluent toxicity, upon every occasion (daily, concurrently) of chlorine use. The facility is not required to sample for chlorine if the biocide/molluscicide used is not chlorine based; however, the facility must still collect a sample (daily, concurrently) for WET testing if any biocide/molluscicide is used.

ǂǂ Nitrogen, Total (TN) is the sum of nitrate + nitrite + TKN.

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

ǂ Surfactants: the facility will utilize a method sufficient to analyze LAS in wastewater, down to at least 0.5 mg/L.

⁝ WET tests: see Part E, Wet Test Conditions.

◊ Quarterly sampling

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

B. SCHEDULE OF COMPLIANCE

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

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

2. The facility shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date. The first report is due April 1, 2024.

3. Before April 1, 2029, the facility shall attain compliance with the final effluent limits at outfall #010, for total recoverable boron, total recoverable selenium, and chloride plus sulfate.

4. Before April 1, 2027, the facility shall attain compliance with the final effluent limits at outfall #001, for temperature.

5. Additional Cooling Water Intake requirements are below.

6. Annual reporting requirements will be uploaded into the eDMR system.

C. 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 August 1, 2019, respectively, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. Cooling Water Intake Structure Requirements for Impingement.
   In accordance with 125.98(b)(2), this permit incorporates Best Technology Available (BTA) requirements per 40 CFR 401.14 to reduce impingement mortality per 40 CFR 125 Subpart J. The following shall be completed by the timeframes listed below or as soon as practicable in accordance with 40 CFR 125.98(c):
   (a) The BTA determination is modified 3/8 inch mesh traveling screens with optimization for fish friendly return to the river as described at 40 CFR 125.92(s) for this facility.
   (b) Within 2.5 years of permit effective date, the facility shall complete installation of 3/8 inch mesh (or finer) traveling screens with fish-friendly returns for Unit 1 intake bay.
   (c) The facility shall attempt to install the exit of the fish return out of bounds of the extent of the thermal discharge mixing zone.
   (d) The facility shall install the exit of the fish return downstream of the intake to minimize re-impingement.
   (e) A complete description of the modified traveling screens and associated equipment must be included. For example, type of mesh, mesh slot size, pressure sprays, and details regarding the fish return mechanisms.
   (f) Screen optimization performance study in accordance with 40 CFR 125.98(e).
      i. The facility shall supply all studies 180 days prior to permit expiration, with the application for renewal. The study must include at a minimum pursuant to 40 CFR 122.21(r)(6)(i):
         (A) Collecting data no less frequently than monthly.
         (B) Biological data collection representative of the impingement and the impingement mortality at the intakes subject to this provision;
         (C) A taxonomic identification to the lowest taxon possible of all organisms collected;
         (D) The method in which naturally moribund organisms are identified and taken into account;
         (E) The method in which mortality due to holding times is taken into account;
         (F) If the facility entraps fish or shellfish, a count of entrapment, as defined at 40 CFR 125.92(j), as impingement mortality; and
         (G) The percent impingement mortality reflecting optimized operation of the modified traveling screen and all supporting calculations.
      ii. Monthly sampling, minimally. If conditions persist such that sampling cannot be completed in the month (e.g. safety issues/river icing; or operational shutdown) an explanation will be included in the report, and a make-up sampling will occur. The report must include 24 sampling events.
      iii. The facility shall determine either visually or genetically the identified species of any sturgeon impinged or entrapped during the study. If visually, the facility shall use the appropriate morphometric and meristic counts to determine the exact species of each sturgeon.
   (g) Operational measures shall be implemented in accordance with 40 CFR 125.92(w) as necessary.

2. Cooling Water Intake Structure: Entrainment and Cooling Water Discharges.
In accordance with 125.98(b)(2), this permit incorporates Best Technology Available (BTA) and Best Available Technology (BAT) requirements per 40 CFR 401.14 for entrainment per 40 CFR 125.94(d) and to comply with 40 CFR 125.3(d)(3) for establishment of technology for cooling intake and discharges. The BTA determination for entrainment and discharge of thermal pollution is currently single pass cooling for this facility. Future entrainment determinations may vary based on future studies submitted by the facility.

3. 40 CFR 423.13(c)(2): Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the [state] that the units in a particular location cannot operate at or below this level of chlorination.

4. 40 CFR 125.98(b)(1): Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

5. 40 CFR 423.13(a): There shall be no discharge of polychlorinated biphenyl compounds such as those commonly [historically] used for transformer fluid.

6. 40 CFR 423.13(h)(1)(i) and (k)(1)(i): The facility shall not discharge ash transport water.

7. 40 CFR 423.13(d)(1): The facility shall not discharge any of the 126 priority pollutants (listed in Appendix A of 40 CFR 423) in cooling tower blowdown in any detectable amount except for total recoverable chromium (daily maximum and monthly average limit of 200 µg/L) and total recoverable zinc (daily maximum and monthly average limit of 1000 µg/L). Compliance with this condition shall be determined from:
   (a) Analytical results from the parameters in Appendix A submitted annually. Report "0" for any pollutant not detected by the most sensitive analytical method. A detailed report shall be submitted with the results, including the laboratory's detection limit within the finalized laboratory report of each pollutant and a copy of the quality check report included with the laboratory narrative. The facility will directly sample a discharge from the cooling towers during a blowdown event prior to mixing with any other effluent; or
   (b) Narrative justification or engineering calculations demonstrating the 126 priority pollutants (except for Cr and Zn) are not detectable in the blowdown discharge. Report "0" any pollutant not detectable using these methods. The facility must sample and submit results for total recoverable chromium and total recoverable zinc.

8. The facility must manage the utility waste landfill contact stormwater ponds to ensure there is sufficient capacity to capture the run-off from a 25-year 24-hour storm event.

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

10. Any discharge not meeting permitted limits may be pumped and hauled to an accepting wastewater treatment facility, or otherwise properly disposed.

11. Oil/Water Separators. This site is authorized to operate oil water separator tanks (considered USTs) for the treatment of wastewater or stormwater and falls under 10 CSR 26-2.010(2)(B) because the system is designed to treat water with petroleum oils. OWS(s) considered UST(s) serving this facility are hereby authorized and shall be operated per manufacturer's specifications. The specifications and operating records must be made accessible to department staff upon request.

12. Electronic Discharge Monitoring Report (eDMR) Submission System. The NPDES Electronic Reporting Rule, 40 CFR Part 127, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data for the NPDES program. The eDMR system is currently the only department-approved reporting method for this permit unless specified elsewhere in this permit, or a waiver is granted by the department. The facility must register in the department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as "WET Test Chronic Outfall 002 Jan 2023", or "Outfall004-DailyData-Mar2025".

13. Stormwater Pollution Prevention Plan (SWPPP).
The facility's SIC code or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) and hence shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit effective date. The SWPPP must be kept on-site and not sent to the department unless specifically requested. The SWPPP must be reviewed and updated annually or if site conditions affecting stormwater change.
The facility shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators,* (EPA 833-B-09-002 March 2021) https://www.epa.gov/sites/production/files/2021-03/documents/swppp_guide_industrial_2021_030121.pdf The purpose of the SWPPP and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was ineffective at providing the necessary protections for which it was designed. Corrective action describes the steps the facility took to eliminate the deficiency.
The SWPPP must include:
(a) A listing of specific contaminants and their control measures (BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
(b) A map with all outfalls and structural BMPs marked.
(c) If within the boundaries of a regulated Municipal Separate Storm Sewer System (MS4s), list the name of the regulated MS4.
(d) A schedule for at least once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. A BMP is considered to be disrupted if it is rendered ineffective as a result of damage or improper maintenance. Categorization of a deficiency is reliant on the length of time required to correct each disrupted BMP. Corrective action after discovering a disrupted BMP must be taken as soon as possible. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
    (1) Operational deficiencies are disrupted BMPs which the facility is able to and must correct within 7 calendar days.
    (2) Minor structural deficiencies are disrupted BMPs which the facility is able to and must correct within 14 calendar days.
    (3) Major structural deficiencies (deficiencies projected to take longer than 14 days to correct) are disrupted BMPs which must be reported as an uploaded attachment through the eDMR system with the DMRs. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. If required by the department, the facility shall work with the regional office to determine the best course of action. The facility may consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
    (4) All actions taken to correct the deficiencies shall be included with the written report, including photographs, and kept with the SWPPP. Additionally, corrective action of major structural deficiencies shall be reported as an uploaded attachment through the eDMR system with the DMRs.
    (5) BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I.
    (6) Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department personnel upon request. Electronic versions of the documents and photographs are acceptable.
(e) A provision for designating a responsible individual for environmental matters and a provision for providing training to all personnel involved in housekeeping, material handling (including but not limited to loading and unloading), storage, and staging of all operational, maintenance, storage, and cleaning areas. Proof of training shall be submitted upon request by the department.

14. Site-wide minimum Best Management Practices (BMPs). At a minimum, the facility shall adhere to the following:
(a) Provide good housekeeping practices on the site to keep trash from entry into waters of the state. Dumpsters must remain closed when not in use.
(b) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas, to prevent the contamination of stormwater from these substances.
(c) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
(d) Store all paint, solvents, petroleum products, petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. Spill records shall be retained on-site or readily accessible electronically.
(e) Ensure adequate provisions are provided to prevent surface water intrusion into wastewater storage basin(s) and to divert stormwater runoff around the wastewater storage basin.

(f) Provide sediment and erosion control sufficient to prevent or minimize sediment loss off of the property, and to protect embankments from erosion.
(g) Wash water for vehicles, building(s), or pavement must be handled in a no-discharge manner (infiltration, hauled off-site, etc.). Describe the no-discharge method used and include all pertinent information (quantity/frequency, soap use, effluent destination, BMPs, etc.) in the application for renewal. If wash water is not produced, note this instead.
(h) Outdoor fire protection test water will be continued to be handled in a no-discharge manner via recycling. Any inadvertent losses to the ground is considered de minimis. The facility tests 55 hydrants with chlorinated water at about 200 gallons per test, and recycles water back in to the on-site clarifier; about 11,000 gallons annually.
(i) The facility shall not apply salt and sand (traction control) in excess of what is required to maintain safe roadways and walkways. In the spring, after potential for additional snow or ice accumulation, if there is evidence of significant excess traction control materials, the facility shall remove excess sand or salt as soon as possible to minimize and control the discharge of salt and solids. At all times the facility shall use salt judiciously to minimize freshwater salinization.
(j) Salt and sand shall be stored in a manner minimizing mobilization in stormwater (for example: under roof, in covered container, in secondary containment, under tarp, etc.).

15. Minimum Best Management Practices for areas serving outfalls #007 and #008.
(a) Oil capture or filtration devices will be maintained. Minimal monthly visual inspections are required. Inspections should also be completed after known spill events. Replacements must be made if the device is damaged or past useful life.
(b) Rock check dams are established and will be inspected monthly.
(c) Weirs must be maintained free of vegetation.
(d) For outfall #007: magnetic drain covers are required at effected drains. These must be inspected monthly and cleaned as necessary.
(e) Pollutant monitoring is not required. However, benchmarks of 100 mg/L for TSS, and 90 mg/L for COD are established as targets if sampling is conducted.

16. The permittee is authorized to discharge stormwater from outfalls #ST1, #LC2, #LC3 and #LC4, and #ST5 not contaminated by exposure to industrial activities or materials from the industrial facility or site. Permittee shall maintain adequate cover on the landfill to ensure that any discharge from the outfalls is not contaminated by exposure to industrial activities or materials from the industrial facility, UWL, or site. The facility will maintain outfalls #ST1, #LC2, #LC3, #LC4, and #ST5 as no-exposure outfalls by maintaining adequate cover. The facility will ensure adequate cover is maintained by inspecting at least one time each month.

17. Facility-Wide Technology Assessment
(a) The facility is required to evaluate the pollutants of concern (POC) being discharged at the facility as identified in (b) 1 and (b) 2 of this section. During the evaluation process, if sampling and averaging the pollutant is below baseline x10, the pollutant is no longer considered a POC. Evaluation of pollutants and the associated studies are required to be submitted with the next permit renewal application materials; see Renewal Requirements Special Condition. If less than 10 discharge samples are collected during the next permit term, a study cannot be completed and therefore is not required.
(b) For each identified POC, the facility shall provide an appropriate assessment for one of the requirements as follows:
    1. For BCT requirements, this shall include nitrate plus nitrite as N for outfall #003 and, total phosphorus at outfall #003. If long term data show the specified pollutants are below the baseline x10 threshold then no study is required. Studies must be conducted as follows:
        i. The reasonableness of the relationship between the costs of attaining a reduction in effluent and the effluent reduction benefits derived;
        ii. The comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources;
        iii. The age of equipment and facilities involved;
        iv. The process employed;
        v. The engineering aspects of the application of various types of control techniques;
        vi. Process changes; and
        vii. Non-water quality environmental impact (including energy requirements).
    2. For BAT requirements, this shall include an evaluation of reduction of thermal discharge for outfalls #001, boron, magnesium, manganese, and molybdenum at outfall #010, and iron at outfall #003. If long term data show the specified pollutants are below the baseline x10 threshold then no study is required. Studies must be conducted as follows:
        i. The age of equipment and facilities involved;
        ii. The process employed;
        iii. The engineering aspects of the application of various types of control techniques;
        iv. Process changes;
        v. The cost of achieving such effluent reduction; and
        vi. Non-water quality environmental impact (including energy requirements).

18. Stormwater Benchmarks. This permit stipulates numeric pollutant benchmarks applicable to the facility's stormwater discharges.
    (a) Benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Stormwater monitoring, numeric benchmark compliance, and visual inspections shall be used to determine the overall effectiveness of the BMPs identified in the SWPPP.
    (b) If a sample exceeds a benchmark concentration, the facility must review the SWPPP and BMPs to determine what improvements or additional controls are needed to reduce pollutant concentrations in future stormwater discharges.
    (c) Every time a numeric benchmark exceedance occurs, a Corrective Action Report (CAR) must be completed. A CAR is a document recording the efforts undertaken by the facility to improve BMPs to meet benchmarks in future samples. CARs must be retained with the SWPPP and be available to the department upon request. This permit may require CARs be submitted to the department upon permit renewal; see Renewal Requirements section below.
    (d) Failure to take corrective action to address numeric benchmark exceedance, and failure to make measureable progress towards achieving the numeric benchmark(s), is a permit violation.
    (e) Stormwater benchmarks and required minimum BMPs as described in this permit are enforceable permit conditions. Any requested change(s) to numeric benchmark values or deviation from minimum BMP requirements must be established through the permitting process. Assessment, evaluation, and implementation of specific BMPs to meet numeric benchmarks or minimum BMP requirements, must be addressed through the SWPPPs and CARs.

19. Secondary Containment
    The drainage area around the secondary containment area and the interior of the containment area shall be inspected monthly. Solids, sludge, and soluble debris shall not be allowed to accumulate in the secondary containment.
    (a) The interior of the secondary containment area shall be checked at least monthly for signs of leaks, spills, or releases of petroleum.
    (b) All petroleum captured in the secondary containment area shall be expeditiously removed and the source of the petroleum determined. Leaks or otherwise compromised equipment or appurtenances shall be promptly addressed/repaired.
    (c) Before releasing water accumulated in petroleum secondary containment areas, the water and area must be examined for hydrocarbon odor and presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).
    (d) Unimpacted stormwater (i.e. free from hydrocarbon odor and presence of sheen), must be drained from the secondary containment as soon as reasonably possible after a precipitation event.
    (e) If subparts (a) and (b) above were not followed, impacted stormwater shall not be discharged from the secondary containment and shall instead be managed in accordance with legally approved methods for disposal of process wastewater, such as being sent to an accepting wastewater treatment facility.
    (f) If subparts (a) and (b) were followed, impacted stormwater can only be drained from the secondary containment after removal of all odor or sheen utilizing appropriate methods.
    (g) The area surrounding the secondary containment must be free of signs of vegetative stress or other indicia of petroleum discharge.
    (h) The area below the outlet of the secondary containment area must be maintained to minimize soil washout, such as with stabilized vegetation, rip rap, or by releasing accumulated water slowly.
    (i) Records of all inspections, testing, and/or treatment of water accumulated in secondary containment shall be available on demand to the department. Electronic records retention is acceptable. These records must be included in the SWPPP.

20. 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 for permit shield, and the CWA §402(k) for toxic substances. 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 CWA §§301(b)(2)(C) and (D), §304(b)(2), and §307(a)(2), if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not already limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause, including determination new pollutants found in the discharge not identified in the application for the new or revised permit. The filing of a request by the facility for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

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

22. Report 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.

23. Reporting of Non-Detects.
    (a) Compliance analysis conducted by the facility or any contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated. See sufficiently sensitive test method requirements in Standard Conditions Part I, §A, No. 4 regarding proper testing and detection limits used for sample analysis. For the purposes of this permit, the definitions in 40 CFR 136 apply; method detection limit (MDL) and laboratory-established reporting limit (RL) are used interchangeably in this permit. The reporting limits established by the laboratory must be below the lowest effluent

limits established for the specified parameter (including any parameter's future limit after an SOC) in the permit unless the permit provides for an ML.

(b) The facility shall not report a sample result as "non-detect" without also reporting the MDL. Reporting "non-detect" without also including the MDL will be considered failure to report, which is a violation of this permit.

(c) For the daily maximum, the facility shall report the highest value; if the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method detection limit (MDL) or the highest reporting limit (RL); whichever is higher (e.g. <6).

(d) When calculating monthly averages, zero shall be used in place of any value(s) not detected. Where all data used in the average are below the MDL or RL, the highest MDL or RL shall be reported as "<#" for the average as indicated in item (c).

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

25. This permit does not cover land disturbance activities.

26. This permit does not apply to fertilizer products receiving a current exemption under the Missouri Clean Water Law and regulations in 10 CSR 20-6.015(3)(B)8, and are land applied in accordance with the exemption.

27. This permit does not allow stream channel or wetland alterations unless approved by Clean Water Act §404 permitting authorities.

28. This permit does not authorize in-stream treatment, the placement of fill materials in flood plains, placement of solid materials into any waterway, the obstruction of stream flow, or changing the channel of a defined drainage course.

29. All records required by this permit may be maintained electronically; these records can be maintained in a searchable format.

30. Changes in Discharges of Toxic Pollutant.
In addition to the reporting requirements under 40 CFR 122.41, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director per 40 CFR 122.42(a)(1) and (2) as soon as recognizing:

(a) An activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if 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) 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 the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
  (4) The level established by the Director in accordance with 40 CFR 122.44(f).

(c) Authorization of new or expanded pollutant discharges may be required under a permit modification or renewal, and may require an antidegradation review.

31. This permit does not authorize the facility to accept, treat, or discharge wastewater from other sources unless explicitly authorized herein. If the facility would like to accept, treat, or discharge wastewater from another activity or facility, the permit must be modified to include external wastewater pollutant sources in the permit.

32. Any discharges (or qualified activities such as land application) not expressly authorized in this permit, and not clearly disclosed in the permit application, cannot become authorized or shielded from liability under CWA section 402(k) or Section 644.051.16, RSMo, by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including any other permit applications, funding applications, the SWPPP, discharge monitoring reporting, or during an inspection. Submit a permit modification application, as well as an antidegradation determination if appropriate, to request authorization of new or expanded discharges.

33. Renewal Application Requirements.

(a) This facility shall submit an appropriate and complete application to the department no less than 180 days prior to the expiration date listed on page 1 of the permit.

E. WET TEST CONDITIONS

Outfall #003: Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:

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

(b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing required to stabilize the sample during shipping.

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

(d) The laboratory shall not chemically dechlorinate the sample.

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

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

(g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50% (LC_{50}) is the effluent concentration causing death in 50% of the test organisms at a specific time.

Outfall #010

For outfall #010, the facility shall conduct either an acute or chronic WET test; dependent on the length of discharge. A chronic WET test shall be initiated; if the facility cannot collect all three samples required for a chronic test, an acute test shall be completed on the first aliquot only, instead.

Outfall #010 Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:

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

(b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing required to stabilize the sample during shipping.

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

(d) The laboratory shall not chemically dechlorinate the sample.

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

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

(g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50% (LC_{50}) is the effluent concentration causing death in 50% of the test organisms at a specific time.

After the SOC, the following also applies:

(h) Accelerated Testing Trigger: If the regularly scheduled acute WET test exceeds the TU_a limit, the facility 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_a. This permit requires the following additional toxicity testing if any one test result exceeds a TU_a 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_a limit, and once every two weeks until one of the following conditions are met:
   i. Three consecutive multiple-dilution tests are below the TU_a limit. No further tests need to be performed until the next regularly scheduled test period.
   ii. A total of three multiple-dilution tests exceed the TU_a limit (do not need to be sequential)

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

(3) The facility 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_a limit.

(4) The facility may begin a TIE or TRE during the follow-up testing phase.

(i) TIE/TRE Trigger: The following shall apply upon the exceedance of the TU_a limit in three accelerated follow-up WET tests. The facility must 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 facility does not contact the Department upon the third follow up test exceeding a TU_a limit, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The facility 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.

Outfall #010 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 facility 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 required to stabilize the sample during shipping.

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

(d) The laboratory shall not chemically dechlorinate the sample.

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

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

(g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) for each species, and 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% Inhibition Effect Concentration (IC_{25}), or No Effect Concentration ($NOEC_{25}$) is the effluent concentration causing 25% reduction in mean young per female or in growth for the test population.

After the SOC, the following also applies:

(h) Accelerated Testing Trigger: If the regularly scheduled WET test exceeds the TU_c limit, the facility shall conduct accelerated follow-up WET testing as prescribed here. 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.

(i) 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 limit, and once every two weeks until one of the following conditions are met:
- i. Three <u>consecutive</u> multiple-dilution tests are below the TU_c limit. No further tests need to be performed until the next regularly scheduled test period.
- ii. A total of three multiple-dilution tests exceed the TU_c limit (do not need to be sequential)

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

(3) The facility 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.

(4) The facility may begin a TIE or TRE during the follow-up testing phase.

(j) TIE/TRE Trigger: The following shall apply upon the exceedance of the TU_c limit in three accelerated follow-up WET tests. The facility must 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 facility 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 facility 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 shall be approved by the Department before the TIE or TRE is begun.

<u>F. NOTICE OF RIGHT TO APPEAL</u>

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal shall be directed to: Administrative Hearing Commission; U.S. Post Office Building, Third Floor; 131 West High Street, P.O. Box 1557; Jefferson City, MO 65102-1557; Phone: 573-751-2422; Fax: 573-751-5018; Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL OF
MO-0082996
IATAN GENERATING STATION

The Federal Water Pollution Control Act (Clean Water Act (CWA) §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 (§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 644 RSMo as amended). MSOPs may also cover underground injection, non-discharging facilities, and land application facilities. Permits 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 applicable regulations, rationale for the development of limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or permit) listed below. A factsheet is not an enforceable part of a permit.

PART I. FACILITY INFORMATION

Facility Type: Industrial: Major, Primary, Categorical; >1 MGD
SIC Code(s): 4911
NAICS Code(s): 221112
Application Date: 09/30/2021
Modification Date: 03/01/2020
Expiration Date: 03/31/2022
Last Inspection: 2012

FACILITY DESCRIPTION

Iatan is a steam electrical power generation plant primarily engaged in the generation of electricity for distribution and sale, located in Platte County. The plant consists of two generating units with a total estimated capability of about 1,596 MW.

PERMITTED FEATURES TABLE

OUTFALL	DESIGN FLOW MGD	DESIGN FLOW CFS	TREATMENT LEVEL	EFFLUENT TYPE
#001	356.6	551.7	none	once-through cooling water, intake circulation (warming) water, seal water system
#002	0.011	0.02	chlorination, dechlorination, aeration, settling	domestic WWTF, does not discharge, facility reusing water in plant systems
#02B	n/a	n/a	n/a	eliminated (reverted to #002)
#003	16.8	31.22	settling, BMPs, flow controlled, reuse/recirculated	coal pile, holding pond, rarely discharges, 163 acres of stormwater
#004	n/a	n/a	n/a	eliminated, non-industrial stormwater
#005	n/a	n/a	n/a	eliminated, non-industrial stormwater
#006	n/a	n/a	n/a	eliminated, non-industrial stormwater
#007	0.058	0.107	BMPs	stormwater only, 21 acres; pavement, gravel, and vegetated
#008	0.236	0.489	BMPs	stormwater only; 43 acres, pavement and grass
#009	357	663.4	traveling screens with debris wash	intake structure
#010	0	0	settling	UWL leachate collection system
#011	0.144	0.268	settling	UWL contact stormwater; 135 acres, landfill, grass, and gravel; historically also discharges non-contact stormwater, however, new outfalls were added for non-contact stormwater

#CT1	unknown	unknown	reuse/recirculated	non-discharging, not subject to 40 CFR 423.13(d)(1) because there is no discharge and water is reused in the system
#ST1, #LC2, #LC3, #LC4, #CT5	n/a	n/a	BMPs	non-contact stormwater on northern and eastern portion of covered utility waste landfill; this area must maintain appropriate cap and remain closed unless the permit is modified to reconsider the pollutants of concern

BMP = Best Management Practices
n/a = not applicable

GENERATING STATION

Iatan is a steam electrical power generation plant primarily engaged in the generation of electricity for distribution and sale. The power generating portion of the site is located within Township 07S, Range 22E. The power plant consists of two generating units with a gross generation of 8,408,749 megawatt hours (MWhrs) in 2014; Unit 1 generated 3,506,456 MWhrs (about 42 %) and Unit 2 generated 4,902,284 MWhrs (about 58%) of the total. Both units burn a low-sulfur subbituminous coal as the primary fuel and use No. 2 fuel oil with a sulfur content of less than 0.05 percent for startup. Rail car unloading may advance up to 4,000 tons of coal per hour. The coal pile is limited to 36.3 acres by air emission regulations.

Iatan Unit 1 began construction in 1977 and began producing electricity in 1980, Unit 2 was put on-line in 2010 and was constructed with a cooling tower. Unit 1 is a pulverized coal dry-bottom wall-fired boiler. Unit 2 is a supercritical pulverized coal tangentially fired dry-bottom boiler. Unit 2 is designed as a closed-cycle cooling system that obtains make-up water from a single collector well equipped with three pumps. Unit 2 does not obtain cooling water from surface water source waterbody. Therefore, Unit 2 is not subject to the requirements of 40 CFR §122.21(r) or 40 CFR 125 Subpart J.

Both units have selective catalytic reduction (SCR) and ammonia injection for oxides of nitrogen (NO_x) control, and a wet scrubber for SO_2 control is a flue gas desulphurization (FGD) unit (wet scrubber) is installed on both units. All air pollution control systems have no water discharge, therefore the ELG does not apply to these waste streams. Some wastewater is re-used as make-up water for the wet scrubbers.

Outfall #001 contains only once-through cooling water. In the last permit, the facility was granted ten years to evaluate and upgrade (if necessary) current temperature and flow measurement devices, also if necessary, before the final effluent limitations are enforced April 1, 2027. The application indicated 50,030 gpm (about 70 MGD), however, the design flow is 471 MGD, as confirmed in an email dated August 2, 2022.

Outfall #003 is the holding basin outfall. The holding basin contains several different types of wastes; it collects stormwater runoff from the former ash ponds located on the western side of the facility. This outfall operates via a manual screw on a floodgate. Stormwater is influential on the release of the water from this outfall. Wastewater contributions flowing to outfall #003 are: pretreatment blowdown, filter backwash, carbon purifier, reverse osmosis system, emergency reclaim hopper pumps, plant drains, plant washdown, excess fire protection water, steam cycle/sample table, auxiliary boilers, demineralizer, polisher regeneration, water treatment chemical floor drains, coal pile runoff, fuel yard washdown, dust suppression, dumper building, precipitation, stormwater runoff/drains, and farm lease runoff. Discharge from this outfall to waters of the state occurs infrequently and did not occur during the last permit term. During sampling for this permit renewal, the facility chose to dip-sample the holding pond (outfall #003) as they have reported it rarely discharges. According to the discharge monitoring reports, the pond last discharged in June of 2008.

Permitted Feature #009 is the Cooling Water Intake Structure (CWIS) which is the intake structure for waste-heat cooling water for unit 1. The Department added this feature at the 2016 permit renewal because of then promulgated rules based on the Clean Water Act (CWA) § 316(b) which require the facility to determine rates of impingement and entrainment of fish and shellfish at the cooling water intake structure (CWIS) and could be required to enhance and update impingement and entrainment controls. See COOLING WATER INTAKE section in Part III below for details and determinations required by 40 CFR 125 Subpart J. The facility withdraws once-through (single-pass) cooling water into the cooling system for unit 1 from the Missouri River at Mile 411.

UTILITY WASTE LANDFILL

The utility waste landfill is itself regulated by the waste management program (WMP) of the Department of Natural Resources. The utility waste landfill is located within Township 54N, Range 36W. The concern with this portion of the property is surface water runoff and potential leachate discharges. Outfalls #010 and #011 are associated with the UWL. Historically, these outfalls rarely discharge as the associated collected water is used for dust control on the landfill. Fly ash is conveyed pneumatically to a storage silo. Bottom ash is no longer sluiced and is conveyed via a submerged flight conveyor to a stackout area. Fly ash destined for the UWL contains at least 10 percent moisture; bottom ash, at least 20 percent. The facility must strike a balance between wet conditioning of the ash which would cause excessive landfill leachate and dry handling which would be too dry and cause fugitive air emissions.

Outfall #010 is leachate from the utility waste landfill (UWL) and is used for dust control at the landfill. The facility may apply monitoring well purge water on to the open face of the UWL. This permit, as the previous permit, allows discharge from the leachate collection system although outfall #010, does not discharge often, it discharged June 2022.

Outfall #011 is contact stormwater runoff from the open cell of the UWL and discharges about 1-2 times per year. No violations for these outfalls were noted. The final rule for contact stormwater 11/03/2015, 80 FR, Page 67854 noted that EPA received public comments expressing concern that the proposed definition of combustion residual leachate would apply to contaminated stormwater. Although this was not EPA's intention, for the final rule, EPA revised the definition to make it clear that contaminated stormwater does not fall within the final definition of combustion residual leachate. The contact stormwater does not pass through the berm. Leachate is separate and is managed under permitted feature #010.

Outfalls #ST1, #LC2, #LC3, #LC4, and #ST5 are established under the 2023 permit renewal as a non-contact UWL stormwater. The facility noted that separating contact and non-contact flows was appropriate. Managing differing contaminant loads under separate outfalls is better able to show actual loading to receiving streams when they are discharging. Contact stormwater has higher pollutant loading than non-contact stormwater. Neither are regulated under 40 CFR 423. These outfalls are found along the northern crescent of the filled UWL.

DOMESTIC WASTEWATER TREATMENT FACILITY

Outfall #002: The treatment system is a Smith and Loveless Addigest Treatment Plant, Model #12AD20-HC83, extended aeration plant. It comprises a 13,600 gallon flow equalization basin, a 13,600 gallon aeration basin, a clarifier settling basin with an 83 square foot surface area, and a 3,800 gallon sludge holding basin. The system has four blowers: one is used for the equalization basin, two are used for the aeration basin, and the fourth is maintained as a backup. Chlorination and dechlorination is performed by two 20,000 gallon per day Norweco Bio-Dynamic Tablet Feeders (Model LF 3000) and two 1,526 gallon contact tanks.

Permitted Feature #002 is an internal monitoring point from the domestic wastewater treatment facility. The facility is no longer allowed to discharge to waters of the state from the wastewater treatment facility. This water is used internally within the plant as a no discharge system. Because there are no designated “waters of the state” pursuant to 10 CSR 20-7.015, no internal monitoring requirements or limitations are being implemented in the permit.

STORMWATER

Outfalls #007 and #008 are stormwater outfalls and drain the power plant’s paved and gravel areas. These outfalls drain east to Harpst Chute. Outfall #007 drains the gravel substation, parking lot and ditches. Outfall #008 drains the laydown area, cooling tower area, gravel roadways, grassland areas and other stormwater. Neither area has activities which accommodate significant potential for contamination. Both outfalls are placed inside the facility boundary. Outfall area serving #007 is the L-shaped boundary on the top of the image. Outfall area serving #008 is the boundary north of the outfall #008 marker. The cooling towers flow west; the grassy area south of the outfall #008 marker is not considered industrially impacted.

In the permit issued 10/18/1991 outfalls #004, #005, and #006 were established as stormwater outfalls on the western portion of the facility, each eventually drained to the Missouri River. Outfall #004 drained a grassland surrounding outfall #001. Outfall #005 drained to Harpst Chute, an area between the rail lines and the Missouri River. Outfall #006 drained the northern portion of the facility called Wellson Slough between the Missouri River and the rail lines. These outputs were dependent upon rainfall. In June of 1994, the facility asked these three outfalls be removed from the permit as they drain agricultural lands not associated with industrial activities. The outfalls were eliminated in the subsequent permit issued 12/18/1998. After review, the outfalls will not be added back in to the permit.

Outfalls #007 and #008 were referred as outfalls #00A and #00B in the application materials from 1996 and 1997 prior to their establishment in the subsequent permit effective 12/18/1998. Only outfall #007 was retained past 2008. Outfall #007 captures runoff which, prior, was associated with outfall #006. Drainage from this outfall carries stormwater from the electrical switch yard.

Items listed in the facility (or outfall) description, applicable to the operation, maintenance, control, and resultant effluent quality are required to be enumerated in the facility description. The facility description ensures the facility continues to operate the wastewater (or stormwater) controls listed in the permit to preserve and maintain the effluent quality pursuant to 40 CFR 122.21(e). Any planned changes to the facility (which changes the facility or outfall description) are required to be reported to the department pursuant to 40 CFR 122.41(l)(1)(ii). If the facility does not or cannot use all of their disclosed treatment devices, this is considered bypassing pursuant to 40 CFR 122.41(m) in the case of wastewater, and BMP disruption in the case of stormwater.

Stormwater outfalls #007 and #008 are areas of industrial plant spaces where stormwater requirements are necessary for coverage under 10 CSR 20-6.200 and 40 CFR 122.26(b)(14). However, as this facility has large flat areas, stormwater management is better prescribed as BMPs; runoff is slowed by vegetation and BMPs, and lack of grade. Numeric monitoring of pollutants is not necessary (as was found in the last permit), as expectant pollutant loading is low when favorable BMPs are implemented and inspected frequently. A special condition with prescribed minimum BMPs is included in the permit. Reasonable potential of historical limits at these outfalls was reassessed. Limitations contained in the last permit were only for pH (6.5 to 9.0 SU) and aluminum (750 µg/L daily maximum, no monthly average). There is no RP for any pollutant at these outfalls; see aluminum below. Backsliding is allowed per CWA §303(d)(4)(B) – for waters attaining uses and WQBELs where there is no RP.

ALUMINUM IN STORMWATER (#007 & #008)

Preliminary results from a metals study in Harpst Chute and from the stormwater outfalls #007 and #008 shows aluminum is present, but not present in amounts causing RP (see Part III REASONABLE POTENTIAL; and STORMWATER).

However, as the facility has already begun an aluminum study, the special conditions require conclusive evidence. It is difficult to take samples because the areas serving this part of the plant are flat, and rainfall required to cause a discharge event appears to be larger than the state average of 5.5 inches per day. There is a special condition in the permit for this study.

Initial data for stream flow showed that Harpst Chute flow ranges from 0 cfs to 8.41 cfs. Precipitation has not yet been correlated to this data. Outfall #007 and #008 aluminum data are all below the WQS, except for 1 data point at outfall #007, which was above the WQS; 785 µg/L. While this data is above the WQS, the WQBEL, if one was to be established for this stormwater, would be significantly higher based on stream peak flow and the qualifiers under which outfall #007 discharges. Outfall #007 only discharges when there is a significant rainfall event; commiserate with the peak in stream flow in Harpst Chute. Under stormwater flow scenarios, stormwater only flows through the outfalls when the stream is also magnified – the stormwater at the site does not have RP.

FACILITY PERFORMANCE HISTORY & COMMENTS

The electronic discharge monitoring reports were reviewed for the last permit term. A recent inspection was not found for this facility; the last inspection occurred in 2012, therefore there are no new inspection findings to report.

CONTINUING AUTHORITY

Pursuant to 10 CSR 20-6.010(2)(A) and (E), the department has received the appropriate continuing authority authorized signature from the facility. The Missouri Secretary of State continuing authority charter number for this facility is 001371758; this number was verified on August 4, 2022 to be associated with the facility and precisely matches the continuing authority reported by the facility.

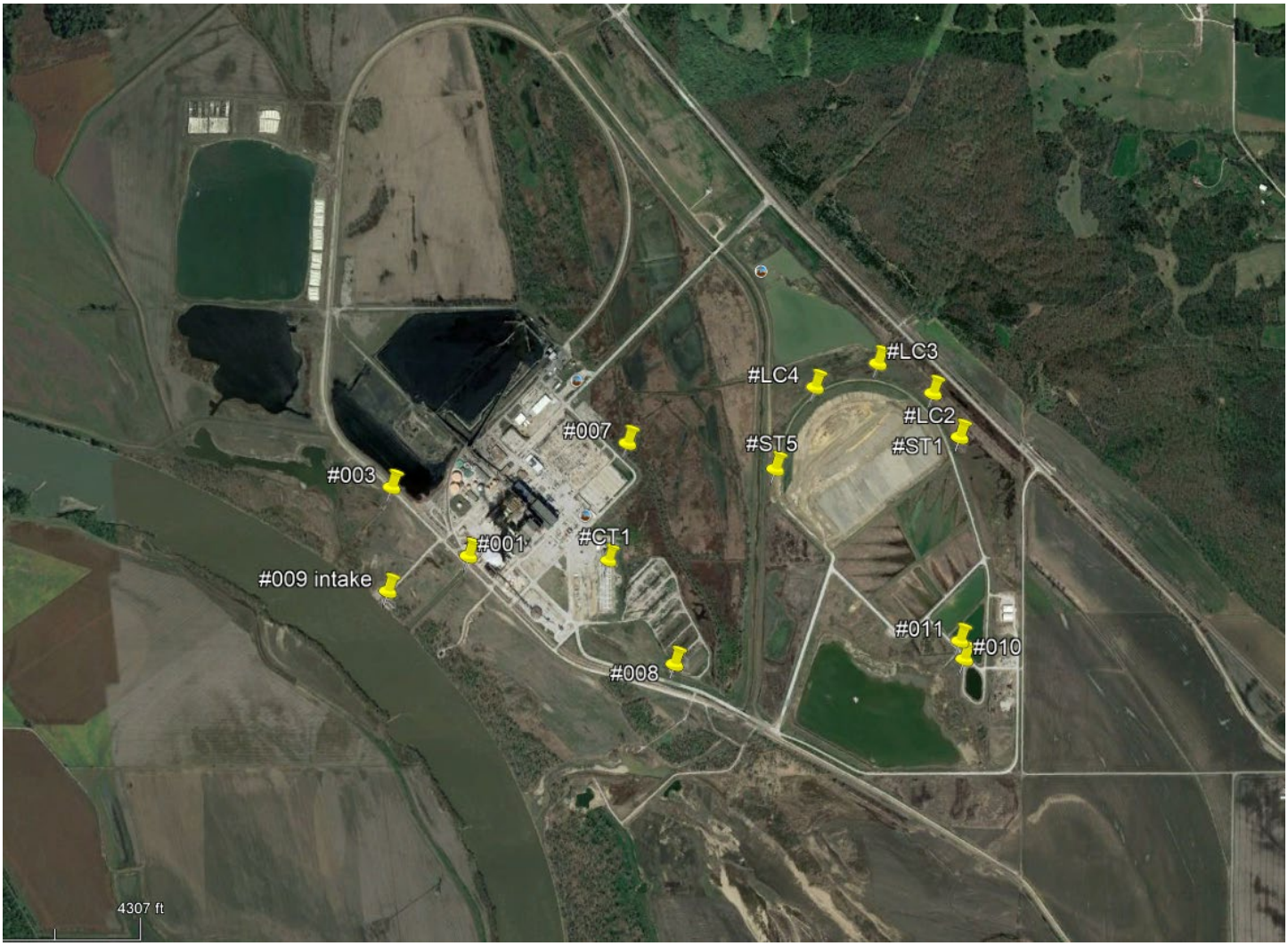
Pursuant to 10 CSR 20-6.010(2)(B)4, this facility is a Level 4 Authority.

- ✓ Pursuant to 10 CSR 20-6.010(2)(D), the facility provided a written statement from the higher level authority on September 9, 2022 declining management of the facility under 10 CSR 20-6.010(2)(C)1.
  - ✓ This provision does not supersede or prohibit any domestic wastewater already routed, or proposed to be routed to the accepting wastewater treatment service. The acceptance of domestic wastewater does not meet the definition of becoming managed by a preferential higher authority.
  - ✓ This provision does not prohibit pretreatment or industrial user negotiation this facility may have with the local accepting wastewater treatment service. An industrial user status is not a change of continuing authority. This facility may be subject to local limits applied by the accepting wastewater treatment facility.

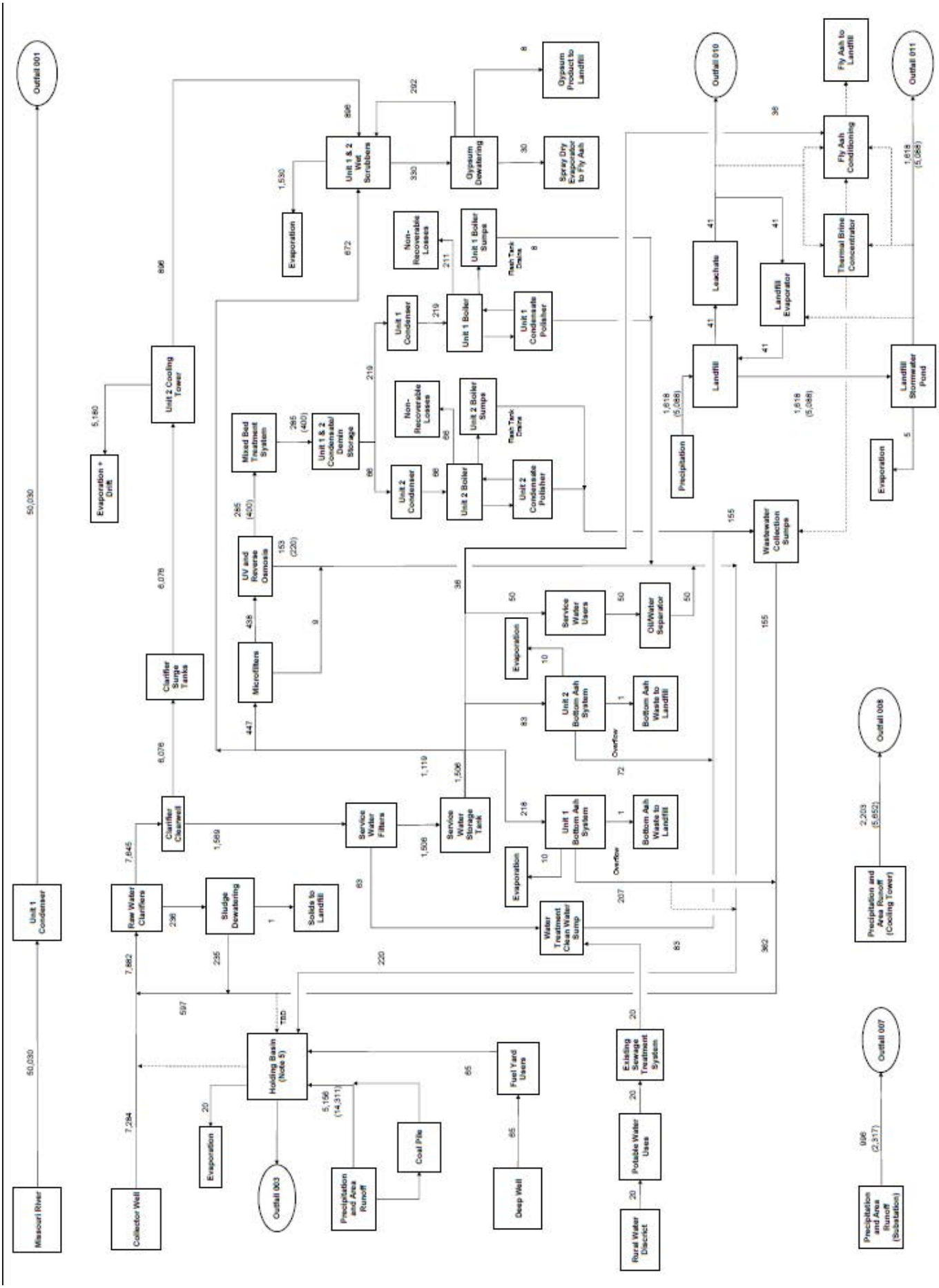
OTHER ENVIRONMENTAL PERMITS

In accordance with 40 CFR 122.21(f)(6), the facility reported other environmental permits currently held by this facility. This facility has the following permits:
Title V Air permit issued 10/1//2014
Solid Waste Disposal Area Operating Permit issued 12/22/2008

FACILITY MAP



WATER BALANCE DIAGRAM



PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO CLASSIFIED SEGMENT	12-DIGIT HUC
#001	Missouri River	P	0226	AQL (WWH), DWS, HHP, IND, IRR, LWW (LWP), SCR, WBC-B	0.00 mi	Mission Creek-Missouri River 10240011-0304
#003	100K Extent Remaining Stream (Locally known as Wellson Slough By-Pass)	C	3960	AQL (WWH), IRR, LWW (LWP), SCR, WBC-B	0.00 mi	
#007 #008 #010 #011	Tributary to Harpst Chute	n/a	n/a	n/a	0.46 mi 0.19 mi 0.95 mi 1.08 mi	
#LC3 #LC4 #ST5	Harpst Chute	P	3573	AQL (WWH), HHP, IRR, LWW (LWP), SCR, WBC-B	0.25 mi 0.12 mi 0.00 mi	
#ST1 #LC2	Eastward to Tributary to 100K Extent-remaining Stream	n/a	n/a	n/a	0.17 mi 0.23 mi	
	100K Extent-Remaining Stream	C	3960	AQL (WWH), HHP, IRR, LWW (LWP), SCR, WBC-B		

Classes are representations of hydrologic flow volume or lake basin size 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: wetlands. 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 Number: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 100K Extent-Remaining Streams 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.

HUC: Hydrologic Unit Code https://water.usgs.gov/GIS/huc.html

Designated Uses:
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-B3 for all habitat designations unless otherwise specified.
10 CSR 20-7.031(1)(C)2: Recreation in and on the water
WBC is 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 included 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, includes aquifers per 10 CSR 20-7.031(6)(A);
LWW – Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection), includes aquifers per 10 CSR 20-7.031(6)(A);
DWS – Drinking Water Supply, includes aquifers per 10 CSR 20-7.031(6)(A);
IND – industrial water supply
10 CSR 20-7.031(1)(C)8 to 11: Wetlands (10 CSR 20-7.031 Tables A1-B3) do 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 20-7.015(7) and 10 CSR 20-7.031(6): **GRW** = Groundwater

Other Applicable Criteria:
10 CSR 20-7.031(4): **GEN** –; GEN may be assigned on a case by case basis if the NHD line is determined to be a water requiring protection by the Watershed Protection Section.
10 CSR 20-7.031(5)(N)6: **NNC** – lake numeric nutrient criteria apply
Water Quality Standards Search https://apps5.mo.gov/mocwis_public/waterQualityStandardsSearch.do

WATERS OF THE STATE DESIGNATIONS

Waters of the state are divided into seven categories per 10 CSR 20-7.015(1)(B)1 through 7. The applicable water of the state category is listed below. Missouri's technology-based effluent regulations are found in [10 CSR 20-7.015] and are implemented in 10 CSR 20-7.015(2) through (8). When implementing technology regulations, considerations are made for the facility type, discharge type, and category of waters of the state. Stormwater discharges and land application sites are not subject to limitations found in 10 CSR 20-7.015. Effluent limitation derivations are discussed in PART IV: EFFLUENTS LIMITS DETERMINATIONS.

- ✓ Missouri or Mississippi River; identified at 10 CSR 20-7.015(2)
- ✓ All other waters; identified at 10 CSR 20-7.015(1)(B)7 and 10 CSR 20-7.015(8)

EXISTING WATER QUALITY & IMPAIRMENTS

The receiving waterbody(s) segment(s), upstream, and downstream confluence water quality was reviewed. The USGS https://waterdata.usgs.gov/nwis/sw or the department's quality data database was reviewed. https://apps5.mo.gov/mocwis_public/wqa/waterbodySearch.do and https://apps5.mo.gov/wqa/ The department's quality data database was reviewed. https://apps5.mo.gov/mocwis_public/wqa/waterbodySearch.do and https://apps5.mo.gov/wqa/ Impaired waterbodies which may be impacted by discharges from this facility were determined. Impairments include waterbodies on the 305(b) or 303(d) list and those waterbodies or watersheds under a TMDL. https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/tmdls 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. https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters 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. 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 for that watershed may be developed. The TMDL shall include the WLA calculation.

MISSOURI RIVER

The Missouri River is a highly used waterbody for both recreation and transportation. However, no concurrent qualitative data for this segment of the river was available for review. The Missouri River is on the impaired waters list for *Escherichia coli*, and has total maximum daily loads associated with chlordane and PCBs. The facility is not likely a contributor of the PCBs, chlordane, or *E. coli* contamination. The limits imposed in this permit are acceptable for this river. Uses of this river are for aquatic life, industrial uses, livestock watering, irrigation, drinking water, and recreational boating and similar contact uses. Only outfall #001 discharges directly to the Missouri River.

- ✓ The Missouri River is associated with the 2006 EPA approved TMDL for Chlordane and PCBs. The TMDL does not assign applicability or numeric limits as both substances are now banned.
- ✓ The Missouri River is listed on the 2020 303(d) list for *E. coli*. This facility is not considered a source of the pollutant or considered to contribute to the impairment.

WELLSON SLOUGH BY-PASS

Wellson Slough By-Pass (named 100K Extent Remaining Stream on the Missouri Use Dataset) is a newly classified water of the state. Class C defines this waterbody as a stream which may cease flow in dry periods but maintains permanent pools which support aquatic life. The uses to be maintained for this waterbody are aquatic life protection, irrigation, livestock watering, and secondary contact recreation. This stream joins the Missouri River just upstream (approximately 0.23 miles) of the facility's outfall #001. The limits imposed in this permit are acceptable for this stream. Only outfall #003 discharges to this stream. No contemporary qualitative data for this stream was available for review. There are no impairments or TMDLs for this stream.

HARPST CHUTE

Harpst Chute is a permanent stream; some maps also call this stream Mission Creek (further downstream); water body ID is 3573. The uses to be maintained for this waterbody are warm water aquatic habitat, irrigation, livestock watering, and recreational secondary contact (such as kayaking, wading, or fishing). Mission Creek connects to the Missouri river approximately 3.3 miles downstream of the facility. However, should overflow occur, drainage through a connector to Harpst Chute (just south of the facility) is likely which is only half a mile downstream from outfall #001. The limits imposed in this permit are acceptable for this stream. Outfalls #007, #008, #010, and #011 discharge to this stream. No contemporary qualitative data for this stream was available for review. There are no impairments or TMDLs for this stream.

100K EXTENT-REMAINING STREAM (EAST OF UWL)

This is a new receiving stream for the facility; the stream is located to the east of the utility waste landfill. This is a C stream, and does not afford mixing. There is no data for this stream. Stream flows will only occur during precipitation events. This stream does not have a readily-identifiable local name.

WATERBODY MIXING CONSIDERATIONS

For wastewater-only outfall(s) identified below, mixing is afforded, see low flow values calculated for the receiving stream below. For information how this regulation is used in determining effluent limits with or without mixing, see WASTELOAD ALLOCATION in Part III. If the base stream flow is above 0.1 cfs, mixing may be applied if 1) zones of passage are present, 2) mixing velocities are sufficient and stream bank configuration allows, 3) the aquatic life support system is maintained, 4) mixing zones do not overlap, 5) there are no drinking water intakes in the vicinity downstream, 6) the stream or lake has available pollutant loading to be allocated, and 7) downstream uses are protected. If mixing was not allowed in this permit, the facility may submit information, such as modeling, as to why mixing may be afforded to the outfall. Mixing Zone [10 CSR 20-7.031(5)(A)4.B.(I)(a)] and Zone of Initial Dilution: [10 CSR 20-7.031(5)(A)4.B.(I)(b)] not allowed at outfalls #002, #003, #007, #008, #010 and #011.

RECEIVING STREAMS LOW-FLOW VALUES

OUTFALL	RECEIVING STREAM (CLASS)	LOW-FLOW VALUES		
		1Q10	7Q10	30Q10
#001	Missouri River (P)	6542 CFS	8275 CFS	12,230 CFS
#003	Wellson Slough By-Pass (C)	0.0 CFS	0.0 CFS	0.0 CFS
#010	Tributary to Harpst Chute (n/a)	0.0 CFS	0.0 CFS	0.0 CFS

Data were obtained from USGS gauging station #06893000 on the Missouri River.
The low flow values were calculated using a department-developed spreadsheet.
Ammonia limits, are calculated using the 30Q10 data. The 7Q10 value is the figure used for all other calculations.

MIXING CONSIDERATIONS TABLE FOR MISSOURI RIVER (CLASS P)

OUTFALL	MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
	1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
#001	n/a	2068.81 CFS	n/a	n/a	206.881 CFS	n/a

ZID cannot be more than 10x the DF.

MIXING CONSIDERATIONS - THERMAL

Missouri's Water Quality Standards [10 CSR 20-7.031(4)(A)1.], specifically state mixing considerations for toxics do not apply to thermal mixing considerations. Thermal mixing considerations are located in [10 CSR 20-7.031(4)(D)6.], which states thermal mixing considerations are limited to 25% of the cross-sectional area or volume of a river, unless a biological survey performed in accordance with 316(a) of the Clean Water Act indicate no significant adverse effect on aquatic life. For the purpose of mixing considerations, the department typically uses the 25% of the daily flow instead of cross-sectional area. See additional information under section "Effluent Limits Determinations" for outfall #001.

RECEIVING STREAM MONITORING REQUIREMENTS

- This permit does not identify where instream monitoring will occur to fulfill the temperature requirements. The Department will work with the permittee to review any proposed monitoring programs should the facility request assistance.
- This permit renewal is requiring monitoring for river temperature and the change in river temperature as it relates to the thermal discharge. To fulfill this condition, the permittee will be required to obtain concurrent representative river temperature and river flow in cubic feet per second.

PART III. RATIONALE AND DERIVATION OF PERMIT CONDITIONS

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).

- ✓ Limitations in this operating permit reissuance conform to the anti-backsliding provisions of CWA §402(o), and 40 CFR 122.44.
  - ✓ This facility has removed all coal ash from unlined impoundments therefore groundwater monitoring requirements were removed from this permit. A letter was received from Evergy April 25, 2022 that summarized all the steps the facility took to remove the ash. Because there is no longer a waste source pursuant to 644.016 (24) or (25) RSMo, no further monitoring is required. The document is publically available on Evergy's webpage at https://www.evergy.com/ccr
  - ✓ The previous permit special conditions contained a specific set of prohibitions related to general criteria (GC) found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality criteria in the previous permit.

This permit assesses each general criteria as listed in the previous permit's special conditions. Federal regulations 40 CFR 122.44(d)(1)(iii) requires instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4)(A) through (I) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality while maintaining permit conditions applicable to facility disclosures and in accordance with 10 CSR 20-7.031(4) where no water contaminant by itself or in combination with other substances shall prevent the water of the state from meeting the GC. This was a non-numeric limitation without RP; RP was assessed for this permit regarding these GC and numeric effluent limits were placed instead of narrative criteria if there was RP. 402(o) does not apply as non-numeric permit conditions are not subject to backsliding provisions.

- ✓ Outfall #007 and #008 removed limits for pH and future limits for aluminum. Neither parameter has RP. These parameters were removed under the §303(d)(4)(B) backsliding exception for attained waters. Additionally, numeric benchmarks were removed in favor of a stormwatershed management plan. The stormwatershed management plan, when followed, provides similar or better resultant stormwater effluent than numeric benchmarks. Stormwatershed management occurs at a prescribed frequency and more often as necessary; a special condition was added for prescribed BMPs. See STORMWATER PERMITTING: LIMITATIONS, BENCHMARKS, AND BEST MANAGEMENT PRACTICES for more information. For stormwater provisions, the law is clear that prescribed best management practices (BMPs) can be measures of compliance with both technology and water quality requirements. 40 CFR 122.44(k) specifically allows BMPs in place of numeric requirements; although sometimes a numeric benchmark is utilized in the place of specific BMPs. A numeric benchmark is not a limit, but instead a target. If either path (BMP or benchmark) of compliance is chosen for the permit, first the discharge cannot have reasonable potential; a positive RP determination for stormwater is not completed in the same manner as wastewater, and there is no RP for any parameter for these stormwater discharges. Additionally, the 2021 MSGP identifies an aluminum benchmark of 1,100 µg/L as appropriate for several sectors, including clay mining. As we expect the aluminum is originating from clay sources, the limit could be changed to a benchmark of 1,100 µg/L if necessary; but it is not necessary in this instance because of the BMPs installed.
- ✓ The following conditions were removed or revised, but are not subject to antibackslide because the reissuance of a permit without these conditions is not considered backsliding. These permit conditions were unenforceable.
  - The previous permit special condition indicated spills from hazardous waste substances must be reported to the department. However, this condition is covered under standard conditions therefore was removed from special conditions.
  - The previous permit special condition stated: "Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 et. seq.) and the use of such pesticides shall be in a manner consistent with its label."
    This special condition was outside the scope of NPDES permitting and was removed.
  - This statement was removed: 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. If a discharge does not occur within the reporting period, report as no discharge. The total amount of precipitation should be noted from the event from which the samples were collected.

ANTIDEGRADATION REVIEW

Wastewater 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. The facility must pay for the department to complete the review. 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 https://dnr.mo.gov/document-search/antidegradation-implementation-procedure Per [10 CSR 20-7.015(4)(A)], new discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream, or connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

- ✓ Not applicable even though flows expanded. According to the Water Quality Review Sheet from March 6, 2009, the facility is not subject to an antidegradation review because the requester submitted a complete construction permit prior to August 30, 2008. Outfall #002 flow was expanded from 0.006 MGD to 0.012 MGD. Additionally, the facility is no longer using outfall #002.

BEST MANAGEMENT PRACTICES

Minimum site-wide best management practices are established in this permit to ensure all facilities are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies.

While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these best management practices are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum best management practices are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state, therefore pollutants cannot be released unless in accordance with 644.011 and 644.016 (17) RSMo.

CHLORINE AND BROMINE

Facilities may utilize both chlorine and bromine for cooling tower disinfection. Both contaminants 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 specificity, 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 actively as 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 residual 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. This best professional judgment determination is supported by 40 CFR 423.11(a).

CLOSURE

To properly decontaminate and close a wastewater basin, the facility must draft a complete closure plan, and include the Closure Request Form #2512 https://dnr.mo.gov/document-search/facility-closure-request-form-mo-780-2512 The publication, Wastewater Treatment Plant Closure - PUB2568 found at https://dnr.mo.gov/print/document-search/pub2568 may be helpful to develop the closure plan. The regional office will then approve the closure plan, and provide authorization to begin the work. The regional office contact information can be found here: https://dnr.mo.gov/about-us/division-environmental-quality/regional-office

COAL ASH AND HISTORICAL ASH PONDS

Evergy chose to remove all ash from the historical ash ponds, and submitted a letter of closure to the department on April 25, 2022. It is estimated that approximately 1.7 million cubic yards of material were stored in the impoundment prior to commencing closure construction. Loose sediment is hydraulically dredged from the impoundment and sent to geotextile tubes for dewatering. The tubes sit for a period of time as dictated by weather conditions and other contractor activities, then the tubes are broken up so that the material can be loaded onto haul trucks and placed in the on-site CCR landfill or used beneficially. Hardened CCR material from the north portion of the Ash Impoundment is mechanically excavated and hauled to the on-site CCR landfill unless used beneficially. CCR removal progress was confirmed by comparing bathymetric surveys to the estimated impoundment bottom surface, which was updated to reflect the results of field investigation efforts. The facility has completed some groundwater monitoring for the area, however, no further monitoring of the groundwater is required by the department, see Part III ANTIBACKSLIDING, above for more information. Because there is no longer a waste source pursuant to 644.016 (24) or (25) RSMo, no further monitoring is required.

This facility has indicated they were subject to the self-implementing regulations of 40 CFR 257 Subpart D. Missouri has not established a state coal ash program nor is Missouri required to establish any such program. As such, 40 CFR 257 Subpart D (the "coal ash rule") is not managed by Missouri. The federal coal ash regulations are self-implementing. A self-implementing regulation completely applies to all applicable facilities without the need for a permit or other type of initiating document to establish specified conditions. A self-implementing regulation requires facilities to follow the rules and self-manage all documents, reporting, and compliance requirements, if they are subject. Missouri's Water Protection Program does not and legally cannot determine regulatory applicability or compliance with any facility's operations under 40 CFR 257 Subpart D.

COST ANALYSIS FOR COMPLIANCE (CAFCOM)

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

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

CHANGES IN DISCHARGES OF TOXIC POLLUTANT

This special condition reiterates the federal rules found in 40 CFR 122.44(f) for technology treatments and 122.42(a)(1) for all other toxic substances. In these rules, the facility is required to report changes in amounts of toxic substances discharged.

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

COMPLIANCE AND ENFORCEMENT
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.
✓ Not applicable; the facility is not currently under Water Protection Program enforcement action.

COOLING WATER INTAKE STRUCTURE (#009): APPLICATION OBLIGATIONS FOR 316(b): 40 CFR 122.21(r) REQUIREMENTS.
The department is required by regulation to ensure that all parts of 40 CFR 122.21(r) requirements are submitted as part of the application. The department is required to receive a complete application prior to permit issuance pursuant to 40 CFR 122.21(e). The following is a list of the general and specific requirements of the (r) regulations, and where the items are found in the application documents. For items supplied via email, the date of the email and any other pertinent details are disclosed.

40 CFR 122.21(r) - APPLICATION REQUIREMENTS FOR FACILITIES WITH COOLING WATER INTAKE STRUCTURES (CWIS):
The facility submitted a series of documents on September 29, 2021, which include responsive documents labeled (r)(2) through (r)(13) including a summary, and additional appendices and diagrams. These documents were logged into the permit application record on September 30, 2021, and sent to the US Fish and Wildlife Service "Service(s)", Missouri Department of Conservation, and the Environmental Protection Agency (EPA); pursuant to 40 CFR 125 Subpart J, on December 9, 2021. One response was received. The Services replied on February 9, 2022.

(r)(1): Applicability
(r)(1) is the applicability statement, Evergy was not required to submit any information under this section. The previous permit indicated the sections to which the facility was subject. No additional sections were deemed necessary at the time of this permit's renewal.

(r)(2): Source Water Physical Data
(i) A narrative description and scaled drawings showing the physical configuration of all source water bodies used by your facility, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports your determination of the water body type where each cooling water intake structure is located;
Submission for (2)(2)(i): The facility withdraws from a riverine system. Unit 1 cooling water discharges back into the Missouri River approximately 350 ft downstream of the intake via a discharge canal. The canal is approximately 1,000 ft long from the plant thermal outfall point to river re-entry point. Water quality characteristics are disclosed in Section 4.

(ii) Identification and characterization of the source waterbody's hydrological and geomorphological features, as well as the methods you used to conduct any physical studies to determine your intake's area of influence (AOI) within the waterbody and the results of such studies;
Submission for (r)(2)(ii) was found in sections 2, 3, and 4 of (r)(2). A physical AOI study is not required by the regulation's verbiage, therefore Evergy did not complete a physical AOI. A design AOI was completed for impingement and shown in section 3.4; this showed that the impingement 0.5 fps AOI was 31 feet from the CWIS opening, as an arc, and motile aquatic species could escape the horizontal influence if found outside of the AOI arc.

(iii) Locational maps; and
Submission for (r)(2)(iii) were found in the (r)(2) document and deemed adequate.

(iv) For new offshore oil and gas facilities that are not fixed facilities, a narrative description and/or locational maps providing information on predicted locations within the waterbody during the permit term in sufficient detail for the Director to determine the appropriateness of additional impingement requirements under § 125.134(b)(4).
Submission not required; this is not an offshore oil and gas facility.

Determination for (r)(2): the riverine system was classified and characterized appropriately and described sufficiently to provide adequate decision points regarding the cooling water intake structure at the Iatan facility.

(r)(3) Cooling Water Intake Structure Data
(i) A narrative description of the configuration of each of your cooling water intake structures and where it is located in the water body and in the water column;
Submission for (r)(3)(i) is in sections 2.1 of (r)(3).

(ii) Latitude and longitude in degrees, minutes, and seconds for each of your cooling water intake structures;
Submission for (r)(3)(ii) is found in section 2.2 of document (r)(3).

(iii) A narrative description of the operation of each of your cooling water intake structures, including design intake flows, daily hours of operation, number of days of the year in operation and seasonal changes, if applicable;
Submission (r)(3)(iii) is found in section 2.3 of document (r)(3).

(iv) A flow distribution and water balance diagram that includes all sources of water to the facility, recirculating flows, and discharges; and
Submission for (r)(3)(iv) is found in section 2.4 of document (r)(3).

(v) Engineering drawings of the cooling water intake structure.
Submission (r)(3)(v) was submitted to the department in the application packet on September 29, 2021, and in Appendix B of document (r)(3). Photos representative of the intake are found in Appendix A of document (r)(3).

(r)(4) Source water baseline biological characterization data
This information is required to characterize the biological community in the vicinity of the cooling water intake structure and to characterize the operation of the cooling water intake structures. The Director may also use this information in subsequent permit renewal proceedings to determine if your Design and Construction Technology Plan as required in § 125.86(b)(4) or § 125.136(b)(3) of this chapter should be revised. This supporting information must include existing data (if they are available). However, you may supplement the data using newly conducted field studies if you choose to do so. The information you submit must include:
(i) A list of the data in paragraphs (r)(4)(ii) through (vi) of this section that are not available and efforts made to identify sources of the data;
Submission for (r)(4)(i) was not required – Evergy supplied the information necessary to determine the baseline biological characterization of the Missouri River.

The data supplied was based on the following studies. The supporting documents also included numerous citations and references. The Pallid Sturgeon Population Assessment Project (PSPAP) is an ongoing, collaborative monitoring program within the Missouri River overseen by the U.S. Army Corps of Engineers (USACE) that was initiated in 2003 under the Missouri River Recovery Program (MRRP) and includes members representing state and federal agencies as well as university researchers. The Benthic Fishes Study (BFS) was a multiyear, largescale survey of fish populations within the Missouri River conducted by a group of state and federal agencies and research organizations with the goal of evaluating changes in the fish community to assist the USACE in managing the Missouri River system. The Lisbon Bottom Unit, which encompasses a portion of the floodplain adjacent to the lower Missouri River along RM 213 – 219, is part of the Big Muddy National Fish and Wildlife Refuge that was established in 1994 after the Great Flood of 1993 destroyed levee networks and damaged agricultural lands in the region. It consists of 2,013 total acres along a large bend in the river and includes the main channel and a connection known as the Lisbon Chute that was created when the 1993 flood breached agricultural levees. The Columbia Fisheries Resources Office of the U.S. Fish and Wildlife Service (USFWS) conducted a fisheries survey of the area in 1997 as part of an interdisciplinary effort to establish baseline data on the physical setting and biota present in the Lisbon Bottom Unit.

(ii) A list of species (or relevant taxa) for all life stages and their relative abundance in the vicinity of the cooling water intake structure;
Submission for (r)(4)(ii) is found in section 5 of (r)(4). Tables 5-1 and 5-2 are numeric summaries of the number and percent (relative) abundance for the PSPAP and BFS studies, respectively. For shellfish, section 6. The methods and additional information is found in Section 7.

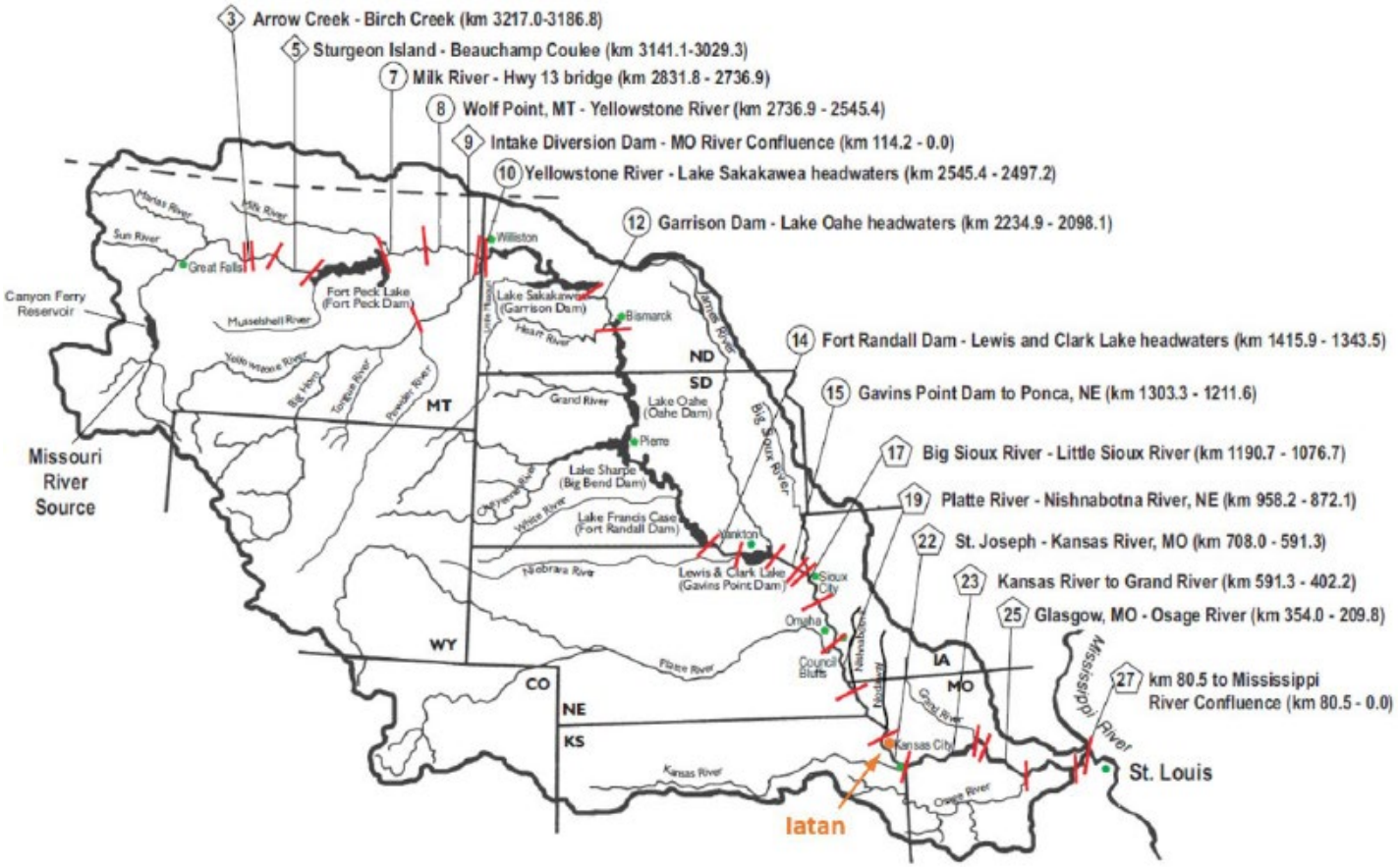
(iii) Identification of the species and life stages that would be most susceptible to impingement and entrainment. Species evaluated should include the forage base as well as those most important in terms of significance to commercial and recreational fisheries;
Submission for (r)(4)(iii) is in section 7.2 for impingement and 7.3 for entrainment of (r)(4).

(iv) Identification and evaluation of the primary period of reproduction, larval recruitment, and period of peak abundance for relevant taxa;
Submission for (r)(4)(iv) is in section 7 of (r)(4).

Requirement (r)(4)(v) Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure;

Submission for (r)(4)(iv) is in section 7 of (r)(4).

(vi) Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at your cooling water intake structures;
Submission for (r)(4)(iv) is in section 7 of (r)(4).



A total of 910 federally-endangered pallid sturgeon were collected from Segment 9 of the PSPAP during recent sampling (2015 – 2017) with 189 fishes captured in standard gears and the remaining 721 fishes captured in non-standardized gears or ancillary sampling activities. Nearly all were collected upstream of Iatan in reaches located above Geary Bends at RM 435.2, which reflected regions that were targeted for broodstock collection by the Nebraska Game and Parks Commission (NGPC) and Missouri Department of Conservation (MDC). A maximum of 14 percent of the pallid sturgeon collected during standard sampling (n=27 fishes) were captured between RM 367.5 and RM 435.2, a reach that represents nearly the lower third of Segment 9. Thus, abundance of pallid sturgeon in the vicinity of Iatan likely is low in comparison to upstream reaches of the river surveyed as part of Segment 9 of the PSPAP.

Two federal-listed species were collected during recent fish surveys of the lower Missouri River, including the endangered pallid sturgeon (USFWS 1990) and the shovelnose sturgeon, which is listed as a threatened species (due to similarity of appearance) (USFWS 2010). Pallid sturgeon, which is also a Missouri-listed and Kansas-listed endangered (MONHP ranking S1) species, was primarily collected during sampling for the PSPAP, which was designed to estimate the population size, structure, and distribution of the species. Its relative abundance has not markedly increased despite more than two decades of stocking efforts and none have been identified during any recent or past impingement collections made at the Iatan CWIS. The shovelnose sturgeon is numerous in the river and it continues to be fished recreationally. Fourteen pallid sturgeon × shovelnose sturgeon hybrids also were collected, however no first generation (F1) hybrids have ever been collected in Segment 9 based on genetic testing and these fishes likely represent past generational backcrosses.

Two Missouri state-listed endangered lake sturgeon, which have an MONHP ranking of S1, (MDC 2018) were also collected from Segment 9 of the PSPAP during 2015 – 2017 (Table 7-1), whereas additional Kansas state-listed species (KDWPT 2018) included silver chub (n=1,207 fish) and sicklefin chub (n=215 fish), which are listed as endangered, and shoal chub (n=509 fish), plains minnow (n=135 fish), and sturgeon chub (n=83 fish), which are listed as threatened. In addition, the sicklefin and sturgeon chub are currently under review by the USFWS for protection under the Endangered Species Act (USFWS 2017).

Plains minnow and sturgeon chub also have MONHP rankings of S2 and S3 (MDC 2018), respectively. Lake sturgeon, blue sucker (n=1,403), river shiner (n=753 fish), spotfin shiner (n=31 fish), Johnny darter (n=2 fish), and river redhorse (n=1 fish) are listed as SINC in the state of Kansas (KDWPT 2018). Despite their apparent abundance in the river, none of these species were collected in great numbers at the Iatan CWIS during 2006 – 2007 impingement monitoring with the most numerous collected being silver chub (n=30 fish).

One Missouri and Kansas-listed endangered flathead chub, which have an MONHP ranking of S1, was collected during 2006 – 2007 impingement monitoring at Iatan. The Kansas state-listed threatened western silvery minnow (MONHP ranking S2), MONHP ranked highfin carpsucker (S2 and Kansas SINC), Alabama shad (S2), ghost shiner (S2), brassy minnow (S3 and Kansas SINC), American eel (SU), skipjack herring (SU), and Kansas SINC bigeye shiner, chestnut lamprey, common shiner, gravel chub, silverband shiner, and tadpole madtom have been collected in the lower Missouri River during past surveys.

One dead specimen of scaleshell (MONHP ranking S1) was the only federal-listed and Missouri state-listed endangered freshwater mussel species collected during surveys of the lower Missouri River. Kansas state-listed species included the endangered rock pocketbook (MONHP ranking S3) and the threatened flat floater (MONHP ranking S2). Hickorynut, which has an MONHP ranking of S3, and Kansas SINC, fatmucket, yellow sandshell, creeper, and fawnsfoot also were collected.

Simply because these species were identified as existing in the Missouri River, does not mean that Iatan has entrained these species or caused take of an endangered species. The purpose of the study was to identify the endangered or threatened species composition of the river and not all species occur near Iatan. The ecology of the Missouri River is diverse, and these studies covered much more of the river than the area adjacent to the facility.

(vii) Documentation of any public participation or consultation with Federal or State agencies undertaken in development of the plan; Submission for (r)(4)(iv) is in section 3 of (r)(4).

(viii) If you supplement the information requested in paragraph (r)(4)(i) of this section with data collected using field studies, supporting documentation for the Source Water Baseline Biological Characterization must include a description of all methods and quality assurance procedures for sampling, and data analysis including a description of the study area; taxonomic identification of sampled and evaluated biological assemblages (including all life stages of fish and shellfish); and sampling and data analysis methods. The sampling and/or data analysis methods you use must be appropriate for a quantitative survey and based on consideration of methods used in other biological studies performed within the same source water body. The study area should include, at a minimum, the area of influence of the cooling water intake structure.
Submission for (r)(4)(viii) is found in document (r)(4), although the facility did not perform any studies specific to Iatan.

(ix) In the case of the owner or operator of an existing facility or new unit at an existing facility, the Source Water Baseline Biological Characterization Data is the information in paragraphs (r)(4)(i) through (xii) of this section.
This is a definition, no submission for (r)(4)(ix) is required.

(x) For the owner or operator of an existing facility, identification of protective measures and stabilization activities that have been implemented, and a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
Submission for (r)(4)(x) is in (r)(4) section 4. No stabilization activities have occurred.

(xi) For the owner or operator of an existing facility, a list of fragile species, as defined at 40 CFR 125.92(m), at the facility. The applicant need only identify those species not already identified as fragile at 40 CFR 125.92(m). New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.
Submission for (r)(4)(xi) is found in (r)(4) section 7.1.6; the facility found only one species, gizzard shad.

(xii) For the owner or operator of an existing facility that has obtained incidental take exemption or authorization for its cooling water intake structure(s) from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, any information submitted in order to obtain that exemption or authorization may be used to satisfy the permit application information requirement of paragraph 40 CFR 125.95(f) if included in the application.
Submission for (r)(4)(xii): on September 20, 2022, the facility emailed that they will not be seeking an incidental take exemption in regards to 40 CFR 122.21(r)(4)(xii).

(r)(5) Cooling Water System Data
The owner or operator of an existing facility must submit the following information for each cooling water intake structure used or intended to be used:

(i) A narrative description of the operation of the cooling water system and its relationship to cooling water intake structures; the proportion of the design intake flow that is used in the system; the number of days of the year the cooling water system is in operation and seasonal changes in the operation of the system, if applicable; the proportion of design intake flow for contact cooling, non-contact cooling, and process uses; a distribution of water reuse to include cooling water reused as process water, process water reused for cooling, and the use of gray water for cooling; a description of reductions in total water withdrawals including cooling water intake flow reductions already achieved through minimized process water withdrawals; a description of any cooling water that is used in a manufacturing process either before or after it is used for cooling, including other recycled process water flows; the proportion of the source waterbody withdrawn (on a monthly basis);
Submission for (r)(5)(i) is found throughout the document; the facility withdraws up to 3.0 percent of the Missouri River; the average was 1.39 percent. The traveling screen wash water is approximately 5.2 MGD; this is about 1% of the total intake flow.

(ii) Design and engineering calculations prepared by a qualified professional and supporting data to support the description required by paragraph (r)(5)(i) of this section; and
On September 20, 2022, the facility responded via email that Appendix B (engineering drawing) of the r(5) report has the Evergy CAD engineers name. The r(5) report was prepared by a professional engineer (Missouri, No. 2007020287) with Wood who has a BS in Civil Engineering for the University of Missouri. CWIS intake volume (flow) was calculated using the pump data for the Iatan intake pumps multiplied by each pumps rated capacity during the period of record between January 1, 2013 to June 30, 2018. Pump capacities are discussed in Section 2.1 of the r(5) report with pump data shown in Figure 2-3.

(iii) Description of existing impingement and entrainment technologies or operational measures and a summary of their performance, including but not limited to reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.
Submission for (r)(5)(iii) is in section 2.3; there are no impingement or entrainment controls for unit 1.

(r)(6) Chosen Method(s) of Compliance with Impingement Mortality Standard
The owner or operator of the facility must identify the chosen compliance method for the entire facility; alternatively, the applicant must identify the chosen compliance method for each cooling water intake structure at its facility. The applicant must identify any intake structure for which a BTA determination for Impingement Mortality under 40 CFR 125.94 (c)(11) or (12) is requested. In addition, the owner or operator that chooses to comply via 40 CFR 125.94 (c)(5) or (6) must also submit an impingement technology performance optimization study as described below:
(i) If the applicant chooses to comply with 40 CFR 125.94(c)(5), subject to the flexibility for timing provided in 40 CFR 125.95(a)(2), the impingement technology performance optimization study must include two years of biological data collection measuring the reduction in impingement mortality achieved by the modified traveling screens as defined at 40 CFR 125.92(s) and demonstrating that the operation has been optimized to minimize impingement mortality. A complete description of the modified traveling screens and associated equipment must be included, including, for example, type of mesh, mesh slot size, pressure sprays and fish return mechanisms. A description of any biological data collection and data collection approach used in measuring impingement mortality must be included:

(A) Collecting data no less frequently than monthly. The Director may establish more frequent data collection;
(B) Biological data collection representative of the impingement and the impingement mortality at the intakes subject to this provision;
(C) A taxonomic identification to the lowest taxon possible of all organisms collected;
(D) The method in which naturally moribund organisms are identified and taken into account;
(E) The method in which mortality due to holding times is taken into account;
(F) If the facility entraps fish or shellfish, a count of entrapment, as defined at 40 CFR 125.92(j), as impingement mortality; and
(G) The percent impingement mortality reflecting optimized operation of the modified traveling screen and all supporting calculations.

Submission for (r)(6)(i). Evergy has chosen Compliance Alternative 5 (40 CFR 125.94(c)(5))– *Modified Traveling Screens* for impingement mortality compliance for Unit 1 at Iatan. Under this alternative, compliance would be met by upgrading the existing traveling water screens to be 3/8 inch mesh (or finer) modified-traveling water screens with a fish friendly return system.

The Department is required to ensure the screens are operating so that non-fragile impinged aquatic organisms are returned to the water safely. After the screens are installed, the facility must demonstrate the technology is or will be optimized to minimize impingement mortality of all non-fragile species the facility will submit the optimization study due at the next renewal, see special conditions.

(ii) If the applicant chooses to comply with 40 CFR 125.94(c)(6), the impingement technology performance optimization study must include biological data measuring the reduction in impingement mortality achieved by operation of the system of technologies, operational measures and best management practices, and demonstrating that operation of the system has been optimized to minimize impingement mortality. This system of technologies, operational measures and best management practices may include flow reductions, seasonal operation, unit closure, credit for intake location, and behavioral deterrent systems.

The applicant must document how each system element contributes to the system's performance. The applicant must include a minimum of two years of biological data measuring the reduction in impingement mortality achieved by the system. The applicant must also include a description of any sampling or data collection approach used in measuring the rate of impingement, impingement mortality, or flow reductions.

(A) Rate of Impingement. If the demonstration relies in part on a credit for reductions in the rate of impingement in the system, the applicant must provide an estimate of those reductions to be used as credit towards reducing impingement mortality, and any relevant supporting documentation, including previously collected biological data, performance reviews, and previously conducted performance studies not already submitted to the Director. The submission of studies more than 10 years old must include an explanation of why the data are still relevant and representative of conditions at the facility and explain how the data should be interpreted using the definitions of impingement and entrapment at 40 CFR 125.92(n) and (j), respectively. The estimated reductions in rate of impingement must be based on a comparison of the system to a once-through cooling system with a traveling screen whose point of withdrawal from the surface water source is located at the shoreline of the source waterbody. For impoundments that are waters of the United States in whole or in part, the facility's rate of impingement must be measured at a location within the cooling water intake system that the Director deems appropriate. In addition, the applicant must include two years of biological data collection demonstrating the rate of impingement resulting from the system. For this demonstration, the applicant must collect data no less frequently than monthly. The Director may establish more frequent data collection.

(B) Impingement Mortality. If the demonstration relies in part on a credit for reductions in impingement mortality already obtained at the facility, the applicant must include two years of biological data collection demonstrating the level of impingement mortality the system is capable of achieving. The applicant must submit any relevant supporting documentation, including previously collected biological data, performance reviews, and previously conducted performance studies not already submitted to the Director. The applicant must provide a description of any sampling or data collection approach used in measuring impingement mortality. In addition, for this demonstration the applicant must:

(1) Collect data no less frequently than monthly. The Director may establish more frequent data collection;

(2) Conduct biological data collection that is representative of the impingement and the impingement mortality at an intake subject to this provision. In addition, the applicant must describe how the location of the cooling water intake structure in the waterbody and the water column are accounted for in the points of data collection;

(3) Include a taxonomic identification to the lowest taxon possible of all organisms to be collected;

(4) Describe the method in which naturally moribund organisms are identified and taken into account;

(5) Describe the method in which mortality due to holding times is taken into account; and

(6) If the facility entraps fish or shellfish, a count of the entrapment, as defined at 40 CFR 125.92(j), as impingement mortality.

(C) Flow reduction. If the demonstration relies in part on flow reduction to reduce impingement, the applicant must include two years of intake flows, measured daily, as part of the demonstration, and describe the extent to which flow reductions are seasonal or intermittent. The applicant must document how the flow reduction results in reduced impingement. In addition, the applicant must describe how the reduction in impingement has reduced impingement mortality.

(D) Total system performance. The applicant must document the percent impingement mortality reflecting optimized operation of the total system of technologies, operational measures, and best management practices and all supporting calculations. The total system performance is the combination of the impingement mortality performance reflected in paragraphs (r)(6)(ii)(A), (B), and (C) of this section.

Response: the facility did not select this entrainment control.

(r)(7) Entrainment Performance Studies

The owner or operator of an existing facility must submit any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies. Any such submittals must include a description of each study, together with underlying data, and a summary of any conclusions or results. Any studies conducted at other locations must include an explanation as to why the data from other locations are relevant and representative of conditions at your facility. In the case of studies more than 10 years old, the applicant must explain why the data are still relevant and representative of conditions at the facility and explain how the data should be interpreted using the definition of entrainment at 40 CFR 125.92(h).

Submission for (r)(7) is found in section 2 of document (r)(7). As there are no entrainment controls at this facility, no entrainment performance studies need to be completed. However, the 2018-2019 entrainment study was completed for (r)(9).

(r)(8) Operational Status

The owner or operator of an existing facility must submit a description of the operational status of each generating, production, or process unit that uses cooling water, including but not limited to:

(i) For power production or steam generation, descriptions of individual unit operating status including age of each unit, capacity utilization rate (or equivalent) for the previous 5 years, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, including identification of any operating unit with a capacity utilization rate of less than 8 percent averaged over a 24-month block contiguous period, and any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes to fuel type;

Submission (r)(8)(i) is found in section 2 of (r)(8) This facility is not a facility with a capacity utilization rate of less than 8%.

(ii) Descriptions of completed, approved, or scheduled uprates and Nuclear Regulatory Commission relicensing status of each unit at nuclear facilities;
This is not a nuclear facility; this section is not required.

(iii) For process units at your facility that use cooling water other than for power production or steam generation, if you intend to use reductions in flow or changes in operations to meet the requirements of 40 CFR 125.94(c), descriptions of individual production processes and product lines, operating status including age of each line, seasonal operation, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, any major upgrades completed within the last 15 years, and plans or schedules for decommissioning or replacement of process units or production processes and product lines;
Not applicable.

(iv) For all manufacturing facilities, descriptions of current and future production schedules; and
Not applicable.

(v) Descriptions of plans or schedules for any new units planned within the next 5 years.
Submission (r)(8)(v): the document indicates there are no new units planned for Iatan.

(r)(9) Entrainment Characterization Study
The owner or operator of an existing facility that withdraws greater than 125 MGD AIF, where the withdrawal of cooling water is measured at a location within the cooling water intake structure that the Director deems appropriate, must develop for submission to the Director an Entrainment Characterization Study that includes a minimum of two years of entrainment data collection. The Entrainment Characterization Study must include the following components:

(i) Entrainment Data Collection Method. The study should identify and document the data collection period and frequency. The study should identify and document organisms collected to the lowest taxon possible of all life stages of fish and shellfish that are in the vicinity of the cooling water intake structure(s) and are susceptible to entrainment, including any organisms identified by the Director, and any species protected under Federal, State, or Tribal law, including threatened or endangered species with a habitat range that includes waters in the vicinity of the cooling water intake structure. Biological data collection must be representative of the entrainment at the intakes subject to this provision. The owner or operator of the facility must identify and document how the location of the cooling water intake structure in the waterbody and the water column are accounted for by the data collection locations;
Submission (r)(9)(i) is found in document (r)(9) section 2.

(ii) Biological Entrainment Characterization. Characterization of all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal law (including threatened or endangered species), including a description of their abundance and their temporal and spatial characteristics in the vicinity of the cooling water intake structure(s), based on sufficient data to characterize annual, seasonal, and diel variations in entrainment, including but not limited to variations related to climate and weather differences, spawning, feeding, and water column migration. This characterization may include historical data that are representative of the current operation of the facility and of biological conditions at the site. Identification of all life stages of fish and shellfish must include identification of any surrogate species used, and identification of data representing both motile and non-motile life-stages of organisms;
Submission (r)(9)(ii) is found in document (r)(9) sections 2 and 3, and supporting images, tables, and appendices.

Carp are the most abundant fish in the Missouri River. The abundance of invasive species (e.g., Asian carp) has become greater than that of native species throughout much of the lower Missouri River. This is due, in part, to their life history characteristics, including high fecundity, protracted spawning, rapid growth, and early maturation, and to their wide tolerance of environmental conditions. This relatively recent proliferation of Asian carp in the Missouri River has caused a shift in the ichthyoplankton community, as observed in the current entrainment study at Iatan Generating Station. For example, entrainment samples collected in 2018 and 2019 at Iatan Generating Station were dominated by Asian carp eggs, larvae and juveniles which comprised between 94.7 and 46.3 percent of the total catch, respectively. This represents a dynamic shift in the ichthyoplankton community, with invasive Asian carp species now representing a significant component of the community. Excluding Asian carp, six taxa including common carp, carpsucker and buffalofish, sunfish, minnows, shad, and freshwater drum accounted for the majority of the remaining estimated entrainment, though the relative abundances of these taxa varied among study years.

Species targeted by recreational fishermen on the Missouri River near the Iatan Generating Station include catfish (i.e., blue catfish, channel catfish and flathead catfish), white bass, walleye and sauger, largemouth bass and other sunfish including crappie. Collectively these recreational species represented between 2 and 13.5 percent of the annual estimated entrainment in 2018 and 2019, respectively, with lower valued sunfish (*Lepomis* spp.) comprising most of the individuals entrained. No federal or state listed species potentially occurring in the Missouri River near Iatan Generating Station were collected in entrainment samples during 2018 and 2019.

(iii) Analysis and Supporting Documentation. Documentation of the current entrainment of all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal law (including threatened or endangered species). The documentation may include historical data that are representative of the current operation of the facility and of biological conditions at the site. Entrainment data to support the facility's calculations must be collected during periods of representative operational flows for the cooling water intake structure, and the flows associated with the data collection must be documented. The method used to determine latent mortality along with data for specific organism mortality or survival that is applied to other life-stages or species must be identified. The owner or operator of the facility must identify and document all assumptions and calculations used to determine the total entrainment for that facility together with all methods and quality assurance/quality control procedures for data collection and data analysis. The proposed data collection and data analysis methods must be appropriate for a quantitative survey.
Submission (r)(9)(ii) is found in document (r)(9) sections 3 and supporting tables.

No fish species identified as endangered, threatened, or special concern were found in entrainment samples from Iatan Generating Station in 2018 or 2019. Several specimens (n = 3) of silvery minnows (*Hybognathus* spp.) and one blacktail chub (*Macrhybopsis* spp.) were collected in 2018 entrainment sampling but could not be identified to species due to their small size and/or lack of distinguishing features. In addition, there were four larvae identified as river sturgeon (*Scaphirhynchus* spp.) found in 2019 entrainment samples and one larvae identified as belonging to Acipenseriformes (i.e., either paddlefish or sturgeon). Three of the four river sturgeon specimens were yolk-sac larvae measuring ≤ 11 mm TL and lacked distinguishing morphological characters for species determination. The other river sturgeon and larvae identified as Acipenseriformes were in damaged condition preventing further determination.

(r)(10) Comprehensive Technical Feasibility and Cost Evaluation Study
The owner or operator of an existing facility that withdraws greater than 125 MGD AIF must develop for submission to the Director an engineering study of the technical feasibility and incremental costs of candidate entrainment control technologies. In addition, the study must include the following:
(i) Technical feasibility. An evaluation of the technical feasibility of closed-cycle recirculating systems as defined at 40 CFR 125.92(c), fine mesh screens with a mesh size of 2 millimeters or smaller, and water reuse or alternate sources of cooling water. In addition, this study must include:
(A) A description of all technologies and operational measures considered (including alternative designs of closed-cycle recirculating systems such as natural draft cooling towers, mechanical draft cooling towers, hybrid designs, and compact or multi-cell arrangements);
(B) A discussion of land availability, including an evaluation of adjacent land and acres potentially available due to generating unit retirements, production unit retirements, other buildings and equipment retirements, and potential for repurposing of areas devoted to ponds, coal piles, rail yards, transmission yards, and parking lots;
(C) A discussion of available sources of process water, grey water, waste water, reclaimed water, or other waters of appropriate quantity and quality for use as some or all of the cooling water needs of the facility; and
Submission (r)(10)(i)(A) through (C) is found in document (r)(10) sections 3 through 8.

(r)(10)(i)(D) Documentation of factors other than cost that may make a candidate technology impractical or infeasible for further evaluation.
The facility provided a submission for (r)(10)(i)(D) for the following:

1. Cooling Pond. Evergy owns approximately 3,303 acres that make up the Iatan facility. Very little of that property is suitable for development of a cooling pond. Existing lands used for the plant footprint and miscellaneous structures, the coal pile, settling basins, and landfills are unsuitable for development of, or conversion, to a cooling pond area. Additionally, 34.65 acres of land on the north and east sides of the plant are dedicated to the Welson Slough Mitigation Area that includes a restricted deed and is not available for development. Thus, based on the acreage requirements presented above, it is not feasible that a cooling pond could be developed within the existing property boundary. National Service Center for Environmental Publications (NSCEP) guidelines suggest sizing the cooling pond at approximately one acre/MW plus 20 percent for surrounding land. Using the gross Unit 1 capacity after condenser modifications identified in the Iatan Cooling Tower Study prepared by Burns & McDonnell Engineering Company, Inc. (BMcD) in 2016 of 767.6 MWe, this results in a pond area of approximately 921 acres. A USEPA study indicates that 4 acres per MW are required to obtain cooling water that is within 5 °F of the equilibrium temperature of a natural water supply. Use of the USEPA sizing ratio and incorporation of an additional 20 percent for surrounding land and access roads for maintenance results in an estimated cooling pond area of 3,684 acres.
2. Dry cooling is not considered feasible given regional atmospheric conditions.
3. Cylindrical wide-slot wedgewire screens: Wedge-wire screens are evaluated in § 122.21 (r)(10) as part of the entrainment compliance technology evaluations and were deemed not feasible at Iatan due to the amount of space required, potential interference with navigation, and substantial risk for fouling.

(ii) Other entrainment control technologies. An evaluation of additional technologies for reducing entrainment may be required by the Director.

Submission for (r)(10)(ii) is found in document (r)(10) sections 9 and 10. The facility explored groundwater use. Site-specific aquifer characteristics have been documented, and a potential well yield of approximately 8,750 gpm has been estimated. In order to meet Evergy's DIF for cooling water flow of approximately 447,000 gpm (536 MGD), an extensive wellfield consisting of over 51 large diameter and/or collector wells and water storage facilities would be required. Considering drawdown, potential well interference issues, and dewatering effect, there is likely insufficient land area available for such a well field and storage system. Bedrock wells are not an option in this region due to limited aquifer capacities and significant drilling costs. Considering these factors, the sole use of groundwater as an alternative water supply for once-through cooling water is considered infeasible. Consideration of groundwater, however, is retained as a feasible source of make-up water for a closed-cycle mechanical draft cooling tower system. No further technology evaluation was required by the department.

(r)(10)(iii) Cost evaluations. The study must include engineering cost estimates of all technologies considered in paragraphs (r)(10)(i) and (ii) of this section. Facility costs must also be adjusted to estimate social costs. All costs must be presented as the net present value (NPV) and the corresponding annual value. Costs must be clearly labeled as compliance costs or social costs. The applicant must separately discuss facility level compliance costs and social costs, and provide documentation as follows:
(A) Compliance costs are calculated as after-tax, while social costs are calculated as pre-tax. Compliance costs include the facility's administrative costs, including costs of permit application, while the social cost adjustment includes the Director's administrative costs. Any outages, downtime, or other impacts to facility net revenue, are included in compliance costs, while only that portion of lost net revenue that does not accrue to other producers can be included in social costs. Social costs must also be discounted using social discount rates of 3 percent and 7 percent. Assumptions regarding depreciation schedules, tax rates, interest rates, discount rates and related assumptions must be identified;
Submission for (r)(10)(iii)(A) is found in (r)(10) as required; including the appendix "Social Costs of Purchasing and Installing Entrainment Reduction Technologies", and additional information is found in (r)(11).

(B) Costs and explanation of any additional facility modifications necessary to support construction and operation of technologies considered in paragraphs (r)(10)(i) and (ii) of this section, including but not limited to relocation of existing buildings or equipment, reinforcement or upgrading of existing equipment, and additional construction and operating permits. Assumptions regarding depreciation schedules, interest rates, discount rates, useful life of the technology considered, and any related assumptions must be identified; and
Submission for (r)(10)(iii)(B) is found throughout document (r)(10); it includes costs for cooling tower retrofit, condenser flow changes, and modification to the CWIS itself to install fine mesh screens.

(C) Costs and explanation for addressing any non-water quality environmental and other impacts identified in paragraph (r)(12) of this section. The cost evaluation must include a discussion of all reasonable attempts to mitigate each of these impacts.
Submission for (r)(10)(iii)(C) is found in document (r)(12).

(r)(11) Benefits Valuation Study
The owner or operator of an existing facility that withdraws greater than 125 mgd AIF must develop for submission to the Director an evaluation of the benefits of the candidate entrainment reduction technologies and operational measures evaluated in paragraph (r)(10) of this section including using the Entrainment Characterization Study completed in paragraph (r)(9) of this section. Each category of benefits must be described narratively, and when possible, benefits should be quantified in physical or biological units and monetized using appropriate economic valuation methods. The benefits valuation study must include, but is not limited to, the following elements:

For this section, the proposed candidate entrainment technologies are closed cycle cooling towers (CCCT) and fine mesh traveling screens (FMTS). The department only provided responses for FMTSs in some instances below, because CCCT was assumed to use makeup water from groundwater collector wells, therefore there would be no impingement mortality or entrainment.

(i) Incremental changes in the numbers of individual fish and shellfish lost due to impingement mortality and entrainment as defined in 40 CFR 125.92, for all life stages of each exposed species;
Submission for (r)(11)(i) is found in (r)(9), Tables 3-5 and 3-6 for entrainment losses for all taxa. Impingement count and length data were extracted for the target species only from Appendix C of Golder Associate's *Final Report Clean Water Act §316(b) Impingement Mortality Characterization Study for The Lower Missouri River Utility Group* (2007). These data were then scaled up to monthly estimates and assigned to age categories as described in the report. The 2007 Golder Report was received September 20, 2022.

(ii) Description of basis for any estimates of changes in the stock sizes or harvest levels of commercial and recreational fish or shellfish species or forage fish species;
Submission for (r)(11)(ii) is found in section 5. The report details benefits for commercial and recreational fishing.

(iii) Description of basis for any monetized values assigned to changes in the stock size or harvest levels of commercial and recreational fish or shellfish species, forage fish, and to any other ecosystem or non use benefits;

While not required, monetized benefits to changes in harvest levels for commercial and recreational fish and forage fish are incorporated within Tables 5-1, 5-2 and 5-3. It was deemed unnecessary and irrelevant to provide the benefits to each individual benefit category for making an entrainment BTA determination; and this was not required. Biological benefits to recreational and commercial fishing as well as to forage species are provided in (r)(11) section 4.

(iv) A discussion of mitigation efforts completed prior to October 14, 2014 including how long they have been in effect and how effective they have been;
Submission for (r)(11)(iv) – no in-stream mitigation efforts were disclosed.

(v) Discussion, with quantification and monetization, where possible, of any other benefits expected to accrue to the environment and local communities, including but not limited to improvements for mammals, birds, and other organisms and aquatic habitats;
Submission (r)(11)(v) is found in section 4.3. The indirect use benefits include benefits to all components to the ecosystem other than commercial and recreational fishing including to mammals, birds, etc. These economic benefits were conservatively addressed assuming that all benefits were accrued through a popular and highly valued recreational species, channel catfish. This conservative assumption would lead to an overestimate of the actual value to this economic benefit category.

(vi) Discussion, with quantification and monetization, where possible, of any benefits expected to result from any reductions in thermal discharges from entrainment technologies.
Submission for (r)(11)(vi) is found in section 5.4. The report indicated that the facility "currently meets all water quality criteria for temperature and, hence, is protective of aquatic resources in the Missouri River. Hence, there would be minimal, if any, benefits through the further reduction in thermal discharge that would be afforded by installation of closed cycle cooling at Iatan Unit 1." However, the facility has not yet completed the Schedule of Compliance afforded them for temperature, and data do not support this statement for compliance with the final thermal limits at the edge of the mixing zone of 90 °F. Data exceed the future limit, and the facility has reported up to 94 °F after accounting for mixing allowances.

In the original submission, the links were broken; the facility sent an updated (r)(11) report on September 20, 2022.

(r)(12) Non-water Quality Environmental and Other Impacts Study
The owner or operator of an existing facility that withdraws greater than 125 MGD AIF must develop for submission to the Director a detailed facility-specific discussion of the changes in non-water quality environmental and other impacts attributed to each technology and operational measure considered in paragraph (r)(10) of this section, including both impacts increased and impacts decreased. The study must include the following:
(i) Estimates of changes to energy consumption, including but not limited to auxiliary power consumption and turbine backpressure energy penalty;
Submission for (r)(12)(i) is found in document (r)(12) section 4.1. A mechanical draft cooling tower will reduce plant output by 45,100 megawatt hours (MWh). A megawatt hour (MWh) equals 1,000 kilowatts of electricity generated per hour. For context, the average US home uses about 893 KWh/month.

(ii) Estimates of air pollutant emissions and of the human health and environmental impacts associated with such emissions;
Submission for (r)(12)(i) is found in document (r)(12) section 4.2. Iatan is an existing major source of air emissions permitted under the CAA, and a cooling tower would be considered a modification to this existing major source. If the PM emissions from modifications to the existing major source exceed the major modification thresholds, the cooling tower would be subject to Federal permit review including Prevention of Significant Deterioration (PSD), 40 CFR § 52.21. Emissions Associated with Replacement Energy Generation; a cooling tower retrofit would result in lost energy from both construction downtime and the energy penalty discussed in Section 4.1.1. As such, replacement energy would have to be made up by Iatan and/or the surrounding generating facilities to meet the regional transmission organization requirements. Assuming that such replacement energy is provided by fossil fuel generation facilities, this would require that these facilities burn additional fuel, thereby emitting additional carbon dioxide (CO_2, 47,810 tons/year), SO_2 (4 tons/year), nitrogen oxides (NOx, 20 tons/year), and particulate matter (PM, 1,911 tons/year). Over the course of the remaining life of unit 1 (2035-2022 = 13 years), that would be an additional 621,530 tons of CO_2.

(iii) Estimates of changes in noise;
Submission for (r)(12)(i) is found in document (r)(12) section 4.3. Nuisance noise from the cooling tower would be limited to areas within the Iatan property boundary; furthermore, it would be unlikely to add a significant level of noise to an already noisy industrial site. Operation of fine mesh TWSs in a modified CWIS may result in minor localized noise increases associated with an increase in the number of simultaneously operating TWSs and operation of debris clearing equipment. However, these increases would only be perceptible to those in the immediate vicinity and would not result in appreciable changes to noise levels at the distance of any sensitive receptors.

(iv) A discussion of impacts to safety, including documentation of the potential for plumes, icing, and availability of emergency cooling water;

Submission for (r)(12)(i) is found in document (r)(12) section 4.4. Decreased visibility and ice accumulation from vapor plumes could create hazardous working conditions at Iatan, potentially leading to increased worker accidents and injuries. The facility also receives coal shipments via the adjacent railroad southwest of the proposed cooling tower. Icing or fogging could create safety challenges for rail delivery. Increased incidents of ground fogging and icing on Missouri Route 45/273, northeast of the plant, could create an increase in hazardous driving conditions and vehicle accidents. Icing of high-capacity transmission lines may also be a concern at Iatan, as rime ice development on these lines could threaten plant operations. The operation of fine mesh modified TWSs in an expanded CWIS would not result in any risk of drift, plumes, or fogging as described for cooling towers, and would not directly increase unsafe working conditions.

(v) A discussion of facility reliability, including but not limited to facility availability, production of steam, impacts to production based on process unit heating or cooling, and reliability due to cooling water availability;
Submission for (r)(12)(i) is found in document (r)(12) section 4.5. Unit 1 would not generate electricity during the installation of an entrainment protection system.

(vi) Significant changes in consumption of water, including a facility-specific comparison of the evaporative losses of both once-through cooling and closed-cycle recirculating systems, and documentation of impacts attributable to changes in water consumption; and
Submission for (r)(12)(i) is found in document (r)(12) section 4.6. In a once-through cooling water system, water consumption is minimal. Virtually all of the cooling water withdrawn is returned back to the water source, though some is lost through evaporation in the heated effluent plume downstream. In a closed-cycle cooling system, wet cooling towers consume water through evaporation, as a portion of the circulating water in the cooling tower evaporates in order to cool the remainder of the water. A typical evaporation rate for mechanical draft cooling towers is 10 gpm/MW, representing 50 to 80 percent of the intake flow, depending on the cycles of concentration. For Unit 1, with a circulating rate of up to 340,000 gpm during peak generation and an intake flow of up to 8,800 gpm to compensate for evaporation, drift loss, and blowdown. The maximum rate of consumptive water use through evaporation and drift is estimated to be 6,391 gpm, representing approximately 73 percent of the intake flow. The remainder would consist of cooling tower blowdown which would potentially be discharged to the Missouri River. With the modification of the CWIS to accommodate fine mesh TWSs, the current intake flow would be maintained, and cooling water would be returned to the Missouri River. Therefore, the use of this technology would not result in changes to water consumption.

(vii) A discussion of all reasonable attempts to mitigate each of these factors.
Submission for (r)(12)(i) is found in document (r)(12) section 4.7. Potential measures available to mitigate impacts from cooling towers include drift eliminators, noise abatement technologies, and plume abatement. The proposed cooling tower design incorporates drift eliminators to reduce PM emissions associated with cooling tower drift. Noise and plume abatement technologies were determined to be unnecessary at Iatan.

(r)(13) Peer Review
If the applicant is required to submit studies under paragraphs (r)(10) through (12) of this section, the applicant must conduct an external peer review of each report to be submitted with the permit application. The applicant must select peer reviewers and notify the Director in advance of the peer review. The Director may disapprove of a peer reviewer or require additional peer reviewers. The Director may confer with EPA, Federal, State and Tribal fish and wildlife management agencies with responsibility for fish and wildlife potentially affected by the cooling water intake structure, independent system operators, and state public utility regulatory agencies, to determine which peer review comments must be addressed. The applicant must provide an explanation for any significant reviewer comments not accepted. Peer reviewers must have appropriate qualifications and their names and credentials must be included in the peer review report.
Submission: On February 4, 2021 the department received an email from Evergy regarding Evergy's choice of peer reviewers. The department responded on February 25, 2021 indicating that the reviewers seemed appropriate at the time. Document (r)(13) addresses the comments of the peer reviewers. The reviewers were provided a charge document with a list of questions they were to respond to. The reviewers were Charles C. Coutant, Ph. D., Dr. Paul Jakus, PhD, John S. Maulbetsch, PhD, and Joseph S. Raulli, PE. The comments were reviewed for responses in the entrainment documents (r)(9) through (r)(12). The reviewers were deemed appropriate and competent to provide actionable and appropriate comments.

Appendix 13-C contained the reviewers comments.

A. Coutant's comments were mainly editorial in nature; no follow up was required.
B. Jakus' comments provided additional calculations and scenarios where budget evaluations could be designed to change the cost outcome. The facility did not make changes to their cost evaluation based on these comments. Jakus' suggested changes would increase the cost of the CT placement for U1. Jakus also commented on the condenser penalty. The facility addressed this concern in (r)(10) Appendix E4 and Appendix F. Jakus' comments on (r)(11) were addressed in the (r)(11) report.
C. Maulbetsch sought clarification regarding dismissal of three alternatives. The Department agrees that these three alternatives are not appropriate for the facility. ZLD air equipment is not part of the 316(b) analysis in the Department's opinion unless the ZLD cannot be used with the alternatives for some reason. Maulbetsch approved of the cost estimates.

D. Raulli detailed findings covering the fine-mesh screen evaluations from (r)(10), (r)(11), and (r)(12). Raulli approved of the technical feasibility for FMTS.

DISCHARGE MONITORING REPORTING – ELECTRONIC (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 requiring electronic data reporting. To comply with the federal rule, the department is requiring all facilities to submit discharge monitoring data and reports online. To review historical data, the department's database has a publically facing search engine, available at https://apps5.mo.gov/mocwis_public/dmrDisclaimer.do

Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/mogem Information about the eDMR system can be found at https://dnr.mo.gov/env/wpp/edmr.htm.The first user shall register as an Organization Official and the association to the facility must be approved by the department. To access the eDMR system, use: https://apps5.mo.gov/mogems/welcome.action For assistance using the eDMR system, contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082. To assist the facility in entering data into the eDMR system, the permit describes limit sets designators in each table in Part A of the permit. Facility personnel will use these identifiers to ensure data entry is being completed appropriately. For example, M for monthly, Q for quarterly, A for annual, and others as identified.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the department. To obtain an electronic reporting waiver, a facility must first submit an eDMR Waiver Request form available on the department's web page. A request must be made for each operating permit. 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.

✓ This facility has not been granted a waiver, nor would this facility qualify for a waiver.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS

Domestic wastewater is defined as wastewater originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, wash water, animal waste, process and ancillary wastewater.

✓ Applicable; this facility does not fall under the jurisdiction of the Health Department and operates a WWTP for domestic wastewater, however, this outfall does not discharge, the facility utilizes the treated wastewater in other processes. Because of this, no sampling requirements are necessary or implemented for outfall #002.

Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.

✓ Applicable, sludge is removed by contract hauler. The permitted management strategy must be followed, see FACILITY DESCRIPTION in the permit. "Septage" is defined as solid waste originating from a package plant, lagoon, or septic tank with a PE of <150. If the described management strategy cannot be followed, the facility must obtain a permit modification.

EFFLUENT LIMITATIONS

Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. Permits are required to establish the most stringent or most protective limit. If the TBEL or WQBEL does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A) or 40 CFR 122.44(b)(1). See WASTELOAD ALLOCATION below which describes how WQBEL wasteload allowances are established under the permit. Effluent limitations derived and established for this permit are based on current operations of the facility. Any flow through the outfall is considered a discharge and must be sampled and reported as provided in the permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

EMERGENCY DISCHARGE

For non-discharging permits, some permits may allow a small amount of wastewater discharge under very specific circumstances.

✓ Not applicable; this permit does not contain conditions allowing emergency discharges.

FEDERAL EFFLUENT LIMITATION GUIDELINES

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N 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. Effluent guidelines are not always established for every pollutant present in a point source discharge.

In many instances, EPA promulgates effluent guidelines for an indicator pollutant. Industrial facilities complying with the effluent guidelines for the indicator pollutant will also control other pollutants (e.g. pollutants with a similar chemical structure). For example, EPA may choose to regulate only one of several metals present in the effluent from an industrial category, and compliance with the effluent guidelines will ensure similar metals present in the discharge are adequately controlled. All are technology based limitations which must be met by the applicable facility at all times. If Reasonable Potential is established for any particular parameter, and water-quality derived effluent limits are more protective of the receiving water's quality, the WQS will be used as the limiting factor in accordance with 40 CFR 122.44(d) and 10 CSR 20-7.015(9)(A).

- ✓ The facility has an associated Effluent Limit Guideline (ELG) at 40 CFR 423 applicable to certain wastewater and stormwater discharges at this site, and is applied under 40 CFR 125.3(a). See Part IV: EFFLUENT LIMITS DETERMINATION.
- ✓ This permit adds pollutants to the UWL leachate discharge outfall #010 pursuant to 40 CFR 423.11(r). This facility was given a landfill construction permit after 2015 therefore the 2015 NSPS (40 CFR 423.15(b) apply. See Part III UTILITY WASTE LANDFILL and Part IV, Outfall #010. 40 CFR 423.15(b)(16) for arsenic and mercury was added to the permit.

FIRE PROTECTION TESTING WATER (OUTDOOR)

Historically, the department misinterpreted the allowance to discharge firefighting wastewater without a permit as concurrently allowing outdoor hydrant testing without a specific permit allowance. Notably, the regulatory discharge allowance only extends to actual fire-fighting activities. These regulations are only found in 10 CSR 20-6.200(1)(D). Hydrant testing wastewater can be considered a water contaminant source pursuant to 644.016(25), dependent on the management strategies, which is why the department asks for additional information about these wastewaters. The Federal and State requirements necessitate a reasonable potential determination for all wastewater; hydrant testing is a type of wastewater with intermittent discharge, but not as an emergency. Information regarding fire protection is included under illicit discharges for MS4s, and no other regulation allows for any further exemptions, unless the department makes a finding of de minimis. Missouri Clean Water Law requires the department to perform due diligence for all wastewater discharges and all permits (general and site specific). Permit conditions now have specific requirements to manage outdoor hydrant testing logically, relevant to the pollutants contained in the fire protection testing wastewater. Currently, if the facility follows the appropriate management strategy, the permit will cover the discharges. If the facility does not use chlorinated water in the fire protection system, then the facility may allow the wastewater to directly enter a stream or storm collection system, given that sufficient energy dissipation strategies are followed to ensure that solids from soils or other sources are not being entrained in the wastewater. For facilities with chlorinated fire protection testing water, the facility must utilize a strategy to ensure chlorinated water is not being introduced into the waterbody. This could be by allowing the water to soak in to the surrounding vegetation, or by retaining the water through a permanent or temporary berm for sufficient time to volatilize the chlorine, or other appropriate BMP. Other management strategies exist, and it is the responsibility of the facility to operate all systems to minimize pollution to waters of the state and United States.

- ✓ In an email dated August 11, 2022, the facility disclosed they test 55 hydrants annually, with about 200 gallons cleared from the system for each hydrant. Evergy recycles the water back to the clarifier or non-discharging basin; the water is chlorinated. The permit stipulates that the facility must continue to recycle to the best of their ability, and any inadvertent losses are considered de minimis. The facility utilizes approximately 11,000 gallons annually for these tests.

GENERAL CRITERIA CONSIDERATIONS

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, permit decisions were made by completing a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). See Part III REASONABLE POTENTIAL for more information. In instances where reasonable potential exists, the permit includes limitations to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, 644.076.1 RSMo, as well as Part I §D – Administrative Requirements of Standard Conditions included in this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of §§644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission. See Part IV for specific determinations.

GOOD HOUSEKEEPING PRACTICES

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and employee training. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices is an effective means of ensuring the continued implementation of these measures.

Specific good housekeeping may include:

◆ Spill and overflow protection under chemical or fuel connectors to contain spillage at liquid storage tanks
◆ Load covers on residue hauling vehicles and ensure gates on trucks are sealed and the truck body is in good condition
◆ Containment curbs around loading/unloading areas or tanks
◆ Techniques to reduce solids residue which may be tracked on to access roads traveled by residue trucks or residue handling vehicles.
◆ Techniques to reduce solid residue on exit roads leading into and out of residue handling areas

Industrial facilities may conduct activities that use, store, manufacture, transfer, and/or dispose of PFAS containing materials. Successful good housekeeping practices to minimize PFAS exposure to stormwater could include inventorying the location, quantity, and method of storage; using properly designed storage and transfer techniques; providing secondary containment around chemical storage areas; and using proper techniques for cleaning or replacement of production systems or equipment.

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure. Another example could include locating PFAS-containing materials and residues away from drainage pathways and surface waters. For erosion and sediment control, BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors, are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

The SWPPP must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures. A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

GROUNDWATER MONITORING
Groundwater is a water of the state according to 644.016(27) RSMo, 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 was monitoring the groundwater at the site because of the historical unlined ash ponds. However, this permit no longer requires groundwater monitoring as the facility has shown that they have removed all ash from the unlined ash ponds. The landfill is a permitted utility waste landfill under the purview of the Solid Waste division, and groundwater monitoring is being conducted under that program and 40 CFR 257 §D; monitoring information can be found at https://www.evergy.com/ccr

ICE-MELT PRODUCT REMOVAL
The Department is authorized to require BMPs for stormwater facilities per 40 CFR 122.44(k)(2). The facility should, to the extent practicable, remove large pieces of salt as soon as possible. After winter weather has ceased for the year, the facility must inspect all low-lying areas for extra salt and sand, and remove these as soon as possible. Salt applied to areas has the potential to cause freshwater salinization which could result in a fish kill of sensitive species. To reduce potential for solids entering a stream, sand or other traction control materials will need to be evaluated against the probability that these materials could cause general criteria violations of solids and bottom deposits per 10 CSR 20-7.031(4).

LAND APPLICATION
Land application, or surficial dispersion of wastewater and/or sludge, is performed by facilities as an alternative to discharging. Authority to regulate these activities is pursuant to 644.026 RSMo. The department implements requirements for these types of operations pursuant to 10 CSR 20-6.015(4)(A)1 which instructs the department to develop permit conditions containing limitations, monitoring, reporting, and other requirements to protect soils, crops, surface waters, groundwater, public health, and the environment.
✓ Not applicable; this permit does not authorize operation of a surficial land application system to disperse wastewater or sludge.

LAND DISTURBANCE
Land disturbance, sometimes called construction activities, are actions which cause disturbance of the root layer or soil; these include clearing, grading, and excavating of the land. 40 CFR 122.26(b)(14) and 10 CSR 20-6.200(3) requires permit coverage for these activities. Coverage is not required for facilities when only providing maintenance of original line and grade, hydraulic capacity, or to continue the original purpose of the facility.
✓ Not applicable; this permit does not provide coverage for land disturbance activities. The facility may obtain a separate land disturbance permit (MORA) online at https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance MORA permits do not cover disturbance of contaminated soils, however, site

specific permits such as this one can be modified to include appropriate controls for land disturbance of contaminated soils by adding site-specific BMP requirements and additional outfalls.

MAJOR WATER USER

Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. https://dnr.mo.gov/water/business-industry-other-entities/reporting/major-water-users All major water users are required by law to register water use annually (Missouri Revised Statutes Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/document-search/frequently-asked-major-water-user-questions-pub2236/pub2236

- ✓ Applicable; this facility is a major water user and is registered with the state under registration number 47429372.
- ✓ The facility uses water from three different sources and also recirculates water within the facility when available.

SURFACE WATER

The permittee primarily uses water from the Missouri River and is located at river mile marker 411. In 2014, the facility reported it withdrew a total of 157,773,466,667 gallons which approximates to 432,256,073 gallons per day or about 432 MGD. The facility is major water user #47429372. Currently, the Missouri water intake withdraws about 471 MGD when operating.

GROUNDWATER

The below table is a summary of the groundwater wells as itemized by the permittee for the Water Resources Center in 2005. In 2014, the facility reported they used 2,906,242,315 gallons which approximates to 7,962,307 gallons per day or about 7.96 MGD. These groundwater wells withdraw waters of the state and the facility uses them for cooling and other purposes. Groundwater is used as make-up water for the cooling towers at Unit 2. This cooling water is recirculated. No waste-heat water discharge occurs from Unit 2. These wells are not part of the groundwater monitoring for coal combustion residuals.

POTABLE WATER

The facility imports potable water from the rural water district for drinking, personal use, and for the central facilities. Waste water from the central facilities building goes to the sewage treatment plant which discharges to the clarifier for re-use within the plant.

METALS

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). "Aquatic Life Protection" in 10 CSR 20-7.031 Tables A1 and A2, as well as general criteria protections in 10 CSR 20-7.031(4) apply to this discharge. The hardness value used for hardness-dependent metals calculations is typically based on the ecoregion's 50th percentile (also known as the median) per 10 CSR 20-7.015(1)(CC), and is reported in the calculations below, unless site specific data was provided. Per a memorandum dated August 6, 2019, the Director has determined limit derivation must use the median of the Level III Ecoregion to calculate permit limits, or site specific data if applicable. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used, as applicable, to determine the most protective effluent limit for the receiving waterbody's class and uses. HHP, DWS, GRW, IRR, or LWW do not take hardness into account.

MODIFICATION REQUESTS

Facilities have the option to request a permit modification from the department at any time under RSMo 644.051.9. Requests must be submitted to the Water Protection Program with the appropriate forms and fees paid per 10 CSR 20-6.011. It is recommended facilities contact the program early so the correct forms and fees are submitted, and the modification request can be completed in a timely fashion. Minor modifications, found in 40 CFR 122.63, are processed without the need for a public comment period. Major modifications, those requests not explicitly fitting under 40 CFR 122.63, do require a public notice period. Modifications to permits must be completed when: a new pollutant is found in the discharge; operational or functional changes occur which affect the technology, function, or outcome of treatment; the facility desires alternate numeric benchmarks; or other changes are needed to the permit.

Modifications are not required when utilizing or changing additives in accordance with the publication https://dnr.mo.gov/document-search/additive-usage-wastewater-treatment-facilities-pub2653/pub2653 nor are required when a temporary change or provisional discharge has been authorized by the regional office. While provisional discharges may be authorized by the regional office, they will not be granted for more than the time necessary for the facility to obtain an official modification from the Water Protection Program. Temporary provisional discharges due to weather events or other unforeseen circumstances may or may not necessitate a permit modification. The facility may ask for a Compliance Assistance Visit (CAV) from the regional office to assist in the decision-making process; CAVs are provided free to the permitted entity.

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)
This permit allows discharge to waters of the state. The discharges this permit allows may flow into and through the city's stormwater collection system. Regulated MS4s are managed by public entities, cities, municipalities, or counties. Phase I MS4s are Kansas City, Independence, and Springfield. Phase II MS4s are determined by population or location in an urbanized area. Regulated MS4s are required to develop and maintain a stormwater management program. These programs have requirements for developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system. Phase I MS4s also maintain oversight programs for industrial and high risk runoff. Regulated MS4s may keep a list of all of the other regulated dischargers (wastewater and stormwater) flowing through their system. If this facility discharges into a separate storm sewer system, the facility must make contact with the owner/operator of that system to coordinate with them. Regulated MS4 operators may request to inspect facilities discharging into their system; a list of regulated MS4s can be viewed at https://dnr.mo.gov/document-search/missouris-regulated-municipal-separate-storm-sewer-systems-ms4s or search by permit ID: MOR04 at https://apps5.mo.gov/mocwis_public/permitSearch.do to determine if this facility needs to contact a local stormwater authority.

NUTRIENT MONITORING
Nutrient monitoring is required for facilities characteristically or expected to discharge nutrients (nitrogenous compounds and/or phosphorus) when the design flow is equal to or greater than 0.1 MGD per 10 CSR 20-7.015(9)(D)8. This requirement is applicable to all Missouri waterways.

✓ The total design flow for this facility is >1 MGD and the facility may discharges nutrients, therefore nutrient monitoring is required on a monthly basis per 10 CSR 20-7.015(9)(D)8.B. However, single pass cooling is not considered to add nutrients to the Missouri River, therefore nutrient monitoring is not required for outfall #001. This facility is required to monitor for ammonia, total Kjeldahl nitrogen, nitrate plus nitrite, and phosphorus and each outfall will be assessed for nutrients individually.

Water quality standards per 10 CSR 20-7.031(5)(N) describe nutrient criteria requirements assigned to lakes (which include reservoirs) in Missouri, equal to or greater than 10 acres during normal pool conditions. The department's Nutrient Criteria Implementation Plan (NCIP) may be reviewed at: https://dnr.mo.gov/document-search/nutrient-criteria-implementation-plan-july-27-2018 Discharges of wastewater in to lakes or lake watersheds designated as L1 (drinking water use) are prohibited per 10 CSR 20-7.015(3)(C).

✓ Not applicable; this facility does not discharge in a lake watershed.

OIL/WATER SEPARATOR SYSTEMS AND USED OIL
Oil water separator (OWS) systems are frequently found at industrial sites where process water, wastewater, or stormwater may contain oils, petroleum, greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require treatment prior to discharge to publically owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separators classified as underground storage tanks (UST) which meet the volume requirements, must be operated according to manufacturer's specifications. OWS which are USTs may be authorized in NPDES permits per 10 CSR 26-2.010(2)(B) or otherwise will be regulated as a underground petroleum storage tank under tank rules. A facility may operate an OWS which is not considered a UST for the wastewater or stormwater at any facility without specific NPDES permit authorization. Alternatively, a facility is not required to cover a UST OWS under the NPDES permit if they desire to obtain alternative regulatory compliance. OWS treating animal, vegetable, or food grade oils are not required to be authorized under 10 CSR 20-26-2.020(2)(B). All best management practices for all OWS systems must be adhered. In 2017, field-poured concrete tanks, previously exempted from the tanks rules, lost their exempt status. Facilities must re-evaluate these concrete structures pursuant to these now relevant rules. Adjacent USTs are not covered by these regulations.

Any and all water treatment systems designed to remove floating immiscible oils are termed oil water separators. If a device is intended to capture oil and separate it from water which is to be discharged, this generally qualifies that oil as used oil (if it is petroleum-based in nature). Used oil and oily sludge must be disposed of in accordance with 10 CSR 25-11.279. Pursuant to 40 CFR 279.20(b)(2)(ii)(B), separating used petroleum-based oil from wastewater generated on-site (to make the wastewater acceptable for discharge or reuse pursuant to Federal or state regulations governing the management or discharge of wastewaters) are considered used oil generators and not processors under self-implementing 40 CFR 279 Standards For The Management Of Used Oil. Oily wastes generated by OWS are also generally subject to Spill Prevention, Control, and Countermeasure (SPCC) regulations.

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

✓ Not applicable; this facility is not required to have a certified operator. This permit does not cover domestic wastewater or the domestic wastewater population equivalent (PE) is less than two hundred (200) individuals. Additionally, this facility is not owned or operated by a municipality, public sewer district, county, public water supply district, or private sewer company regulated by the Public Service Commission, or operated by a state or federal agency. Private entities are exempted from the population equivalent requirement unless the department has reason to believe a certified operator is necessary.

PERMIT SHIELD

The permit shield provision of the Clean Water Act (Section 402(k)) and Missouri Clean Water Law (644.051.16 RSMo) provides that when a permit holder is in compliance with its NPDES permit or MSOP, it is effectively in compliance with certain sections of the Clean Water Act, and equivalent sections of the Missouri Clean Water Law. In general, the permit shield is a legal defense against certain enforcement actions, but is only available when the facility is in compliance with its permit and satisfies other specific conditions, including having completely disclosed all discharges and all facility processes and activities to the department at time of application. It is the facility's responsibility to ensure that all potential pollutants, waste streams, discharges, and activities, as well as wastewater land application, storage, and treatment areas, are all fully disclosed to the department at the time of application or during the draft permit review process. Previous permit applications are not necessarily evaluated or considered during permit renewal actions. All relevant disclosures must be provided with each permit application, including renewal applications, even when the same information was previously disclosed in a past permit application. Subsequent requests for authorization to discharge additional pollutants, expanded or newly disclosed flows, or for authorization for previously unpermitted and undisclosed activities or discharges, will likely require an official permit modification, including another public participation process.

PRETREATMENT

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

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

REASONABLE POTENTIAL (RP)

Regulations per 10 CSR 20-7.015(9)(A)2 and 40 CFR 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 allowance in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit allowance in mixing zones. A reasonable potential analysis (RPA) is a numeric RP decision calculated using effluent data provided by the facility for parameters that have a numeric Water Quality Standard (WQS). If 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). The RPA is performed using the *Technical Support Document for Water Quality Based Toxics Control (TSD)* methods (EPA/505/2-90-001) for continuous discharges. See additional considerations under Part II WATERBODY MIXING CONSIDERATIONS and Part III WASTELOAD ALLOCATIONS. Wasteload allocations are determined utilizing the same equations and statistical methodology. Absent sufficient effluent data, effluent limits are derived without consideration of effluent variability and is assumed to be present unless found to be absent to meet the requirements of antidegradation review found in 10 CSR 20-7.031(3) and reporting of toxic substances pursuant to 40 CFR 122.44(f). The department's permit writer's manual (https://dnr.mo.gov/water/business-industry-other-entities/technical-assistance-guidance/wastewater-permit-writers-manual), the EPA's permit writer's manual (https://www.epa.gov/npdes/npdes-permit-writers-manual), program policies, and best professional judgment guide each decision. Each parameter in each outfall is carefully considered; and all applicable information regarding: technology based effluent limitations, effluent limitation guidelines, water quality standards, inspection reports, stream water quality information, stream flows, uses assigned to each waterbody, and all applicable site specific information and data gathered by the facility through discharge monitoring reports and renewal (or new) application sampling.

Reasonable potential determinations (RPD) are based on physical conditions of the site as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD using best professional judgement. An RPD consists of evaluating visual observations for compliance with narrative criteria, non-numeric information, or small amounts of numerical data (such as 1 data point supplied in the application). Narrative criteria with RP typically translate to a numeric WQS, so a parameter's establishment being based on narrative criteria does not necessarily make the decision an RPD vs RP—how the data is collected does, however. For example, a facility with orange discharge can have RP for narrative criteria like color, but a numeric iron limit is established to account for the violation of narrative criteria based on effluent data submitted by the facility. When insufficient data is received to make a determination on RP based on numeric effluent data, the RPD decisions are based on best professional judgment considering the type of effluent discharged, the current operational controls in place, and historical overall management of the site. In the case of iron causing excursions of narrative criteria for color, if a facility has not had iron monitoring in a previous permit, adding iron monitoring would be an RPD, since numeric data isn't being used in the determination, but observable, site-specific conditions are.

When the facility is performing surficial or subsurface land application, the volume of water, frequency of application, type of vegetation, soil type, land slopes, and general overall operating conditions are considered. 10 CSR 20-8 are regulations for the minimum operating conditions for land application; these regulations cannot be excused even if there is no RP. RP is reserved for discharging outfalls given that these outfalls are the only ones which water quality standards apply to, but the process is similar as the site conditions are compared to regulations, soil sampling, pollutant profile, and other site specific conditions. In the case of non-discharging outfalls, an RPD is instead used to determine monitoring requirements.

The TSD RPA method cannot be performed on stormwater as the flow is intermittent and highly variable. A stormwater RPD consists of reviewing application data and discharge monitoring data and comparing those data to narrative or numeric water quality criteria. For stormwater outfalls, considerations are required per 10 CSR 6.200(6)(B)2: A. application and other information supplied by the facility; B. effluent guidelines; C. best professional judgment; D. water quality; and E. BMPs.

RPDs are also performed for WET testing in wastewater. While no WET regulations specific to industrial wastewater exist, 40 CFR 122.21(j)(5) implies the following can be considered: 1) the variability of the pollutants; 2) the ratio of wastewater flow to receiving stream flow; and 3) current technology employed to remove toxic pollutants. Generally, sufficient data does not exist to mathematically determine RPA for WET, but instead compares the data for other toxic parameters in the wastewater with the necessity to implement WET testing with either monitoring or limits. When toxic parameters exhibit RP, WET testing is generally included in the permit as an RPD. However, if all toxic parameters are controlled via limitations or have exhibited no toxicity in the past, then WET testing may be waived. Only in instances where the wastewater is well characterized can WET testing be waived.

Stormwater discharges do not adhere to the same principles of wastewater RPAs because stormwater discharges are not continuous, and at the time of precipitation discharge the receiving stream is also no longer at base (0) flow, meaning that using RP to develop WET testing requirements for stormwater is unrepresentative. The department works with the Missouri Department of Conservation and has understanding of streams already exhibiting toxicity, even without the influence of industrial wastewater or stormwater. Facilities discharging to streams with historical toxicity are required to use laboratory water for dilution, instead of water from the receiving stream.

TSD methods encountered may be § 3.3.2, § 5.7.3 for metals, and § 5.4.1 for chloride. Part IV EFFLUENT LIMIT DETERMINATIONS provides specific decisions related to this permit.

- ✓ An RPD was performed for outfalls #007, #008, and #011. These are stormwater outfalls. There was no RP found for pH and aluminum at outfalls #007 and #008. When there is no RP, a limit is not required; backsliding was also assessed. See Part III, ANTIBACKSLIDING, Part I STORMWATER, and Part IV EFFLUENT LIMITS DETERMINATION for Outfall #011.
- ✓ The previous permit indicated "There Shall Be No Discharge of Floating Solids or Visible Foam in Other Than Trace Amounts" under each table. The statement was not evaluated against actual site conditions therefore, this general criteria was re-assessed. It was determined that this facility does not discharge solids or foam in amounts which would indicate reasonable potential, therefore the statement was removed. Each general criteria was assessed for this facility. This was a non-numeric limitation without RP; backsliding is permissible under §303(d)(4)(B) for attained waters.
- ✓ A statistical RPA was conducted on appropriate parameters. A more detailed version including calculations of this RPA is available upon request.

Outfall #003

Parameter:	Units	CMC Acute	CCC Chronic	Listing	Daily Max	Monthly Average	n#	CV	n Max	MF	RWC Acute	RWC Chronic	RP
Aluminum, TR	µg/L	750	n/a	AQL	750.00	373.84	1	0.600	1310	13.2	17284.6	17284.6	Yes

Outfall #010

Parameter:	Units	CMC Acute	CCC Chronic	Listing	Daily Max	Monthly Average	n#	CV	n Min	n Max	MF	RWC Acute	RWC Chronic	RP
Ammonia (early life stages+)	mg/L	8.41	1.43	early life	3.5	1.33	1	0.600	0.15	0.15	13.2	2.0	2.0	Yes*
Aluminum (Al)	µg/L	750	n/a	AQL	750.00	373.84	1	0.600	217	217	13.2	2863.2	2863.2	Yes*
Arsenic (As)	µg/L	340	150	AQL	246.40	122.82	1	0.600	4.4	4.4	13.2	58.1	58.1	No
Arsenic (As)	µg/L	n/a	100	IRR	164.27	81.88	1	0.600	4.4	4.4	13.2	58.1	58.1	No
Boron (B)	µg/L	n/a	2000	AQL	3285.34	1637.60	2	0.600	3070	3300	7.4	24394.5	24394.5	Yes
Chloride + Sulfate	mg/L	1000	n/a	AQL	1000	498.46	2	0.600	5900	6528	7.4	48256.7	48256.7	Yes
Copper (Cu)	µg/L	31.93	19.71	AQL	31.93	15.92	1	0.600	1.2	1.2	13.2	15.8	15.8	No
Fluoride (F-)	mg/L	n/a	4	AQL	6.6	3.28	2	0.600	0.55	1.1	7.4	8.1	8.1	Yes*
Iron (Fe)	µg/L	n/a	1000	AQL	1642.67	818.80	1	0.600	205	205	13.2	2704.8	2704.8	Yes*
Nickel (Ni)	µg/L	984.63	109.40	AQL	179.71	89.58	1	0.600	50	50	13.2	659.7	659.7	Yes*
Selenium (Se)	µg/L	n/a	5	AQL	8.21	4.09	2	0.600	19.8	45	7.4	332.7	332.7	Yes

Units are (µg/L) unless otherwise noted.

n/a	Not Applicable
n	number of samples; if the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.
CV	Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the mean of the same sample set.
CCC	continuous chronic concentration
CMC	continuous maximum concentration
RWC	Receiving Water Concentration: concentration of a toxicant or the parameter in the receiving water after mixing (if applicable)
MF	Multiplying Factor; 99% confidence level and 99% probability basis
RP	Reasonable Potential: an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).
*	RP mathematically was positive, however, due to the limited number of samples, a multiplying factor of 13.2 is default. The data provided was less than the proposed monthly average (in the case of Ammonia, less than half the July (lowest) monthly average) therefore there is truly no RP.

REGIONAL OFFICES (ROS)
Regional Offices will provide a compliance assistance visit at a facility's request; a regional map with links to phone numbers can be found here: https://dnr.mo.gov/about-us/division-environmental-quality/regional-office. Or use https://dnr.mo.gov/compliance-assistance-enforcement to request assistance from the Region online.

RENEWAL REQUIREMENTS
The renewal special condition permit requirement is designed to guide the facility to prepare and include all relevant and applicable information in accordance with 10 CSR 20-6.010(7)(A)-(C), and if applicable, federal regulations. The special condition may not include all requirements and requests for additional information may be made at the time of permit renewal under 644.051.13(5) RSMo and 40 CFR 122.21(h). Prior to submittal, the facility must review the entire submittal to confirm all required information and data is provided; it is the facility's responsibility to discern if additional information is required. Failure to fully disclose applicable information with the application or application addendums may result in a permit revocation per 10 CSR 20-6.010(8)(A) and may result in the forfeiture of permit shield protection authorized in 644.051.16 RSMo. Forms are located at: https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater

SAMPLING FREQUENCY JUSTIFICATION
Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges, such as wastewater discharges, shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2).

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

SAMPLING TYPE JUSTIFICATION
Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent will consider implementing 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. For further information on sampling and testing methods see 10 CSR 20-7.015(9)(D)2.

SCHEDULE OF COMPLIANCE (SOC)
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and the terms and conditions of an operating permit. SOCs are allowed under 40 CFR 122.47 and 10 CSR 20-7.031(11) providing certain conditions are met. An 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 in accordance with 40 CFR 125.3.
- For a newly constructed facility in most cases per 644.029 RSMo. Newly constructed facilities must meet all applicable effluent limitations (technology and water quality) when discharge begins. New facilities are required to install the appropriate control technologies 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 specifically 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 for standard time frames for schedules for common activities, and guidance on factors to modify the length of the schedule.

- ✓ Applicable; the time given for effluent limitations of this permit listed under Interim Effluent Limitations and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits. See permit Sections A and B for compliance dates, and Part IV DERIVATION for more information.
- ✓ Outfall #010 rarely discharges, roughly once every 4 to 5 years. The facility is granted an extended SOC to determine best management strategies and technical solutions for the identified pollutants of concern.
- ✓ On January 9, 2023, the facility requested an extended SOC for outfall #010. Outfall #010 rarely discharges, roughly once every 4 to 5 years. The facility is requesting an extended SOC to determine best management strategies and technical solutions toward meeting the final effluent limits for boron, selenium, and chloride plus sulfate. The infrequent discharge of this wastewater stream both limits any potential for environmental impact and creates a need for an extended timeline. Discharges during normal routine operation are needed for proper characterization of the wastewater which is required for development of compliance options.

SECONDARY CONTAINMENT:
The department has established minimum requirements for secondary containment areas. These conditions are necessary to prevent contamination in stormwater before storm events, and before stormwater has a risk for contamination in these areas. By including dry inspection requirements, the department can be confident in the site's operational controls. By fixing all leaks and removing debris from the secondary containment areas prior to precipitation events, stormwater collected in the areas are unlikely to yield contamination or elicit sheen thereby allowing immediate removal of stormwater which is in compliance with SPCC plans.

The department is establishing a permit requirement for visual inspection frequency commiserate with the potential for contamination for secondary containment(s) to protect waters of the state from petroleum contamination, oils and greases, or sheen pursuant to 10 CSR 20-7.031(4)(B); and other water contaminants as necessary. These conditions establish permissible allowances for the facility to discharge stormwater that was either free of sheen or has been cleaned of sheen, but only if the facility has demonstrated, through inspections, the facility has been effectively maintaining tanks and appurtenances in the secondary containment areas.

Historic petroleum secondary containment language required laboratory testing for benzene, toluene, ethylbenzene, and xylene (BTEX) upon sheen observance; to have all laboratory testing completed prior to release of the contained stormwater; and to be below established numeric limits for BTEX prior to release. However, it was noted by commenters that when the department requires facilities to keep the sheeny accumulated stormwater in the secondary containment for long periods of time (time needed to obtain laboratory results for BTEX, it is contrary to other relevant regulations, which state contaminated stormwater must be disposed of as quickly as possible. Facilities then developed alternative actions, such as tanking sheeny secondary containment stormwater until the expedited BTEX laboratory analysis was completed, then releasing the water from the tank. These alternative methods of tanking sheeny stormwater are both costly and resource-intensive, requiring worker time which needs to be directed to other facility activities. By shifting worker time from post-sheen-occurrence management to pre-contamination dry-inspections, the department has alleviated several commenter's concerns regarding past secondary containment special conditions.

By allowing on-site sheen removal, then discharge, the department is allowing expedited drainage of the secondary containment without delay. When a facility properly maintains tanks and appurtenances via these series of inspections and provides sheen removal prior to release, then the facility can maintain compliance with Missouri's requirements for the safe storage and handling of flammable and combustible liquids (2 CSR 90-30.050), storage tank secondary containment volume requirements (40 CFR 112), and Missouri's general water quality criteria 10 CSR 20-7.031(4)(B).

The department revised petroleum secondary containment special conditions in permits based on National Fire Protection Association (NFPA) standards [mainly NFPA 30], enforceable under Missouri fire prevention codes [2 CSR 90-30.050], and Spill Prevention, Control, and Countermeasure (SPCC) [40 CFR 112] requirements. 2 CSR 90-30.050(20) and (21) specifically reference the Department of Natural Resources' environmental regulations. To apply these referenced conditions, this permit requires periodic secondary containment inspections.

It is acceptable for the inspections this permit requires to contradict the facility's SPCC plan inspection frequency, as these two requirements have different goals; the frequencies designated in the SPCC plan are based on the facility's evaluation of a tankage system's potential for catastrophic failure, not small leaks that result in sheeny stormwater. The inspection frequency this permit identifies for secondary containments have the capability to identify small leaks from appurtenances which have the possibility to cause contamination in standing stormwater, not simply a catastrophic failure. SPCC requirements pursuant to 40 CFR 112.8(c)(3)(iv) and 40 CFR 112.12(c)(3)(iv) also dictate that release of contaminated stormwater is prohibited unless regulated under an NPDES permit which allows for bypassing pursuant to 40 CFR 122.41(m)(3). As this permit does not allow bypassing, the facility must follow the inspection steps listed in the special conditions of this permit.

Many facilities are subject to the requirements outlined by the EPA in 40 CFR 112.3, also known as the SPCC plan: detailing the equipment, workforce, procedures, and steps necessary to prevent, control, and provide adequate countermeasures to a discharge. These regulations minimally require secondary containment and diversion structures be maintained. Title 40 regulations are developed by the Environmental Protection Agency. The self-certified SPCC plan a facility designs, while aimed to protect waters of the state and United States (WOTS/WOTUS), may differ considerably from site to site. This permit's conditions serves to treat similar facilities similarly. The EPA did not establish minimum frequency container or containment inspections; this permit does establish a minimum frequency, and concurrent inspections for this permit and per the SPCC plan may occur. This permit does not require a professional engineer (PE) inspect the tankage systems.

SPILLS, OVERFLOWS, AND OTHER UNAUTHORIZED DISCHARGE REPORTING
Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest possible 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.
https://revisor.mo.gov/main/OneSection.aspx?section=260.500&bid=13989&hl=

Any other spills, overflows, or unauthorized discharges reaching waters of the state must be reported to the regional office during normal business hours, or after normal business hours, to the department's 24 hour Environmental Emergency Response spill line at 573-634-2436.

Certain industrial facilities are subject to the self-implementing regulations for Oil Pollution Prevention in 40 CFR 112, and are required to initiate and follow Spill Prevention, Control, and Countermeasure (SPCC) Plans. This permit, as issued, is not intended to be a replacement for any SPCC plan, nor can this permit's conditions be automatically relaxed based on the SPCC plan if the permit is more stringent than the plan.

SLUDGE – INDUSTRIAL
Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process or non-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 any material derived from industrial sludge. Industrial sludge could also be derived from lagoon dredging or other similar maintenance activities. Certain oil sludge, like those from oil water separators, are subject to self-implementing federal regulations under 40 CFR 279 for used oils.
✓ Applicable; quenched ash is removed to the on-site landfill. See outfall #010.

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

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

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 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 because stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day or storm event without real-time ad-hoc monitoring. 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, area 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. Other permits are also reviewed 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. If a facility has not disclosed BMPs applicable to the pollutants for the site, the facility may not be eligible for benchmarks.

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) under most stormwater discharge scenarios. 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 facility 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 must 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 if there is no RP for water quality excursions.

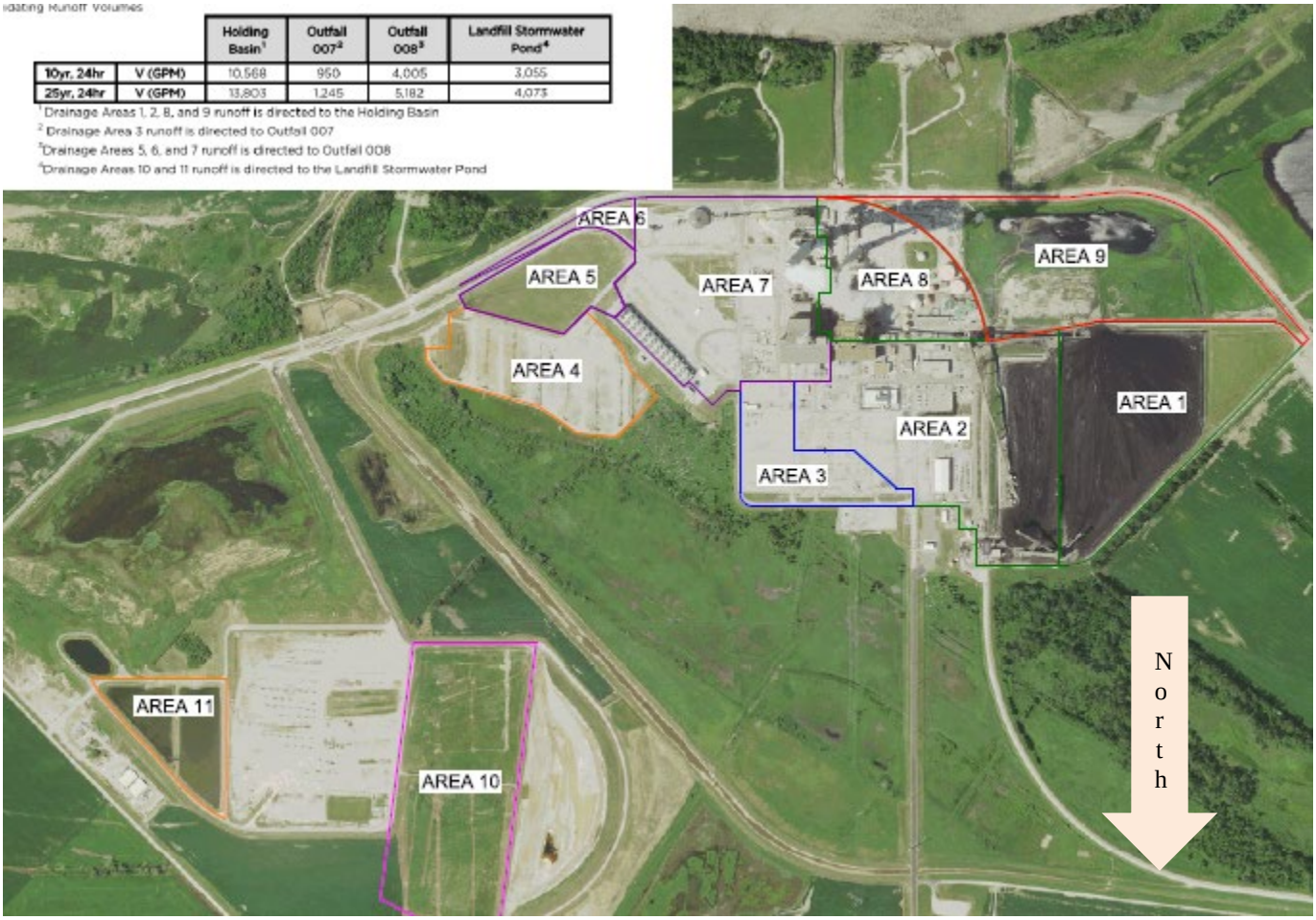
✓ Applicable, this facility has stormwater-only outfalls where benchmarks or limitations were deemed appropriate contaminant measures.

Stormwater Areas:

Holding Runoff Volumes

		Holding Basin[1]	Outfall 007[2]	Outfall 008[3]	Landfill Stormwater Pond[4]
10yr, 24hr	V (GPM)	10,568	950	4,005	3,055
25yr, 24hr	V (GPM)	13,803	1,245	5,182	4,073

[1] Drainage Areas 1, 2, 8, and 9 runoff is directed to the Holding Basin
[2] Drainage Area 3 runoff is directed to Outfall 007
[3] Drainage Areas 5, 6, and 7 runoff is directed to Outfall 008
[4] Drainage Areas 10 and 11 runoff is directed to the Landfill Stormwater Pond



Outfall #007, which drains only area 3 of the plant property is appropriate for best management practices instead of numeric benchmarks. On October 2, 2022, the facility supplied a list of minimum BMPs they will perform. For stormwater provisions, the law is clear that prescribed best management practices (BMPs) can be measures of compliance with both technology and water quality requirements. 40 CFR 122.44(k) specifically allows BMPs in place of numeric requirements; although sometimes a numeric benchmark is utilized in the place of requiring specific BMPs. A numeric benchmark is not a limit, but instead a target. If either path (BMP or benchmark) of compliance is chosen for the permit, first the discharge cannot have reasonable potential; a positive RP determination for stormwater is not completed in the same manner as wastewater, and there is no RP for this stormwater discharge.

To determine RP in stormwater, the 7Q10 flow was compared to the lowest stream peak flow using https://streamstats.usgs.gov/ss/ The 7Q10 flow upstream is <0.1 CFS therefore is not afforded mixing, but is found at 0.00607 cfs. The minimum peak flow is 543 cfs. The conditions under which the stormwater outfalls discharge will have a high receiving stream flow. When a different flow, above the low flow conditions are used to determine RP, essentially "mixing" is afforded to stormwater discharges. See RP above for more information.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A SWPPP must be prepared by the facility if the SIC code or facility description type 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.

Pursuant to 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under §304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under §402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. A BMP may take the form of a numeric benchmark. 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 and again in 2021 https://www.epa.gov/sites/default/files/2021-03/documents/swppp_guide_industrial_2021_030121.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).

Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the facility can 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.

The facility can review the precipitation frequency maps for development of appropriate BMPs. The online map https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=mo can be targeted to the facility location and is useful when designing detention structures and planning for any structural BMP component. The stormwater map can also be used to determine if the volume of stormwater caused a disrupted BMP; and if the BMP must be re-designed to incorporate additional stormwater flows.

Areas which must 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 shall be formulated to best control the amount of pollutant being released and discharged by each activity or source. This must 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 must be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but may 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 (https://dnr.mo.gov/document-search/antidegradation-implementation-procedure).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The AA evaluation can 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 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), §II.B.

If parameter-specific numeric benchmark exceedances continue to occur and the facility 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 facility 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 must 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, which includes an appropriate fee; the application is found at: https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater

- ✓ Applicable; a SWPPP shall be developed and implemented for this facility; see specific requirements in the SPECIAL CONDITIONS section of the permit. The SWPPP must cover all locations identified as "industrially exposed" in 40 CFR 122.26(b)(14); this includes the rail lines even though they are not identified on the image above.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS

Please review Standard Conditions Part 1, §A, No. 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 or 40 CFR 136 unless alternates are approved by the department and incorporated within this permit. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in any given discharge at concentrations low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. The reporting limits established by the chosen laboratory must be below the lowest effluent limits established for the specified parameter (including any parameter's future limit after an SOC) in the permit unless the permit provides for an ML or if the facility provides a written rationale to the department. It is the facility's responsibility to ensure the laboratory has adequate equipment and controls in place to quantify the pollutant. Inflated reporting limits will not be accepted by the department if the reporting limit is above the parameter value stipulated in the permit. A method is "sufficiently sensitive" when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A facility is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

One of the major strategies of the Clean Water Act (CWA) in making "reasonable further progress toward the national goal of eliminating the discharge of all pollutants" is to require effluent limitations based on the capabilities of the technologies available to control those discharges. Technology-Based Effluent Limitations (TBELs) aim to prevent pollution by requiring a minimum level of effluent quality attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations (WQBELs). The NPDES regulations at Title 40 of the Code of Federal Regulations (CFR) 125.3(a) instructs NPDES permit writers to develop technology-based treatment requirements, consistent with CWA §301(b) and §402(a)(1), to represent the minimum level of control imposed in a permit when categorical standards do not exist for the waste stream. The regulation also indicates that permit writers must include in permits, additional or more stringent effluent limitations and conditions, including those necessary to protect water quality. Regardless of the technology chosen to be the basis for limitations, the facility is not required to install the technology, only to meet the established numeric TBEL.

TBEL SUBSECTION 1. Numeric Technology Effluent Limits

Case-by-case numeric TBELs are developed pursuant to CWA §402(a)(1), which authorizes the state to issue a permit meeting either, 1) all applicable requirements developed under the authority of other sections of the CWA (e.g., technology-based treatment standards, water quality standards) or, 2) before taking the necessary implementing actions related to those requirements, "such conditions as the administrator determines are necessary to carry out the provisions of this Act." The regulation at §125.3(c)(2) specifically cite this section of the CWA, stating technology-based treatment requirements may be imposed in a permit "on a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable." Further, §125.3(c)(3) indicates "where promulgated effluent limitations guidelines only apply to certain aspects of the discharger's operation, or to certain pollutants, other aspects or activities are subject to [this BPJ] regulation on a case-by-case basis to carry out the provisions of the act." When establishing case-by-case effluent limitations using best professional judgment, the permit writer should cite in the fact sheet or statement of basis both the approach used to develop the limitations, discussed below, and how the limitations carry out the intent and requirements of the CWA and the NPDES regulations. However, when the EPA has promulgated a standard applicable to the category, the permit writer must adhere to 40 CFR 125.3(c)(1) which states: "Application of EPA-promulgated effluent limitations developed under section 304 of the Act to dischargers by category or subcategory. These effluent limitations are not applicable to the extent that they have been remanded or withdrawn. However, in the case of a court remand, determinations underlying effluent limitations shall be binding in permit issuance proceedings where those determinations are not required to be reexamined by a court remanding the regulations.

In addition, dischargers may seek fundamentally different factors variances from these effluent limitations under §122.21 and subpart D of this part." When a permit writer considers evaluation of numeric and non-numeric technology-based effluent limits, the onus for the evaluation stems from those specific waste-streams or pollutants having not been considered under the ELG category.

The US EPA *Steam Electric Power Generating Point Source Category: Final Detailed Study Report* (EPA 821-R-09-008) October 2019, utilized available data to characterize the waste streams discharged from steam electric facilities, as well as the technologies and practices used in the industry to control the discharge of waste pollutants. The department has reviewed the Iatan Generating Station's discharges individually and comprehensively to determine compliance with all possible water quality and technology limitations found in 10 CSR 20 and 40 CFR 423, however, this section only relates to technological effluent regulations.

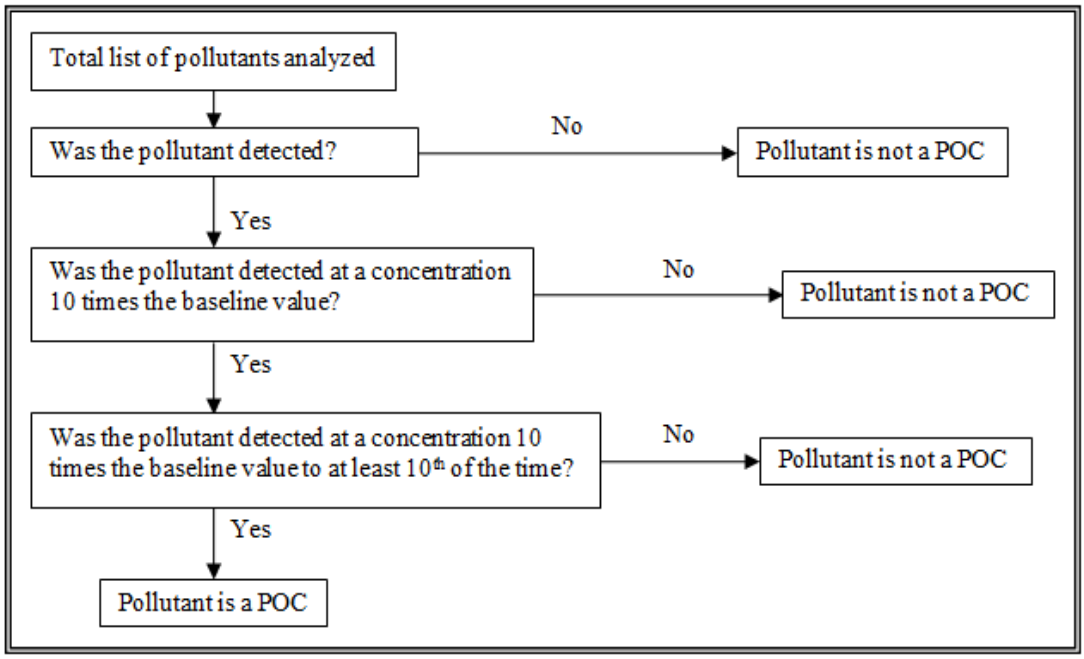
40 CFR 125.30(a) Subpart D, [for establishing criteria in permits under fundamentally different factors under §301(b) of the Act] establishes baseline criteria and standards to be used in determining whether effluent limitations alternative to those required by promulgated EPA effluent limitations guidelines (under sections 301 and 304 of the Act; hereinafter referred to as "national limits") should be imposed on a discharger because factors relating to the discharger's facilities, equipment, processes, or other factors related to the discharger are fundamentally different from the factors considered by EPA in development of the national limits. Subpart D of 40 CFR 125 applies to all national limitations promulgated under sections 301 and 304 of the Act, *except for the BPT limits contained in 40 CFR 423.12 (steam electric generating point source category)*. Therefore, the department need not further evaluate previously categorized waste streams of: low volume waste sources (40 CFR 423.12(b)(3)), fly ash and bottom ash transport water (40 CFR 423.12(b)(4)), metal cleaning wastes (40 CFR 423.12(b)(5)), once through cooling (40 CFR 423.12(b)(6)), cooling tower blowdown (40 CFR 423.12(b)(7)), coal pile runoff (40 CFR 423.12(b)(9)), and flue gas desulphurization wastewater, flue gas mercury control wastewater, combustion residual leachate, or gasification wastewater (40 CFR 423.12(b)(11)), as they are not applicable for further BPT review. Certain requirements, found in 40 CFR 423.12 are superseded in the following sections of the regulation (423.13 et seq.), such as those for new sources, and are applied based on site specific assessments of the specific wastewater streams. Additionally, the EPA has promulgated revised standards for 40 CFR 423 effective January 4, 2016 and December 14, 2020 which eliminate the need for any potential interim review for these types of discharge under CWA §402(a)(1)(A), where all conditions of 33 USC 1311 (CWA §301, technology-based effluent limits), 33 USC 1312 (CWA §302, water quality-based effluent limits), 33 USC 1316 (CWA §306, categorical national standards of performance), 33 USC 1318 (CWA §308 records, reports, and inspections) and, 33 USC 1343 (CWA §403, ocean discharges - not applicable for Missouri Facilities) are being met. When applying all applicable regulations under the above Act, the department has no obligation to scrutinize categorical standards already evaluated by the EPA under CWA §304 [33 USC 1314(i)(2)] for information and guidelines.

The EPA Office of Water published the Effluent Guidelines Program Plan 14 (EPA-821-R-21-001); January 2021. https://www.epa.gov/sites/production/files/2021-01/documents/eg-plan-14_jan-2021.pdf In this plan, the Office of Water fulfilled its biennial requirement under CWA §304(m) to publish expected revisions to ELGs, or propose new ELGs. Plan 14 includes a schedule to reevaluate landfill leachate and legacy wastewater. However, the facility does not typically discharge landfill leachate (leachate is tanked and applied to the cap as dust suppression), and has completed clean closure of the ash ponds therefore no additional ash sluice legacy wastewater will be discharged.

There is no necessity to further evaluate the domestic wastewater outfall, #002. This specific type of wastewater is well categorized and further technology evaluations would be inconsistent with the determinations provided in 40 CFR 125.3(c)(1) when the permit writer considers the categories stipulated in 10 CFR 20-7.015 to fall within the purview of (c)(1) which states: "Application of EPA [or state] promulgated effluent limitations developed under section 304 of the Act to dischargers by category or subcategory" therefore no further technological review is necessary. This facility utilizes all domestic wastewater in plant processes therefore also does not discharge this wastewater eliminating the need for any limits whatsoever.

Except for temperature, discussed later in depth, there were no further evaluations of the pollutant discharges from outfall #001; outfall #001 is single pass cooling water. Any metals, nutrients, or other contaminants present in outfall #001's discharge are withdrawn from the Missouri River. The permit writer compared the Missouri River levels of pollutants to the discharge values and noted no contaminants of concern were discharged into the river by the facility.

General Overview of Numeric Pollutant Determinations



POC = Pollutant(s) of Concern

BPT = Best Practicable Control Technology Currently Available is defined at CWA section 304(b)(1)

BCT = Best Conventional Pollutant Control Technology, defined at CWA section 304(b)(4)

BAT = Best Available Technology Economically Achievable is defined at CWA section 304(b)(2)

Of notice is the lack of inclusion of the BTA standard in this section, §304, of the Clean Water Act. The BTA standard only applies to cooling water intakes in the permit application section of 40 CFR 122.21(r) and 40 CFR 125 Subpart J.

Technological assessment of the power plant cooling discharges are to occur under CWA §316. In review of the requirements to evaluate technology, there is no onus for the department to evaluate thermal discharges pursuant to technological fundamentally different factors under §§ 301 and 304, because thermal discharges do not fall under either of those sections. In fact, CWA §304 specifically directs administrators to not consider thermal discharges as conventional pollutants for the purposes of developing water quality standards. Missouri's regulations, therefore, treat thermal discharges as a stand-alone requirement under 10 CSR 20-7.031(5)(D)6. Because thermal discharges are not conventional, the department has therefore determined only application of technologies which are not for conventional pollutants can apply; specifically, the only available consideration is BAT for best available technology, keeping in mind that thermal discharges are also not classified as toxic pollutants. Therefore, the TBEL Subsections 3 through 6 in this fact sheet only evaluate BAT (Best Available Treatment Technology Economically Achievable) requirements for the thermal discharges in combination with BTA (Best Technology Available) for the cooling intake.

The site-specific TBELs reflect the Best Professional Judgment (BPJ) of the issuing authority, taking into account the same statutory factors EPA would use in promulgating a national effluent guideline regulation, but they are applied to the circumstances relating specifically to the applicant. The permit writer also should identify whether state laws or regulations govern TBELs and might require more stringent performance standards than those required by federal regulations. In some cases, a single permit could have TBELs based on effluent guidelines, best professional judgment, state law, and WQBELs based on water quality standards.

TBEL SUBSECTION 2. Numeric TBEL POC Table for BPT, BCT, and BAT:
Best Practicable Control Technology Currently Available (BPT) is the first level of technology-based effluent controls for direct dischargers and it applies to all types of pollutants (conventional, nonconventional, and toxic). The Federal Water Pollution Control Act (FWPCA) amendments of 1972 require when EPA establishes BPT standards, it must consider the industry-wide cost of implementing the technology in relation to the pollutant-reduction benefits. EPA also must consider the age of the equipment and facilities, the processes employed, process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and such other factors as the EPA Administrator deems appropriate [CWA §304(b)(1)(B)]. Traditionally, EPA establishes BPT effluent limitations on the basis of the average of the best performance of well-operated facilities in each industrial category or subcategory. Where existing performance is uniformly inadequate, BPT may reflect higher levels of control than currently in place in an industrial category if the agency determines the technology can be practically applied. See CWA §§301(b)(1)(A) and 304(b)(1)(B). Because the EPA has not promulgated TBELs for the cooling water waste stream or pollutants identified as POCs, the permit writer follows the same format to establish site-specific TBELs. Although the numerical effluent limitations and standards are based on specific processes or treatment technologies to control pollutant discharges, EPA does not require dischargers to use these technologies. Individual facilities may meet the numerical requirements using whatever types of treatment technologies, process changes, and waste management practices they choose.

This method of analysis is one of several which could be utilized, and is only to assist the permit writer in determining possible contaminants of concern. This evaluation does not indicate actual effluent limitations the permit writer could establish in the permit. TBEL analysis is not performed on stormwater.

Numeric Potential Pollutant of Concern Determinations

PARAMETER	Units	Outfall #003 Main Outfall	Outfall #010 UWL Leachate	Baseline	Baseline x 10	PPOC
FORM C OF APPLICATION FOR PERMIT RENEWAL: PART A						
Biochemical Oxygen Demand$_5$	mg/L	<2	3.6	2	20	no
Chemical Oxygen Demand	mg/L	42	125, 33	5	50	no
Total Organic Carbon	mg/L	3.2	1.8, 1.9	1	10	no
Total Suspended Solids	mg/L	52.7	8.0	4	40	*
NUTRIENTS:						
Ammonia as N	mg/L	<0.10	0.93, 0.15	0.05	0.5	no
Nitrate + Nitrite as N	mg/L	0.70	0.69, 0.1	0.05	0.5	yes #003
Nitrogen, Total N	mg/L	0.91	3.7	none	none	n/a
Phosphorus, Total P	mg/L	0.16	<0.1	0.01	0.1	yes #003
FORM C OF APPLICATION FOR PERMIT RENEWAL: OTHER						
Bromide	mg/L	<1.0	166	none	none	n/a
Chlorine, Total Residual	mg/L	NR	NR	none	none	n/a
Cyanide, Total	µg/L	<10	15	20	200	no
Fluoride	mg/L	0.37	1.1, 0.55	0.1	1	no
Oil and Grease	mg/L	<5.1	<5.2	5	50	no
Phenols, Total	µg/L	<4.9	<4.9	50	500	no
Sulfate as SO_4^{2-}	mg/L	278	4380, 3900	none	none	n/a
Sulfide as S^{2-}	mg/L	0.15	<0.05	1	10	no
Sulfite as SO_3^{2-}	mg/L	<2.0	<2.0	none	none	n/a
Surfactants	mg/L	NR	NR	none	none	n/a
METALS (AS TOTAL RECOVERABLE - UNLESS SPECIFIED):						
Aluminum	µg/L	1310	217	200	2,000	no
Antimony	µg/L	<1.0	<1.0	20	200	no
Arsenic	µg/L	2.5	4.4	10	100	no
Barium	µg/L	242	40.1	200	2,000	no
Beryllium	µg/L	<0.5	<0.5	5	50	no
Boron	µg/L	330	3300, 3070	100	1,000	yes #010
Cadmium	µg/L	<0.5	<1.0	5	50	no
Chromium	µg/L	5.2	<1.0	10	100	no
Cobalt	µg/L	<5	5.1	50	500	no
Copper	µg/L	4.2	1.2	25	250	no
Iron	µg/L	1190	205	100	1,000	yes #003
Lead	µg/L	<1	<2	50	500	no
Magnesium	µg/L	22100	254000, 161000	5,000	50,000	yes #010
Manganese	µg/L	51.6	3970	15	150	yes #010
Mercury	µg/L	<0.2	<0.2	0.2	2	no
Molybdenum	µg/L	<20	322	10	100	yes #010
Nickel	µg/L	2.4	50	40	400	no
Selenium	µg/L	2.3	19.8, 45	5	50	no
Silver	µg/L	<0.5	<1.0	10	100	no
Thallium	µg/L	<1	<2	10	100	no
Tin	µg/L	<50	<50	30	300	no
Titanium	µg/L	44.4	<10	5	50	no
Zinc	µg/L	<10	<10	20	200	no

NR not reported, believed absent
* Addressed by 40 CFR 423
< Reported below quantifiable analytical limits

For each parameter, group of parameters, or outfall treatment process, the facility will summarize the relevant factors below in facility-specific (or waste-stream specific) case-by-case TBEL development. The permittee will supply the required information to the department so a technology based effluent limitation can be applied in the permit if applicable.

- ✓ Outfalls #003 and #010 were dip-sampled as they rarely discharge although they have allowance to discharge. Therefore, the dip samples may not be representative of the actual discharges.
- ✓ The second value in the TBEL analysis for outfall #010 is from a discharge occurring the second quarter, 2022. The discharge sample is much more representative of operations therefore the discharge value is used to determine POCs.
- ✓ This permit identifies several pollutants as 10x above baseline therefore an additional submission is required for these listed pollutants.

Nation-Wide Site Specific Evaluation Requirements
For BPT Requirements (all pollutants)

1. Age of equipment and facilities involved
2. Process(es) employed
3. Process changes
4. Engineering aspects of the application of various types of control techniques
5. Non-water quality environmental impact including energy requirements
6. Total cost of application of technology in relation to the effluent reduction benefits to be achieved from the technology

For BCT requirements (conventional pollutants)

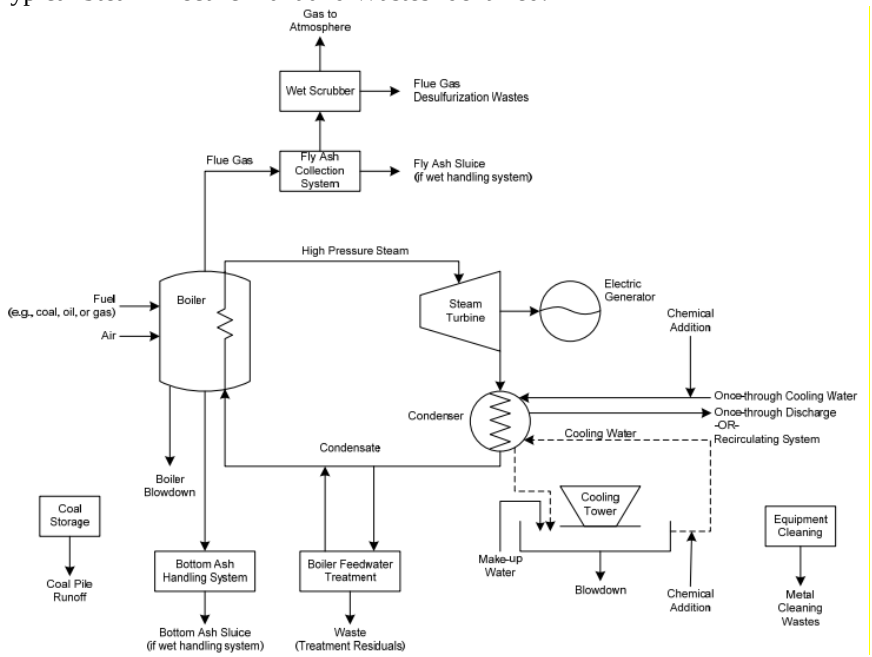
- Items 1 through 5 in BPT; and
- Reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits
- Comparison of the cost and level of reduction of such pollutants from the discharge of POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources

For BAT requirements (toxic and non-conventional pollutants)

- Items 1 through 6 in BPT; and
- The cost of achieving such effluent reduction

TBEL SUBSECTION 3. Non-Numeric Technology Evaluations
It could be argued, because once through cooling was considered under BPT through 40 CFR 423.12(b)(6), additional review for this wastewater stream is not required by the department. However, the permit writer has noted additional technologies and methodologies of control per CWA §316(a) and (b) for thermal discharges and intake structures are available, and are therefore described below. Only unit 1 is considered in this analysis, because unit 2 uses cooling towers.

Typical Steam-Electric Plant and Wastes Identified:



Combusting coal in steam electric boilers produces a residue of noncombustible fuel constituents, referred to as ash. Depending on the boiler design, as much as 70 to 80 percent of the ash from a pulverized coal furnace will consist of very fine particles that are light enough to be entrained in the flue gas and carried out of the furnace. This portion of the ash is commonly known as fly ash. The remaining 20 to 30 percent of the heavier ash that settles in the furnace or dislodged from furnace walls is collected at the bottom of the boiler and is referred to as bottom ash. Certain boiler designs, such a cyclone boilers, will produce relatively small amounts of fly ash, on the order of 20 to 30 percent, and upwards of 70 to 80 percent bottom ash.

Bottom ash was historically hydraulically conveyed (i.e., sluiced with water) to an ash pond. However, this facility has removed all ash from the historical ash pond, and now operates a landfill onsite for all ash products. In dewatering systems, the hot bottom ash drops to the bottom of the furnace where it is quenched in a water-filled hopper. The ash sent to a dewatering bin is separated, then sent to a landfill. Quench water is recycled.

Once-through cooling water is the largest volume wastewater discharge at coal-fired power plants across the nation. EPA's data request obtained information on once-through cooling water flows from 15 plants. The once-through cooling water flow rates at these plants ranged from 178 to 1,860 million gallons per day (MGD), with an average discharge rate of 720 MGD. Recirculating cooling water systems minimize the amount of water withdrawn from waterbodies by steam electric plants. On average, recirculating cooling water systems reduce the cooling water flow rate between 92 and 95 percent, compared to once-through cooling systems, depending on the water source. According to information obtained through the EPA data request, the average cooling tower blowdown flow rate (for 16 coal-fired power plants and 39 recirculating cooling water systems) is 37.7 MGD. The recirculating cooling water flow rates for these plants ranged from 0.89 to 512 MGD.

The cooling water system at Iatan Generating Station Unit 1 uses nearly all of the intake water for non-contact cooling. The only other use of the withdrawn water is for spray washing the traveling water screens (TWS). Spray wash water is siphoned from the downstream side of circulating water pumps.
The water is screened to removed debris and that small portion of water, heavy with sediment, is returned to the river. The remaining wash water is sprayed on the TWS screen panels and either falls into the intake bay or is collected in the debris trough and returned to the river. There are three spray wash pumps with a rated capacity of 2.6 MGD. However, only two of the pumps operate at a time, corresponding to the two–pump operation of the circulating water pumps. The two pumps supply water to spray four of the TWSs operating concurrently with the circulating water pumps. The approximate volume of spray wash water is 5.2 MGD. This represents less than one percent of the design intake flow (DIF) used for a purpose other than direct use for non-contact cooling. The remaining portion of the intake volume is piped directly to the condensers or the auxiliary cooling water heat exchangers for non-contact cooling.

Iatan intake averages 395 MGD, the Design Intake Flow (DIF) is 536 MGD. The department requires all facilities utilizing high-draw pumps to register with the state, see MAJOR WATER USER in Part III of this fact sheet.

Several best management practices and treatment technologies are available to reduce the discharge of chlorine and other biocides from steam electric plants. The 1982 Development Document describes the following four biocide management practices in use at steam electric plants for once-through and/or recirculating cooling systems [U.S. EPA, 1982; UWAG, 2006]:
1. Low-level biocide application. Perform optimization study to determine minimum amount of biocide needed to control biofouling;
2. Natural decay of total residual oxidants (TRO)/free available oxidants. Isolate (i.e., shut off) blowdown from cooling system after biocide application until the biocide has naturally decayed to an acceptable level;
3. Dechlorination (Dehalogenation). Add reducing agent, typically sulfur dioxide (could also be sodium thiosulfate), to the cooling water stream prior to discharge to consume the oxidizing biocide present; and
4. Mechanical cleaning. Clean the condenser tubes using a mechanical operation (e.g., circulate oversized sponge rubber balls through the condenser tubes) instead of using biocides, or to allow for reduced use of biocides

- ✓ This permit has numeric limitations for chlorine (oxidants) and biocides. This permit does not indicate which method is required to be used to meet the numeric limits, only that the numeric limits are met at all times; further technology evaluation is not required under CWA §402(a)(1)(B).

Coal-fired power plants typically receive the coal via train or barge; however, depending on the location of the mine, trucks may also be used to transport the coal to the plant. The coal is unloaded in a designated area and conveyed to an outdoor storage area, referred to as the coal pile. Power plants generally store between 25 and 40 days-worth of coal in the coal pile, but this varies by plant. Some coal-fired plants may operate more than one coal pile depending on the location of the boilers and whether different types of coal are used or blended. Rainwater and melting snow contacting the coal pile generates a waste stream that contains pollutants associated with the coal, referred to as coal pile runoff. The quantity of runoff depends upon the amount of precipitation, the physical location and layout of the pile, and the extent to which water infiltrates the ground underneath the pile. Coal pile runoff is usually collected in a runoff pond during or immediately after times of rainfall. This waste-stream has been enumerated in the ELG at 40 CFR 423.12, therefore, will not undergo further TBEL scrutiny in this permit.

- ✓ The Iatan facility is typical of the above operations.

Coal combustion residues/residuals (CCR) comprise a variety of wastes from the coal combustion process, including fly ash, bottom ash, boiler slag, and FGD solids (e.g., gypsum and calcium sulfite). CCR may be stored at the plant in on-site landfills or surface impoundments. Leachate is the liquid that drains or leaches from a landfill or an impoundment. The two sources of landfill leachate are precipitation that percolates through the waste deposited in the landfill and the liquids contained within the CCR when it was placed in the landfill. Surface runoff is precipitation that contacts the landfill wastes and flows over the landfill. Landfills typically have some sort of stormwater drainage to minimize the amount of rainwater entering the landfill.

- ✓ Iatan is permitted to discharge leachate; see outfall #010, and the management of the leachate is typical of most utility waste landfill operations. This facility rarely discharges leachate.

Low volume wastes, as defined by the effluent guidelines, include a variety of waste streams, such as wastewater associated with wet scrubber air pollution control systems, ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. See 40 CFR 423.11 for a full definition. The 1982 ELG Development Document presents information on the generation and characteristics of boiler blowdown, boiler feed water treatment wastewaters, drains, and spills. For example, the 1982 Development Document describes that boiler blowdown can be discharged continuously or intermittently to control the build-up of suspended and dissolved solids in the boiler water and that the average blowdown flow rate is 33,000 gpd/plant (for 231 coal-fired power plants) [U.S. EPA, 1982]. Low volume wastes are typically combined with other plant wastewaters for treatment, often in settling ponds. In some cases, low volume wastewaters can be recycled within the plant. One data request plant reported using untreated low volume wastewater as a source for bottom ash sluicing and another reported using it as a source for FGD make-up water. Some plants also report reusing settling pond effluent from systems that receive a variety of wastewaters including ash transport water and low volume wastes.
Additionally, the 2020 revision of 40 CFR 423 incorporates allowable discharge of an engineered percentage of bottom ash transport wastewater and flue gas desulphurization (FGD) wastewater.

- ✓ Iatan is authorized to operate under the Clean Air Act; permitted under RSMo 643.
- ✓ Low volume wastes are combined, treated in the basin serving outfall #003, and is recycled as necessary. Outfall #003 rarely discharges.
- ✓ The facility did not report the need for an allowance to discharge bottom ash transport water or FGD wastewater under this regulation.

Permitted Feature #009 is the intake structure, discussed below. There are no numeric limitations on the intake to be evaluated. Outfall #001, for single pass condenser cooling water is discussed below. Any pollutants found in the discharge, aside from temperature, are directly withdrawn from the Missouri River and discharged unchanged to the same body of water.

Stormwater runoff is not subject to individual numerical technology evaluations as shown below at this time per 10 CSR 20-7.015(1)(C), although benchmarks, a numerically-driven technology-based implementation of controls, are available to facilities. Individual analysis is not being performed at this time because the department has, over time, established minimum controls for basic parameters (TSS and oil and grease) in many operating permits. These stormwater parameters, when controlled effectively, and in conjunction with frequent observational patterns (permit and SWPPP-driven inspections), allow the department to ensure protection of receiving waters. Additionally, federal regulations require the department perform a reasonable potential analysis for all stormwater discharges; because the stormwater at this site has no reasonable potential to cause or contribute to in-stream water quality exceedances, the department has authority to implement operational controls and have the facility take responsibility for maintaining minimum best management practices. See more under STORMWATER PERMITTING in this part; Part III of the fact sheet.

TBEL SUBSECTION 4. Technology Requirements Review
Evergy provided a comprehensive report to comply with 40 CFR 122.21(r) application requirements for cooling water intake structures with the application for permit renewal as was required in the special conditions implemented in the previous permit. The conditions necessary for any additional requirements will again be included in the special conditions section of the permit.

As with all technology requirements, effluent guidelines do not require facilities to install the particular technology identified by EPA as the best available technology; however, the regulations do require facilities to achieve the regulatory standards, typically defined numerically, which were developed based on a particular model technology. Because the EPA has not developed minimum technological temperature or entrainment requirements, the department, as agent for the EPA, is required to develop an individual assessment of the technology and implement the technology requirement in the operating permit.

CWA §316(b) requires regulators establish standards for cooling water intake structures reflecting the "best technology available for minimizing adverse environmental impact." However, the statute is silent with respect to the factors the permit writers should consider in determining BTA, but courts have held that §316(b)'s reference to CWA §§301 and 306 is an invitation to look to the factors considered in those sections while establishing standards for §316(b). (The factors specifically delineated in CWA §§301 and 306 include: cost of the technology, taking into account the age of the equipment and facilities, process employed, engineering aspects associated with a particular technology, process changes, and non-water quality environmental impact, including energy

requirements.) These conditions are similar to the factors listed in the above BAT requirements implemented for thermal discharges. Here, the department is establishing the basis for the rationale as required by 40 CFR 125.98(f)

When considering such factors, the department is not bound to evaluate these in precisely the same way the EPA considers them in establishing effluent limitations guidelines under CWA §304. As the Supreme Court noted, given the absence of any factors specified in §316(b), administrative directors have much more discretion in its standard setting under section 316(b) than under the effluent guidelines provisions. Therefore, the statute bestows the department with broad discretion in determining the "best" technology "available" for minimizing adverse environmental impact. As the Supreme Court further explained, under §316(b), the "best" technology "available" may reflect a consideration of a number of factors and "best" does not necessarily mean the technology purported to achieve the greatest reduction in environmental harm the facility can afford. Rather, the "best" (or "most advantageous" in the court's words) technology may represent a technology which *efficiently* reduces harm.

Therefore, §316(b) requires the EPA to establish a standard to minimize impingement and entrainment—the main adverse effects of cooling water intake structures not otherwise addressed by the other sections of the CWA (e.g., thermal discharges). Several important considerations underpin EPA's decisions. First, its BTA determination should be consistent with, and reflective of, the goals of CWA §101: "to restore and maintain the physical, chemical, and biological integrity of the Nation's waters" with the interim goal of "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water."

Second, the 2011 Executive Order (E.O.) 13563 directs EPA and other Federal agencies (and states tasked with implementing federal regulations) to identify and use the best, most innovative and least burdensome tools for achieving regulatory ends. In its regulatory actions, agencies "must take into account benefits and cost, both quantitative and qualitative," and to the extent permitted by law, only promulgate regulations that are based on "a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify)."

In selecting a regulatory approach, agencies must tailor regulations to impose the least burden on society and, in choosing among regulatory alternatives, select "those approaches maximizing net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity)" to the extent permitted by law.

It is important to mention, that while technology beyond what is necessary to consider to protect water quality is reviewed, it is also reviewed in the context of Environmental Justice (EJ). Simply, EJ is a federal policy that asks permitting authorities to consider additional requirements, implemented though permits, to protect overburdened or disadvantaged populations. The policy is not a regulation, and therefore cannot be implemented as such. In the case of power generating facilities, any additional requirements identified in the permit will be passed on to ratepayers and those ratepayers will be further disadvantaged via increased electrical costs.

In 1974, the EPA promulgated initial federal regulations for the Steam-Electric category in Federal Register Vol. 39 No. 196, October 8, 1974. This ELG required facilities to install or retrofit to closed-cycle cooling by July 1, 1981. On July 16, 1976, the Fourth Circuit Court of Appeals remanded the thermal limitations of the 1974 regulations under *Appalachian Power v. Train* [545 F.2d 1351 (4th Cir. 1976)]. Cause for the cooling standards removal was cited by petitioners as restrictively rigid, and because petitioners did not believe the EPA correctly weighed societal costs against societal benefits for requiring closed-cycle cooling. Therefore the 1982 reissued ELG removed content regarding thermal moderation requirements. No such cooling standard was sought in future ELGs, transferring the regulatory burden to the issuing authority to decide if any additional cooling controls are warranted on a site-specific basis. By this remand, the regulatory burden of closed cycle cooling was determined to not be applicable to all facilities, and is therefore not a foundationally required technology at this facility.

As stated in the June 11, 2012 notice of data availability (NODA) and the 2014 CWA 316 Rule, EPA does not intend for facilities to install closed-cycle cooling solely for the purpose of meeting the impingement (IM) requirements either. In fact, EPA expects all facilities could comply with IM requirements without relying on retrofitting to closed-cycle cooling. If a facility chooses to comply with the BTA IM standard by installing and operating traveling screens, the screens must meet the definition of modified traveling screens provided at § 125.92(s). These may include, for example, modified 3/8 inch screens with a fish handling and return system, dual flow screens with smooth mesh, and rotary screens with fish returns such as vacuum pumps. EPA based the regulatory definition on the commonly found features of modified traveling screens used in developing the BTA impingement mortality standard.

Impingement requirements, for either the specified screens or system of technologies, a two year study must be completed in which biological data collection is used to make site-specific adjustments to screens or the combination of technologies in order to optimize performance at that facility per 40 CFR 122.21(r). Those optimal operating parameters then become permit conditions. For facilities that have already installed traveling screens or the technologies associated with the system approach, EPA has combined the two year biological study with the other permit application and rule requirements for biological data collection, including the Source Water Baseline Biological Characterization Data. In this manner, EPA is establishing a consistent set of biological study requirements, with an overall reduction in the burden of the required level of biological monitoring.

Generally, two basic approaches can be used to reduce impingement mortality and entrainment concurrently. The first approach is flow reduction, where the facility installs a technology or operates in a manner to reduce or eliminate the quantity of water being withdrawn. Closed cycle cooling is discussed elsewhere. Reduced volumes of cooling water produce a corresponding reduction in impingement and entrainment and, therefore, reduced impingement mortality and entrainment mortality. It should be noted that, at electric generators, flow reduction could be achieved, perhaps most effectively, by installing more energy efficient production, thereby requiring less cooling per unit of electricity generated. The second way to reduce impingement and entrainment together is to install technologies or operate in a manner that either (1) gently excludes organisms or (2) collects and returns organisms without harm. Exclusion technologies or practices divert those organisms that would have been subject to impingement and entrainment away from the intake. Collection and return technologies are designed to allow impingement to occur but possibly preventing impingement mortality. Although not available to all facilities, two other approaches to reducing impingement and entrainment are (1) relocating the facility's intake to a less biologically rich area in a waterbody, and (2) reducing the intake velocity.

The most frequently employed exclusion and collection technologies at Missouri facilities are traveling screen systems. These systems only exclude organisms of a particular size, depending on the screen mesh weave chosen. Conventional traveling screens were not designed initially with the intention of protecting fish and aquatic organisms that become impinged against them. The organisms were often handled in the same manner as debris on the screens. Marine life can become impinged against the screens because of high intake velocities that prevent their escape. Prolonged contact with the screens can suffocate organisms that are unable to escape or result in descaling injury and latent mortality. Organisms that survive initial impingement and removal are not always provided with a specifically designed mechanism to return them to the waterbody and are often handled in the same way as other screening debris, like leaves and trash: this debris collected on the screen is typically removed with a high-pressure spray and deposited in a dumpster or debris return trough for disposal. Exposure to high pressure sprays and other screening debris can cause significant injuries that result in latent mortality or increase the susceptibility to predation or re-impingement. Screens are historically rotated periodically on a set time interval or when the pressure differential between the upstream and downstream faces exceeds a set value. Screen rotation in the future is required to be maintained at a sufficient velocity to safely return aquatic organisms unharmed to the waterbody.

Conventional traveling screen systems can be modified to reduce impingement-related mortalities with a collection and return system. In its simplest form, these systems are composed of a return flume or trough with sufficient water volume and flow to enable impinged organisms to return to the source water. Return systems should be designed to avoid predation and latent mortality while organisms are in the flume, maintain an appropriate water depth in the flume for high survival of the organisms, located at an appropriate elevation to avoid large drops of the organisms back to the surface water (or large hydraulic jumps if the end of the return is below the water's surface), and sited to avoid repeated impingement of the organisms by the intake structure.

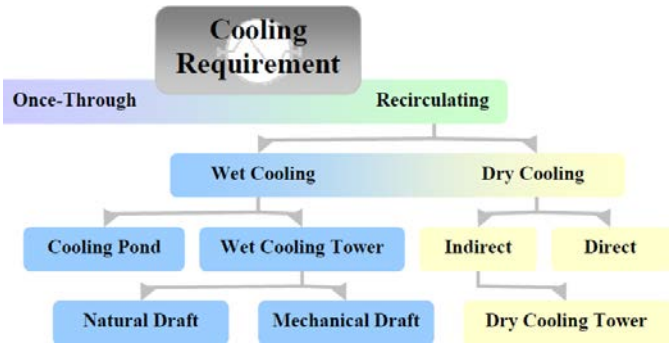
From an assessment of all factors, EPA identified one technology as the best technology available for minimizing the adverse impacts of impingement mortality at existing facilities: modified traveling screens with a fish-friendly fish return. EPA identified no single best technology is available for minimizing entrainment.

TBEL SUBSECTION 5. Site Analysis
(Unit 2 was not evaluated; Unit 2 has closed cycle cooling.)

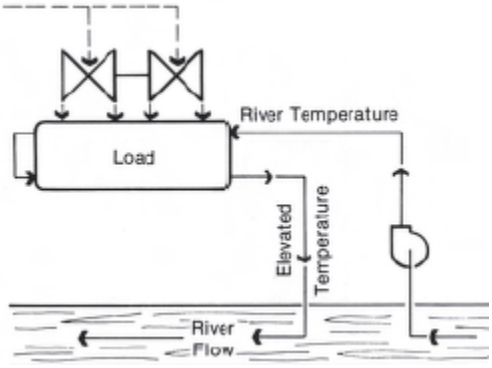
Technology Analysis for Thermal Discharge at Outfall #001, Analysis for Entrainment Processes; for the Intake as Permitted Feature #009, CWA §316(b)

For BAT requirements, the following section is outlined following the requirements found in 40 CFR 125.3(d)(3):
1. Age of equipment and facility;
2. Processes employed;
3. Process changes;
4. Engineering aspects of the application of various types of control techniques;
5. Non-water quality environmental impact including energy requirements;
6. Total cost of application of technology in relation to the effluent reduction benefits to be achieved from the technology, and the reasonableness of the cost of achieving such effluent reduction;
7. And any actions the department deems necessary per CWA §402(a)(1)(B) and 40 CFR 125.3(c)(2)(ii).

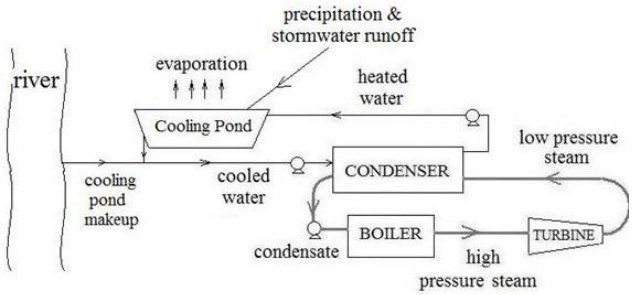
VARIOUS TYPES OF COOLING TECHNOLOGIES



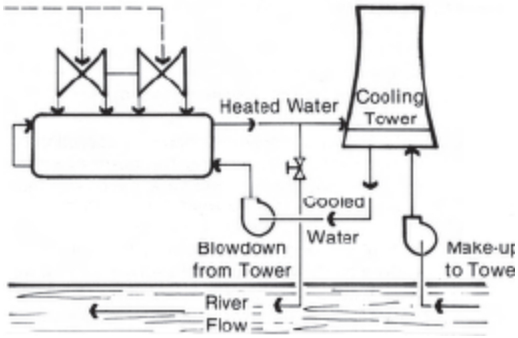
Once Through Cooling



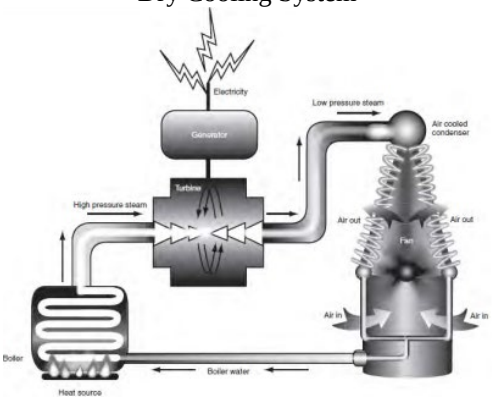
Cooling Pond



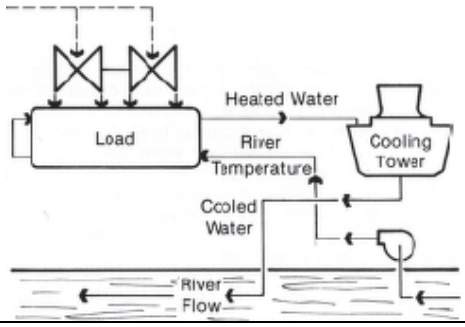
Closed Cycle Cooling Tower



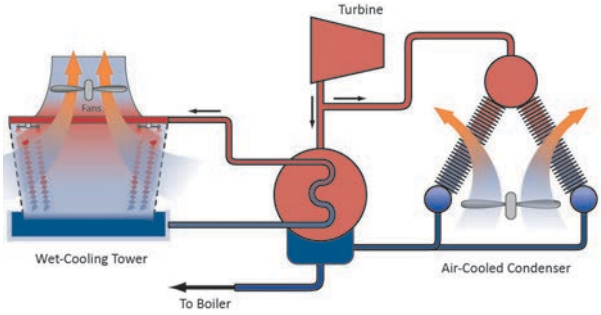
Dry Cooling System



Helper Cooling Tower System



Hybrid Cooled System



BAT Requirement #1: Age of Equipment and Facility:
Iatan Unit 1, which began operating in 1980, is a 750 MW gross (700 MW net) coal-fired, steam-electric generating unit that withdraws water from the Missouri River for once-through condenser cooling. The Unit 1 steam generator is a Babcock & Wilcox (B&W), sub-critical, drum-type, wall-fired pulverized coal boiler, which operates at a design flow of 4,725,000 pounds per hour at nominal of main steam conditions of 2,400 pounds per square inch gauge (psig) and 1005 oF. The boiler has a single reheater, which

also delivers steam at 1005 oF. The boiler was designed for and continues to operate on Powder River Basin (PRB) sub-bituminous coal. Coal is supplied to the boiler by seven B&W MPS-89 coal pulverizers. Each pulverizer feeds a row of eight burners. There are four rows of burners on the front wall and three rows on the rear wall, for a total of 56 burners. Start-up fuel is no. 2 fuel oil.

The Unit 1 turbine-generator is a General Electric (GE) tandem-compound turbine, with one high pressure (HP), one intermediate pressure (IP) and two double-flow low pressure (LP) turbines coupled together to drive a single generator, rated at 825 MVA. The HP and LP turbines were replaced in 2007 and 2017, respectively, providing improved efficiency over the original unit design.

BAT Requirement #2: Process [Currently] Employed
The current processes employed is once-through cooling, this confers no treatment for entrainment or heat. Cooling water for Unit 1 is supplied to the condensers via the plant's single CWIS. The CWIS consists of an enclosed cast-in-place concrete structure constructed near the bank of the Missouri River. The invert elevation of the CWIS is 742.00 mean sea level (msl). Normal water level is reported as 764.00 msl and the low water level is 757.00 msl. The CWIS is divided into six separate intake bays that are 10-feet, 2-inches wide. Each bay includes an external bar rack to screen heavy debris at the river. The plant has the ability to direct warmer, post-condenser, cooling water to the CWIS near the bar rack via a recirculation piping system to help with de-icing during the winter. Bulkhead gates are located downstream of the bar rack in the intake bay. Each of the six intake bays is equipped with a Geiger MultiDisc traveling water screens (TWS). The Geiger screens have panels with 3/8-inch diameter perforations to block smaller debris and are equipped with a spray wash system to remove debris. The spray wash water and debris are returned to the river downstream of CWIS via an open trough. These are not considered fish-friendly returns. Screen wash water is provided from the downstream side of circulating water pumps 1A and 1C. The spray wash water is strained to remove sand and very fine debris to prevent clogging the spray wash nozzles. At the CWIS two intake bays combine into a single pump well for a total of three wells. Each well is equipped with a circulating water pump. The three centrifugal pumps are identical units, each having a 186,000-gpm capacity. Motors are 2000-HP that are supplied from 6.9-KV busses. The auxiliary pump has a capacity of 24,000-gpm. Although the CWIS is equipped with three circulating water pumps the design intake flow for the plant is for operation limited to two–pump operation. The third pump offers redundancy if another pump fails or is out of service. Water from the three pumps is combined into a single pipe that carries cooling water to the Station's condensers or the auxiliary heat exchangers.

BAT Requirements #3, #4. #5, #6 and #7.
These are discussed together below for each technology.

Requirement #3: Process changes. The consideration of process changes modified to improve the system. This includes changes from operations and maintenance to a complete retrofit of the entire system.

Requirement #4: Engineering Aspects of Application of Various Types of Control Techniques. While the potentially available cooling technologies may be employed at any given facility, are generally well established, their suitability and successful application at individual facilities is strongly dependent on the site specific conditions associated with each facility. Entrainment technologies also vary by facility and can be tied to some cooling technologies.

Requirement #5: Non-Water Quality Environmental Impacts Including Energy Requirements. All cooling and entrainment technologies have non-water quality environmental impacts, including impacts to energy requirements. Because impacts at Iatan would entail a retrofit, the non-water quality impacts would include changes to the existing system, which could result in energy production loss.

Requirement #6: Total cost of application of technology in relation to reduction in effluent. The total cost of the application of the technology evaluates the 1) benefits of reduction of heat in the effluent and entrainment at the intake, 2) the social benefits such as fisheries, 3) the capital and construction costs, 4) the costs in loss generation and electricity for sale, and 5) the overall environmental impact. The overall environmental cost needs to include the cost of additional chemicals, impacts to waste streams being handled, and impacts to the air quality. The reasonableness of the costs associated with the technology. The reasonableness of the cost of the application of each technology based on the level of heat removal and entrainment reduction (combined harm reduction) and the societal and monetary cost of achieving the harm reductions, and the comparison of all factors together.

Requirement #7: Any additional requirements as seen necessary by the permitting authority would include additional confirmatory sampling, or other submission requirements not otherwise required by regulation.

The technologies discussed below are established technologies throughout the country; however, the construction and establishment of any technology requires a detailed engineering evaluation. The reasonableness of the application of the technology needs to account for the ability of the technology to be constructed and used on site and to produce a benefit of removing the parameter of concern (heat) and reduction of entrainment. The installation of the technology (or a mix thereof) must be reasonable, exhibiting a logical and cost effective solution because costs of any additional technologies would be passed on to rate payers.

Single Pass Cooling:
Once-through systems are less expensive to build than closed cycle systems. Single pass systems have a simpler infrastructure requirement (than construction of a cooling tower or cooling pond) and maintenance and operational upkeep are generally cheaper throughout the plant life. Once-through systems consume less water than closed cycle cooling systems because once-through systems withdraw a greater amount of water but most of it is returned to the water source.

Once-through cooling systems take water from nearby sources, such as the Missouri River, circulate it through pipes to absorb heat from the steam in systems called condensers, and discharge warmer water to the local source. Once-through systems were initially the most common cooling technology because of their simplicity, efficiency, low cost, and the possibility of sighting power plants in places with abundant supplies of cooling water. Once through cooling provides the best power plant efficiency of the alternatives, because the source water tends to be the lowest temperature heat sink available for most of the year.

Non-water quality impacts include the impact of the intake and the discharge on aquatic communities. Intake impacts are to be evaluated under CWA Section 316(b). While once-through cooling withdraws high volumes of Missouri River water, it returns nearly all of those withdrawals to the river. Once-through cooling is the existing technology in use. This is what unit 1 was constructed with and the cost for this technology is the cost to continue operating and maintaining the system.

There would be no additional monetary or societal costs or societal or environmental benefits associated with this technology; this is the technology currently employed at the site.

Water quality standards for thermal discharges are established in Missouri's regulations at 10 CSR 20-7.031(5)(D). These standards apply to this facility. There are no Missouri water quality limits or standards established for entrainment.

Cooling Ponds:
Cooling Ponds are an established technology in Missouri for plants located in watersheds with small streams able to be dammed to create a cooling pond, such as in Springfield or outside Montrose, MO; both of these facilities have since closed however. Cooling ponds typically consist of artificially constructed bodies of water which may be created by damming a natural stream, utilizing an existing impounded body of water, or creating a new impoundment. Such is not the case in the Missouri River floodplain.
The Missouri River is controlled by the US Army Corps of Engineers and establishment of a large dam to operate as a cooling pond would jeopardize other uses of the Missouri River including navigation, flood control, and the propagation of species. Harpst Chute is a small stream located near the power plant; however damming it to create a cooling pond is not feasible as it is as the watershed draining to the stream is not large enough to support a cooling pond necessary to serve the facility's water needs. Creation of a cooling pond would require retrofitting the existing plant's piping, controls, and operations. Additional permitting would be required from the department's Water Resources Center and the US Corps of Engineers 401/404 program. Portions of Labadie Creek would need to be excavated and covered with lake water thus eliminating the designated uses of impacted portions of water of the state. Water requirements for pond cooling systems are typically higher than tower systems and are much more variable, they are operated based on ambient temperatures which dictate if they are operated as systems resembling recirculating closed systems, or a once-through system.

The condenser water is fed back into the cooling pond or lake, cooled through evaporation and then typically recycled to the condenser. While such ponds and lakes are established technologies at historic Missouri power plants, they have not been established for power plants located in the Missouri and Mississippi River floodplains. To be an effective cooling component, ponds must be sized at between 0.5 to 4 acres/MW depending on the ambient air temperature. Using this range, a cooling pond for Iatan unit 1 at 750 MW, would need to be about 3,684 acres to address the cooling needs of unit 1 when the air temperatures are 85 °F.

The ash pond was reclaimed, and all of the coal ash was removed to the landfill. The historical ash pond holds water, but does not have a certified or special liner designed to hold water. The old ash pond area is only about 110 acres. While a cooling pond would be a cheaper alternative to cooling towers, the use is not a socially supported alternative because significant additional land would need to be commandeered to add the necessary additional acreage and due to normal flooding regimes, the cooling pond, if situated in the alluvial till, would be flooded certain times of the year. When a basin floods, operational changes would need to occur. This analysis also does not include the piping retrofits which would be necessary as an additional capital cost. According to the facility's own webpage, Iatan Reserve Wetland and Lewis & Clark Wetland is near the Iatan Generating Station where Evergy restored 20 acres of wetlands, 20 acres of uplands and 10 acres of forest and swamp. The habitat is home to trumpeter swans, peregrine falcons and other rare birds and wildlife species. In the winter, this area of the river is home to one of the largest concentrations of bald eagles in Missouri. To revert this restored land to industrial use would not benefit the bird populations. See COOLING WATER INTAKE STRUCTURE (r)(10) for additional information about this infeasible technology.

Closed Cycle Cooling Systems:
Recirculating systems only withdraw enough water needed to maintain the required water level of the system, and consume water through evaporation. To build a wet, dry, or hybrid cooling system, additional water treatment would need to occur for unit 1 to clean the Missouri River intake water to a cleanliness appropriate for recirculation through the plant. The retrofit installation of closed-cycle

cooling at a plant originally built with once-through cooling is complex. It is not simply a matter of installing a cooling tower in the existing circulating water system for several reasons. Often the plan is to retain as much of the original piping as possible: the existing condenser, circulating water flow rate, and as much of the existing circulating water pumps, lines, and intake/discharge structure.

Wet closed cycle cooling systems are designed to minimize the amount of water withdrawn from the river. In a wet closed cycle cooling system, condenser water still exchanges heat with water in a heat exchanger, however the cooling water is recycled between a cooling tower and a heat exchanger until system chemistry dictates the concentrations of solids are too high, and are discharged in a "blowdown" event. In this system, the cooling water is cooled by evaporating a percentage of the water to the environment and requires make-up water to account for the consumed water. The make-up water would come from the Missouri River. Wet closed cycle cooling systems consume much more water than once-through cooling systems as the entire energy exchange is through evaporation of the water, however, wet closed cycle cooling systems withdraw much less water than once through cooling systems. Wet closed cycle cooling systems can use natural draft or mechanical draft to accomplish cooling.

Dry closed cycle cooling systems rely on air flow in cooling towers rather than water to cool the steam produced during electricity generation. Steam from the boiler is routed through a heat exchanger. Air is blown across the heat exchanger to condense the steam back into liquid, which is then returned to the boiler and is reused. Plants using dry cooling withdraw and consume a small amount of water to maintain and clean the boiler, including replacing boiler water lost through evaporation. Dry cooling has a higher capital cost than wet cooling, reduces the overall efficiency of the power plant, and does not operate effectively at high ambient temperatures. Installation of dry cooling is more common on new plants rather than as a retrofit to an existing plant, this option is more complex and expensive. Existing plants originally designed for once-through cooling are equipped with older turbines with much more stringent limitations on exhaust pressure than those for modern turbines designed for use with dry cooling. Dry cooling towers are not a viable alternate technology for Iatan.

Hybrid cooling systems are a combination of the wet and dry cooling systems, where a water condenser runs with an air-cooled condenser. This process combines-two established cooling processes, uses the advantages of dry and wet cooling by reducing water consumption compared to wet cooling, and does not require an air cooled condenser as large as may otherwise be needed.

The site-specific considerations are dependent on a number of variables, including:

1. A suitable location with enough room for the tower must be found on or adjacent to the plant site. This may place the tower far from the turbine hall and require very long circulating water lines; energy expenditure from shuttling water would decrease available energy for output to customers.
2. The discharge head from the circulating water pump must be increased in order to get the water to the top of the cooling tower and to overcome any additional head loss in the new circulating water lines. Increasing water pressure also requires additional energy. This additional head may be obtained by replacing or modifying the existing pump to obtain higher discharge head. This would involve diverting the condenser discharge flow from its current route, installing a new line to the cooling tower and a new return line back to the existing intake. Additionally, new make-up and blowdown lines and pumps would need to be installed as described above for new installations.
3. The existing inlet and discharge structures were designed for much higher flows than necessary for a closed-cycle system. This may lead to silting or fouling and will require either they be modified to restrict the flow area or be replaced with smaller, more suitable structures.
4. For cooling towers, the pressure in the condenser water boxes and any remaining discharge lines from the existing condenser will be subject to much higher pressure. This may require reinforcement or replacement in order to avoid leakage or damage.
5. Wet and hybrid cooling systems introduce additional chemicals to the system to prevent fouling and scaling of the system. While heated water discharges would decrease, additional heat would be released to the atmosphere and new pollutants of concern would be introduced to waters of the state.

Entrainment losses could be reduced most significantly by conversion to closed-cycle cooling. However, this option requires disproportionately high capital and operating costs, and would slightly reduce plant generation capacity. Some of the evaluated cooling tower types were not considered feasible due to significant difficulties associated with floodway impacts, environmental permitting, and regional atmospheric conditions or were considered feasible but not practical due to challenges associated with construction and operation. Ultimately, mechanical draft cooling towers were found to pose the fewest challenges at the Iatan Generating Station. The capital cost to retrofit Unit 1 at Iatan Generating Station to closed-cycle cooling was estimated to be approximately $260 million in 2021 dollars with annual Operations & Maintenance (O&M) costs of approximately $4.6 million. The present value of total social costs (compliance costs, power system costs, and government regulatory costs) to retrofit to a closed-cycle cooling system were estimated over an 8-year period to be approximately $228 million using a three percent discount rate and $155 million using a seven percent discount rate.

Installation of fine-mesh modified TWS at Iatan Generating Station would require an expansion of screen surface area to maintain the existing cooling water flow rate, plant generation capacity, and existing through-screen velocity. Additionally, impacts on plant reliability would likely occur from a restricted cooling water system (CWS) flow, as a result of screen failure from debris overloading due to natural conditions within the Missouri River. Iatan Generating Station has a history of facing flooded conditions with extremely

heavy debris loads that have caused significant operations and maintenance issues with the station's existing 3/8-inch TWSs. Installation of fine mesh < 2.0 mm would substantially compound these issues and was considered impractical due to impacts on plant reliability from screen clogging. The installation of narrow-slot submerged cylindrical wedgewire screens was also found to be impractical at Iatan Generating Station due to the proximity to the navigational channel and debris loading. Thus, only modified thru-flow TWSs with 2.0 mm fine-mesh panels installed in the existing CWIS were considered along with modifications to the CWIS to accommodate a multi-stage screening system. The three-stage screening system would consist of a series of varying sized bar grills (e.g. 6 inch and 1 inch) with mechanical trash rakes to remove the accumulation of heavy debris. The existing CWS pump motors would also need to be changed to Variable Frequency Drive (VFD) motors for this alternative. The estimated total project capital cost to install modified thru-flow TWS with 2 mm fine-mesh screen panels with these modifications and a fish return system was approximately $27 million with a 2025-2035 O&M cost (NPV) of approximately $1 million. The present value of total social costs under this option was estimated to be approximately $31 million using a three percent discount rate and $24 million using a seven percent discount rate for the 11-year period of operation before plant retirement.

Water reuse was considered not feasible at Iatan Generating Station due to the limited sources available which would be insufficient to meet once-through cooling water requirements. The use of an alternative water supply, mainly groundwater, was considered technically not feasible due to the large amount of water required and its impact to the regional aquifer. Other technologies listed in the Rule (e.g., barriers) were deemed not technically feasible at Iatan Generating Station due to the large scale required or the inability of the technology to function correctly in the Missouri River.

Biological benefits were based on the predicted increases in annual fishery yield (in weight) resulting from reduced losses associated with each technology alternative. Separate measures were calculated for species of commercial and recreational fishing importance versus forage species. The estimated annual biological benefits of reduced entrainment for the technology alternatives considered at Iatan Generating Station, defined as increased fishery harvest, ranged from 2,048 to 25,671 pounds (lbs) depending on study year and alternative. Estimated annual biological benefits of reduced impingement for the technology alternatives ranged from 4,814 to 5,082 lbs depending on alternative.

Economic benefits were calculated for four categories: market direct use benefits, non-market direct use benefits, indirect use benefits, and non-use benefits, using standard natural resource valuation methods.
The benefits of each technology alternative were assumed to begin after the Iatan Generating Station's next NPDES permit in 2022, with the installation of the fine mesh screen alternative requiring 36 months and installation of the closed cycle alternative requiring 70 months. Benefits associated with the increased catch by commercial and recreational fishermen were assumed to begin five years thereafter with benefits continuing through the year 2036. Thus, economic benefits associated with the installation of fine-mesh were assumed to be for a period of seven years and for closed-cycle cooling towers for a period of five years to estimate net present value (NPV) using discount rates of three and seven percent. Estimates of the annual economic benefits from reductions in entrainment loss ranged from approximately $16,000 to $83,000 per year, depending on study year and alternative. Estimates of annual economic benefits from reductions in impingement loss were approximately $3,000 for both alternatives. Finally, total annual benefits from reductions in entrainment and impingement combined ranged from just under $19,000 to $86,000 per year across both alternatives and study years. Estimated economic benefits were based upon 2020 values.

Net Present Value (NPV) of combined lifetime benefits of entrainment and impingement reductions over the five-to-seven-year period used for each alternative ranged from slightly under $44,000 to just over $299,000 (based upon 2020 values), depending on study year, alternative and assumed discount rate (three versus seven percent). The lifetime benefits associated with the installation of fine mesh were higher than the installation of closed-cycle cooling towers despite assuming zero entrainment losses for the cooling tower alternative. Differences in lifetime benefits among alternatives were a result of the shorter time period (five years) for benefits to accrue after the installation of closed-cycle cooling towers assuming 2035 as the end of plant life date.

Fine Mesh Screens:
As stated in the Rule, engineering analyses under 40 CFR 122.21(r)(10) must evaluate the potential feasibility of fine mesh screens (≤ 2.0 mm) for entrainment purposes (these screens have no direct effect on heat discharge). Screen technologies provide entrainment protection through exclusion and survivability. Exclusion of an organism is based on the screen mesh dimensions and the size of the organism. Survivability is based on the force with which the organisms are pushed against the screen (through-screen velocity) and the handling characteristics of the system that removes the organism from the screen and returns it to the source waterbody. Survivability can be difficult to evaluate as it is dependent on many variables. Factors for exclusion and survivability play important roles when evaluating entrainment reduction screen technologies.

Installation of fine mesh sizes smaller than 2.0 mm (i.e., 1.0 mm and 0.5 mm) at Iatan Generating Station was considered not feasible. This was based on past plant history, anticipation of debris fouling and screen clogging, maintenance issues, and high potential for impacts on plant reliability. Smaller mesh sizes would result in higher retention rates, but overall improvements in survival would be questionable due to the early life stages of the organisms retained and the high through-screen velocity observed at Iatan Generating Station. While the installation of 2.0 mm fine mesh TWS is considered technically feasible, the exclusion effectiveness or number of

individuals excluded from entrainment that could potentially survive retention was low across a range of species encountered at Iatan Generating Station.

Based on the observed length frequency data of larvae entrained at Iatan Generating Station in 2018 and 2019, the exclusion effectiveness of 2.0 mm fine mesh TWSs was very low (< 2 percent) or low (< 9 percent) for target species except bluegill and common carp, which had only moderate levels of effectiveness. The overall effectiveness of 2.0 mm fine mesh TWSs across target species was low with an annual estimated 0.53 – 3.56 million fish surviving entrainment under this alternative, representing only 3 to 14 percent of the total target species entrainment by 3/8-inch coarse mesh.

There are no Missouri water quality standards established specifically for entrainment of aquatic organisms.

Modified Traveling Intake Water Screens with Fish Friendly Return:
Per 40 CFR 125 Subpart J, the facility is required to choose a method of compliance with the impingement standard, and provide the choice to the permitting authority. The department then assesses the choice, and affirms or denies the choice, and implements the requirement into the permit. As this technology assessment is outlined in 40 CFR 122.21(r) et seq and 40 CFR 125 Subpart J, the best professional judgment outlined by the permit is the BTA decision.

The facility has provided their chosen method of compliance with the impingement standard which is Compliance Alternative 5 (modified traveling screens and fish-friendly return system). The Department agrees this is the best technology for the facility and a compliance schedule is established for implementation. Additionally, the facility will need to rotate the screens constantly, or near-constantly to provide for safe fish return to the river. The facility will need to implement the technology and provide completed optimization, studies at the next renewal to comply with the 40 CFR 122.21(r)(6) impingement mortality reduction standard.

There are no water quality standards established in Missouri specifically for impingement of aquatic organisms.

TBEL SUBSECTION 6. Conclusions
While all information was considered in the decision model for impingement and entrainment technology choices, the following factors were prominently considered.
Deliberating Factor 1.
The Iatan Generating Station has been in operation since 1980; the end of useful life for Unit 1 is expected to occur in 2035. Outfall #001 was constructed as, and continues to operate as, a once-through cooling system. In evaluation of the other heat-reducing technologies available, there are technically feasible options available that could reduce the discharge of heat to the Missouri River and simultaneously reducing entrainment; however those options increase the chemicals in the discharge, release the heat to the atmosphere, decrease energy available for output to customers, and provide operational and maintenance issues. The department may weigh each factor in the BAT determination for technology requirements differently; there is no requirement to weigh societal costs (those such as fishing or swimming) greater than actual costs in dollars to the facility. The Department has determined, the end of life date to be highly weighted in the deciding factors.

Deliberating Factor 2.
In an email dated February 9, 2022, the Service lodged their tentative support of Option 5. “It was stated Evergy recently retrofitted water intake bays with traveling water screens. A subsequent monitoring program conducted in 2018-2019 indicated 80.1 million fish (47.2 million in 2018 and 32.8 million in 2019) were entrained. A large fraction of this entrainment was composed of non-native carp species representing 94.7% and 46.3% for each estimated annual total with 97% of the total classified as larvae. No threatened or endangered fish species were found during the most recent studies. However, the Pallid Sturgeon (*Scaphirhynchus albus*) and Shovelnose Sturgeon (*Scaphirhynchus platorynchus*) are two federally listed fish species known to occur in the lower Missouri River. While Pallid Sturgeon survey information indicate they aren’t predominately found near the Iatan Generating Station, they have been recorded within a few miles of the facility. Other rare fish species including the Lake Sturgeon (*Acipenser fulvescens*), Flathead Chub (*Platygobio gracilis*), Sicklefin Chub (*Macrhybopsis meeki*), Sturgeon Chub (*Macrhybopsis gelida*), Western Silvery Minnow (*Hybognathus argyritis*), Brassy Minnow (*Hybognathus hankinsoni*), and Plains Minnow (*Hybognathus placitus*) have also been reported near the plant. Therefore, the potential for entrainment of any of these species, while unlikely, remains a possibility.”

The Services continued; “The Clean Water Act identifies requirements for relevant facilities to investigate the best technology available to reduce aquatic biota impingement/entrainment. Upon an evaluation of the U.S. Environmental Protection Agency compliance alternatives, Evergy is proposing to implement Alternative 5 as the most viable option while considering the existing plant format and operations. Alternative 5 would consist of retrofitting the existing traveling screens with additional fish handling and return systems. A two-year optimization study would also be included to help refine the measures and further reduce the potential impingement and entrainment impacts to aquatic species. The Service agrees with the approach and would support the investigation of additional viable fish diversion or avoidance measures/features preceding the traveling screens to help increase the effectiveness of the proposed activities and help avoid future impacts to native aquatic wildlife as result of plant operations.”

Deliberating Factor 3.
The Department is tasked with underscoring unintended consequences from implementing new technologies. Unintended consequences are those not relating to water pollution but consequences such as increased landfill waste, reduced air quality, higher electrical costs passed on to customers, or requiring additional fuel (coal) to be transported from off-site to the facility. Sometimes identified as societal costs, these were determined to be, as a whole, greater than the loss of larvae or small fish entrained in to the cooling system. Social costs grossly exceed the social benefits of entrainment reductions at Iatan Generating Station associated with retrofits to closed-cycle cooling and modified thru-flow 2.0 mm fine mesh TWS. The low estimated social benefits are largely due to the planned end of plant life in 2035. Additionally, the low effectiveness of 2.0 mm fine mesh TWS at Iatan Generating Station combined with the observed entrainment of lower economic valued fish species resulted in lower social benefits. The selection of either closed-cycle cooling or modified thru-flow 2.0 mm fine mesh TWS to meet entrainment BTA at Iatan Generating Station would result in social costs which are not justified by the social benefits. Each of the candidate technologies results in negative net social benefits, suggesting that neither measure is justified as BTA for entrainment. The second main consideration in determining BAT for cooling wastewater was the factor of additional energy use if cooling towers were installed and operated. The facility would not be able to send as much electricity to customers which may necessitate the need to supplement energy from other sources to fulfil the needs of the consumers.

Final Determination.
After applying factors listed above, and considering the technologies and unique circumstances discussed, the Department has determined, based on its best professional judgment, that the current once-through cooling system is the best available technology for entrainment for Unit 1 at this time as additional measures would not provide societal benefits. While the facility may choose to install a cooling technology to meet water quality based effluent limits (WQBELs) for temperature at outfall #001 in the future, no specific entrainment technology is being required by the Department.

Additionally, for CWA §316(b), there is no statutory deadline for meeting the BTA requirement for entrainment, therefore, the end of life of the plant would be considered as a highly weighted factor for installation of any thermal abatement devices. Given the end of life projected for 2035 for Unit 1, recouping the costs of installation of cooling towers, after an extensive outage and years of construction, the installation of closed cycle cooling would not be advisable due to additional societal costs; the BTA decision of single pass cooling for entrainment can also be extended if necessary if Unit 1 remains in operation.

This permit does not require the facility to commit to an end of life discharge scenario, but given advancing technology in alternative, more environmentally friendly generating technologies such as wind and solar, battery or storage advancements, and future more restrictive air regulations, it is the expectation this facility will retire during the timeframe established by Evergy in the (r)(10) document.

The historic thermal contribution of Iatan were evaluated under 40 CFR 125.73(c)(2). Over time, the heat discharge has not changed significantly; Unit 1 was installed in 1980 and the designed output has not changed. There is no expectation that the output will change in the future. The thermal component of the discharge used for cooling the condensers is not expected to increase. This will be confirmed at subsequent permit renewals by utilizing data submitted for the thermal discharge parameter for outfall #001 and permitted feature #009 (intake) and this data includes stream temperatures.

BAT determinations in NPDES permits are case by case. There is not a national regulation covering power plant thermal discharges. And so the permitting decisions for those facilities must be done on a case-by-case basis and each of those are unique to the facility. Each power plant is different, including the environment that they sit in, the receiving water, and, available makeup water is different. So each is truly case-by-case determination. And because of that, a BAT determination for a thermal discharge made on one power plant does not set a precedent for a BAT determination on a following permitting decision. Each decision is independent and one does not materially affect the next. Additionally, heat is treated differently in the CWA by virtue of the provisions of §316(a) and it allows the permitting authority to determine when a 316(a) variance is appropriate; in this case, Evergy has not elected to seek a thermal variance.

The evaluation of the net social benefit of a potential activity is an appropriate mechanism to evaluate alternatives for entrainment reduction. Under the Rule, permitting authorities “reject otherwise available entrainment controls if the costs of the controls are not justified by their associated benefits (taking into account monetized, quantified, and qualitative benefits), and the other factors discussed in the final Rule.” In the event the net social benefits of a proposed set of activities are negative (i.e., social costs outweigh social benefits such that expenditures to install and operate the measure do not result in a commensurate social benefit), there is no reasonable justification for that activity to represent entrainment BTA and doing so is expected to leave society worse off.

As stated by the EPA in the preamble (p. 48340) to the 2014 Impingement and Entrainment rulemaking, “after careful consideration of multiple factors, EPA concluded that a closed-cycle recirculating system is not the “best technology available” for existing units within the meaning of the statute. It is not the best technology available on a national basis for minimizing adverse environmental impact and should not form the sole basis for the BTA standard for entrainment”. Any alternate analysis, showing an alternative conclusion, should be submitted to the department during the Public Notice period and must be as rigorous as the EPA’s requirement

for technology assessment such as this permit illustrated. The alternate analysis must be in a format as required by the regulations for establishing technological limitations by developing a decision using the appropriate TBEL BAT factors to be considered as appropriate mechanism to reverse this permit's determinations. Replacement BAT decisions are only implemented in permits when there is a need for the technology; when a problem is identified. At this site, the demonstrations and data have shown additional technologies would not provide benefits without costs; these costs outweigh the benefits.

This BAT assessment, conducted utilizing the factors in CWA 304(b)(2)(B), as regulated per 40 CFR 125.3 found that modified traveling screens with fish-friendly returns are the only necessary upgrade at the Iatan facility at this time. There are no limitations or standards by which the department is to perform an evaluation or what procedural specifics the Department is to consider, other than the factors listed in the regulation; no factor is required to be weighted higher than another, nor is there a prohibition that the Department weigh each factor evenly.

There are no established Missouri WQS for impingement or entrainment. However, general criteria in 10 CSR 20-7.031(4)(H) prohibit negative physical or hydraulic changes which would impair the biological community. While diversion of river water would be considered a hydraulic change in the flow, the permit writer will rely on the requirements in 40 CFR 125 Subpart J to achieve the reduction necessary to offset any found negative hydraulic changes. The intake does not divert a significant percentage (diverts 3%) of the Missouri River, and the facility returns most water back to the river. There is no RP for Hydraulic Changes, therefore no limitations for water diversion are being developed.

UNDERGROUND INJECTION CONTROL (UIC)
The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to §§1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by 577.155 RSMo; 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 577.155 RSMo; 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 any drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health. If the director finds the injection activity may endanger USDWs, the department may require closure of the injection wells, or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the facility shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at the following web address: https://dnr.mo.gov/document-search/class-v-well-inventory-form-mo-780-1774 Single family residential septic systems and non-residential septic systems used solely for sanitary waste and having the capacity to serve fewer than 20 persons a day are excluded from the UIC requirements (40 CFR 144.81(9)). The department implements additional requirements for these types of operations pursuant to 10 CSR 20-6.015(4)(A)1 which instructs the department to develop permit conditions containing limitations, monitoring, reporting, and other requirements to protect soils, crops, surface waters, groundwater, public health, and the environment.

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

UTILITY WASTE LANDFILL:
A permit, Number: 0916501, was issued to the facility by the Waste Management Program within the department on October 27, 2016. The landfill is 813 acres, with a useable area of 166.5 acres. The Water Protection Program does not have jurisdiction over the landfill. Those requirements are found under solid waste regulations at 10 CSR 80-11. The Iatan Generating Station has two coal-fired units that produce fly ash, bottom ash, and gypsum. CCR not beneficially used is transported to the on-site landfill for disposal. Related landfill facilities include a groundwater monitoring system, storm water and leachate management systems, and haul/access roads. Phases I and II of the landfill have been constructed and are currently active. Phase III is under construction.

The final rule for contact stormwater 11/03/2015, 80 FR, Page 67854 noted that EPA received public comments expressing concern that the proposed definition of combustion residual leachate would apply to contaminated stormwater. Although this was not EPA's intention, for the final rule, EPA revised the definition to make it clear that contaminated stormwater does not fall within the final definition of combustion residual leachate. The contact stormwater at outfall #011 does not pass through the berm. Leachate is separate and is managed under permitted feature #010. Non-contact stormwater is separated under new outfalls.

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 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. Thermal variances are regulated separately and are found under 644.

✓ 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; definitions], the WLA is the maximum amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Only streams with available load allocations can be granted discharge allowances. Outfalls afforded mixing allocations provide higher limits because the receiving stream is able to accept more pollutant loading without causing adverse impacts to the environment or aquatic life.

✓ Applicable; wasteload allocations for toxic parameters were calculated using water quality criteria or water quality model results and by applying the dilution equation below. These equations are statistical equations (See Part III – REASONABLE POTENTIAL ANALYSIS) used to calculate the hypothetical or actual variability of the wastewater and the spreadsheet output obtains an effluent limit. Most toxic parameter's WLAs are calculated using the *Technical Support Document For Water Quality-Based Toxics Control* or "TSD" EPA/505/2-90-001; 3/1991, §4.5.5.

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

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

✓ For ammonia, the EPA's Technical Support Document for Water Quality-Based Toxic Controls (TSD) establishes other alternatives to limit derivation. The department has determined the approach established in TSD §5.4.2, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits, is more appropriate limit derivation approach for ammonia. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. WLAs are then applied as effluent limits, per §5.4.2 of the TSD, where the CMC is the daily maximum and the CCC is the monthly average.
The direct application of both acute and chronic criteria as WLA is also applicable for facilities discharging into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the standard mass-balance equation. In the event mixing considerations derive an AML less stringent than the MDL, the AML and MDL will be equal and based on the MDL.

✓ For chloride, the department uses TSD §5.4.1 for two-value steady state acute and chronic protection of aquatic life. It allows comparison of two independent WLAs (acute and chronic) to determine which is more limiting for a discharge. The WLA output provides two numbers for protection against two types of toxic effects, acute and chronic permit limitations resulting in a daily maximum and monthly average limit.

✓ Criteria maximum concentration (CMC) are the acute in-stream standards for a specific pollutant.

✓ Criteria continuous concentration (CCC) are the chronic in-stream standards for a specific pollutant.

✓ Acute wasteload allocations (WLAa) are designated as daily maximum limits (maximum daily limit: MDL)., were determined using applicable water quality criteria

✓ Chronic wasteload allocations (WLAc) are designated as monthly average limits (average monthly limit: AML) and are typically the most stringent limits applied. Facilities subject to average monthly limits are welcome to take additional samples in the month to meet any lower limit by averaging the results. When only one sample is taken in the month, the sample result is applied to both the daily maximum and monthly average.

✓ Mixing: when a stream's flow 7Q10 is above 0.1 cfs, (or lake width is sufficient) the discharge may be afforded mixing allowances. The mixing criteria for toxics are found at 10 CSR 20-7.031(5)(A)4 and a full explanation of mixing is found in Part II – WATERBODY MIXING CONSIDERATIONS.

✓ Number of Samples "n": effluent quality is determined by the underlying distribution of daily values, determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying assumption which is, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed uses an assumed number of samples "n = 4". See additional information under Part III – REASONABLE POTENTIAL ANALYSIS

✓ For stormwater, WLAs were not calculated. See section on stormwater permitting as applying WLAs to stormwater is not normally applicable per TSD §3.1.

WASTELOAD ALLOCATION (WLA) MODELING

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

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

WATER QUALITY STANDARD REVISION

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

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

WHOLE EFFLUENT TOXICITY (WET) TEST

A WET test is a quantifiable method to conclusively determine if discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, typically when mixed with receiving stream water. Under the CWA §101(a)(3), requiring WET testing is reasonably appropriate for Missouri State Operating Permits to quantify toxicity. WET testing is also required by 40 CFR 122.44(d)(1) when RP is found. WET testing ensures the provisions in 10 CSR 20-6 and Missouri's Water Quality Standards in 10 CSR 20-7 are being met; the acute WQS for WET is 0.3 TUa. Under 10 CSR 20-6.010(8)(A)4, the department may require other terms and conditions it deems necessary to ensure compliance with the CWA and related regulations of the Missouri Clean Water Commission. Missouri Clean Water Law (MCWL) RSMo 644.051.3 requires the department to set permit conditions complying with the MCWL and CWA. 644.051.4 RSMo specifically references toxicity as an item the department must consider in permits (along with water quality-based effluent limits); and RSMo 644.051.5 is the basic authority to require testing conditions. Requirements found in the federal application requirements for POTWs (40 CFR 122.21(j)(5)) do not apply to industrial facilities, therefore WET testing can be implemented on a case by case basis following the factors outlined below. Annual testing is the minimum testing frequency if reasonable potential is found; 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." To determine reasonable potential, factors considered are: 1) history of toxicity; 2) quantity and quality of substances (either limited or not) in the permit with aquatic life protections assigned; and 3) operational controls on toxic pollutants. See Part III under REASONABLE POTENTIAL for additional information. A facility does not have to be designated as a major facility to receive WET testing; and being a major facility does not automatically require WET testing. Additionally per 40 CFR 122.44(d)(1)(v), limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet, using the procedures in 40 CFR 122.44(d)(1)(ii) of this section, that chemical-specific limits or specified operational controls are sufficient to attain and maintain applicable numeric and narrative water quality standards.

If WET limits are applied to this facility, follow up testing applies. When a facility exceeds the TU established in the permit, three additional follow-up tests are triggered. The follow up test results do not negate the initial testing result. If the facility is within the prescribed TU limit for all three follow up tests, then no further testing is required until the next regularly scheduled tests. If one or more additional tests exceed the TU limit, the facility may consider beginning the Toxicity Identification Evaluation (TIE) and Toxicity Identification Reduction (TRE) processes instead of waiting for three consecutive TU exceedances. The TIE and TRE process can take up to two years, especially when toxicity is variable or transient. We urge facilities to work closely with their WET testing laboratory to follow nationwide guidance for determining causes of toxicity and curative activities to remove toxicity. Additional wastewater controls may be necessary; and while, generally, no Construction Permit (CP) is required for adding treatment at industrial facilities, the facility may check with the Engineering Section to determine a plan of action.

If WET testing failures are from a known toxic parameter, and the facility is working with the department to alleviate that pollutant's toxicity in the discharge, please contact the department prior to conducting follow-up WET testing. Under certain conditions, follow-up testing may be waived when the facility is already working to reduce and eliminate toxicity in the effluent.

- ✓ Applicable; WET testing is found in this permit. See additional information regarding the decision points for WET testing in Part IV of the fact sheet. The decision process for WET is complicated. Outfall #003 has few parameters identified as toxicand rarely discharges therefore acute is appropriate. Outfall #010 also rarely discharges but has numerous toxic parameters identified therefore the facility must attempt to take a chronic test, but complete an acute test only if the discharge stops. Both outfalls have dependency on stormwater influence for discharge, but are considered wastewater discharges.

PART IV. EFFLUENT LIMIT DETERMINATIONS

OUTFALL #001 – SINGLE PASS COOLING WATER

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAXIMUM	MONTHLY AVERAGE MAXIMUM	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	DAILY	MONTHLY	MEASURED
EFFLUENT FLOW (QE)	°F	*	*	SAME	DAILY	MONTHLY	MEASURED
EFFLUENT TEMPERATURE (TE)	°F	*	*	SAME	DAILY	MONTHLY	MEASURED
STREAM FLOW (QS)	°F	*	*	SAME	DAILY	MONTHLY	MEASURED
STREAM TEMPERATURE (TS)	°F	*	*	SAME	DAILY	MONTHLY	MEASURED
TEMPERATURE CAP	°F	*	*	SAME, INT.	DAILY	MONTHLY	CALCULATE
TEMPERATURE CAP	°F	90	90	SAME, FINAL	DAILY	MONTHLY	CALCULATE
TEMPERATURE CHANGE ΔT	°F	5	5	SAME	DAILY	MONTHLY	CALCULATE
CONVENTIONAL							
CHLORINE, FREE AVAILABLE	mg/L	0.5	0.2	SAME	CONDITIONAL	CONDITIONAL	GRAB
CHLORINE, TOTAL RESIDUAL‡	µg/L	23.6 (ML130)	11.8 (ML130)	SAME	CONDITIONAL	CONDITIONAL	GRAB
OTHER							
ACUTE WET TEST	TUc	*	n/a	SAME	CONDITIONAL	CONDITIONAL	GRAB

* monitoring and reporting requirement only
‡ An ML is established for TRC; see permit.
new parameter not established in previous state operating permit
int. interim parameter requirements prior to end of SOC
final parameter requirements at end of SOC

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 ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility 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), daily monitoring continued from previous permit. The facility reported from 117.8 to 471.2 MGD in the last permit term.

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) or thirty-two and two-ninths degrees Celsius (32 2/9 °C). In order to reduce confusion and duplicative monitoring or reporting requirements, the permit will only require that temperature be monitored and reported in degrees Fahrenheit. It is not necessary to report in both Celsius and Fahrenheit. Thermal discharges are henceforth measured in actual temperatures discharged in °F because measurements provided in BTUs per day are not protective of water quality and aquatic life habitat. The facility will report T_{cap} and ΔT daily values in their discharge monitoring report quarterly. The facility has a ten year schedule of compliance to achieve the T_{cap} effluent limitations. Missouri's Water Quality Standards (WQS) establish temperature criteria that provide several forms of protection from the impacts of heat energy on receiving water bodies. The purpose of this derivation document is to provide a simplistic approach to help both permit writers and the public understand the Missouri WQS's temperature criteria and how they are applied in Missouri State Operating Permits.

Missouri's WQS Temperature Criteria [10 CSR 20-7.031(5)(D)] establish two main areas of compliance for general and limited warm-water fisheries. The first compliance requirement deals with the rise of temperature in a receiving water body (stream or river), and the second compliance requirement deals with the stream's overall temperature which cannot be exceeded. Both compliance requirements are to be established at the end of the regulatory mixing zone (if applicable, depending on stream classification). These two compliance requirements are located in Missouri WQS [10 CSR 20-7.031(5)(D)1. & 5.].

In addition to establishing temperature limits in an operating permit, Missouri's WQS temperature criteria also establish mixing zone regulations contain in [10 CSR 20-7.031(5)(D)6.]. In comparison to Missouri's WQS toxic mixing considerations that use

low-flow considerations (i.e, 1Q10, 7Q10, & 30Q10), the Missouri WQS temperature regulations require the Missouri Department of Natural Resources (department) to establish a thermal mixing zone limited to either 25% of the cross-sectional area or 25% volume of a river. This approach assumes the receiving water consumes 100% of the heat energy being discharged.

Missouri WQS temperature criteria [10 CSR 20-7.031(5)(D)1.] establishes that point sources discharging to streams in Missouri shall not raise or lower the temperature of the receiving stream by more than 5°F. Because this is a WQS, this criteria can be applied at the end of the regulatory mixing zone. In the determination of compliance with the temperature criteria of ΔT, several factors/conditions need to be obtained (i.e., intake temperature, stream flow, effluent flow, & effluent temperature).

ΔT: is the amount in T°F that the facility is causing the receiving stream's temperature to rise at the end of the regulatory mixing zone. If the ΔT is greater than 5°F, then the facility is in non-compliance.

The term $\mathbf{Q_s}$ will be established in operating permits as Ambient Stream Flow in the unit of cfs. It is the department's expectation that the permittee will obtained the $\mathbf{Q_s}$ data from appropriate and applicable the nearest upstream USGS or Corp. or Engineers (or both) gauging stations.

If there is a significant distance from the facility to the nearest upstream gauging station, it may be in the best interest of the permittee to fund a new gauging station; however, it is not required. Additionally, the department will only use gauging station data as a viable source of receiving stream flow. Meaning that flows (design or actual) from other point sources may not be considered (i.e., added) to the flow determination.

If there is a near-by gauging station downstream of the facility, then the permittee can use this data but must subtract their daily effluent discharge from the receiving stream flow.

The term $\mathbf{Q_e}$ will be established in the operating permit as effluent flow and reported in the unit cfs.
The term $\mathbf{T_s}$ will be established in the operating permit as stream temperature and reported in the unit °F. This is the compliance with the receiving stream's temperature and not their intake structure's water temperature.

The term $\mathbf{T_e}$ will be established in the operating permit as effluent temperature and reported in the unit °F. This is not a measurement of the change in temperature from the intake to the effluent, but as it sounds, the measured temperature of the effluent.

Temperature Cap (T_{cap})
The following equation bases the mixing on one quarter of the receiving stream's flow in CFS and compares it to the effluent's flow. The Missouri River's 7Q10 low flow value is 8275.24 CFS, the mixing of the effluent substantially decreases any potential of thermal pollution. The facility is held to the statute at 10 CSR 20-7.031(5)(D) by using the mixing equation below.

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

Where:
$Q_s/4$: is the daily receiving stream's mixing zone flow in cfs minus the Intake flow in cfs.
Q_e: is the effluent's flow in cfs.
T_s: is the stream's temperature (ambient/intake temperature).
T_e: is the effluent's temperature.
T_{cap}: is the temperature of the receiving stream at the end of the regulatory mixing zone.

Delta Temperature (ΔT)
The facility must calculate the change in temperature so that the discharge does not cause the ambient stream temperature to raise five degrees or more at the edge of the mixing zone. Previous permit limits for delta temperature were in percent exceedance of $6.7x10^{10}$ BTU per day.

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

Where:
$Q_s/4$ =Daily receiving stream's flow minus the intake flow divided by 4 (Mixing Consideration) in cfs. This can also be represented as the flow in the receiving stream's cross-sectional area divided by 4.
T_s = Daily receiving stream's temperature. This can be the actual ambient temperature of the receiving stream or the intake water temperature (both in °F)
Q_e = Daily effluent flow or intake flow
T_e = Daily effluent temperature in °F

During the last permit term, the facility provided results of sampling and calculating the Tcap and ΔT. The facility was in compliance with all ΔT measurements, reporting a maximum of 3 °F difference. Ther Tcap requirement has not yet been met, reporting a maximum of 110 °F at the end of pipe, and a calculated Tcap of 94 °F; the SOC for Tcap is continued.

PERMIT CONDITION (PARAMETER)	DISCHARGE NO.	MOCWIS PARAM. #	MOCWIS PARAMETER NAME	UNITS	LIMIT
Flow and Effluent Flow (Qe) cfs (monitoring location = end of pipe) 24 Hr. Total & Measured	001 T	50050	Flow, in conduit or thru treatment plant	Mgal/d (MGD) & ft^3/sec (CFS)	*
Effluent Temperature (Te) °F (monitoring location = end of pipe) Measured	001 T	00011	Temperature, Water, deg. F	°F	*
Stream Flow (Qs) cfs (monitoring location = instream) Measured	001 T	50050	Flow, in conduit or thru treatment plant	cfs	*
Stream Temperature (Ts) °F (monitoring location = instream) Measured	001 T	52240	Temperature, background	°F	*
ΔT °F (monitoring location = effluent net) Calculated	001 T	03772	Temp. Diff between Up/Down stream	°F	5
Tcap °F (monitoring location = downstream) Calculated	001 T	00011	Temperature, Water, deg. F	°F	90

CONVENTIONAL:

Chlorine, Free Available (FAC)

The effluent limitation guidelines for the steam electric power generating point source category at 40 CFR 423.13(c)(1) limit the amount of FAC in once-through cooling water. The maximum concentration is limited to 0.5 mg/L per day, and 0.2 mg/L per month. This is a technology based limit (TBEL) promulgated by the EPA to be applicable to all dischargers in the steam-electric category. If the permittee does not use chlorine in a given sampling period, the facility is not required to report. Table A-3 in the permit describes conditional sampling. Each year, even if chlorine or biocides are not used, to comply with yearly reporting, the facility will submit a short report to the Kansas City Regional Office. The facility must collect samples and analyze for free available chlorine, total residual chlorine, and whole effluent toxicity, upon every occasion (daily, concurrently) of chlorine use. The facility is not required to sample for chlorine if the biocide used is not chlorine based, but must sample for chlorine if bromines are used. However, the facility must still collect a sample for WET testing (daily, concurrently) upon biocide use. The facility did not chlorinate during the last permit term. See part III for additional information regarding CHLORINE AND BROMINE.

Chlorine, Total Residual (TRC)

Missouri water quality standards are CCC 11 µg/L, and CMC 19 µg/L. The previous permit limits were 26.6 µg/L daily maximum and 11.8 µg/L monthly average. The permit writer has determined this parameter has reasonable potential to cause an excursion above the water quality limits because the facility has the allowance to add disinfection to control mollusks or other buildup. However, the facility did not chlorinate during the last permit term.

The water quality standards for chronic total residual chlorine increased from 10 µg/L to 11 µg/L in 2018; see 10 CSR 20-7.031 Table A1. Permit reissuance must utilize currently applicable water quality standards when calculating water quality based effluent limitations therefore the limitations within this permit are slightly higher than the last permit. The department has determined, through reissuance of elevated water quality standards, the discharges of this parameter within permitted limits will not cause or contribute to exceedances of the WQS therefore this limit revision is not subject to backsliding provisions; see Part III ANTIBACKSLIDING for more information. Missouri water quality standards are CCC 11 µg/L, and CMC 19 µg/L. The previous permit limits were 26.6 µg/L daily maximum and 11.8 µg/L monthly average. The permit writer has determined this parameter has reasonable potential to cause an excursion above the water quality limits. The facility did not chlorinate or brominate during the last permit term. See part III for additional information regarding CHLORINE AND BROMINE.

Acute AQL: 19 µg/L

Chronic AQL: 11 µg/L

Acute WLA: Ce = ((728.7 cfsDF + 206.875 cfsZID) * 19 – (206.875 cfsZID * 0 background)) / 728.744 cfsDF = 24.3

Chronic WLA: Ce = ((728.7 cfsDF + 2068.75 cfsMZ) * 11 – (2068.75 cfsMZ * 0 background)) / 728.74 cfsDF = 42.2

LTAa: WLAa * LTAa multiplier = 24.393 * 0.321 = 7.83 [CV: 0.6, 99th %ile]

LTAc: WLAc * LTAc multiplier = 42.226 * 0.527 = 22.27 [CV: 0.6, 99th %ile]

use most protective LTA: 7.832

Daily Maximum: MDL = LTA * MDL multiplier = 7.832 * 3.11 = 24.39 µg/L [CV: 0.6, 99th %ile]

Monthly Average: AML = LTA * AML multiplier = 7.832 * 1.55 = 12.15 µg/L [CV: 0.6, 95th %ile, n=4]

The facility stated they do not chlorinate currently but would like the option; this facility is not afforded a schedule of compliance.

This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from *Standard Methods for the Examination of Waters and Wastewater*. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than 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.

The minimum frequency the department is allowed to apply sampling requirements for a facility is yearly per 40 CFR 122.44(i)(iv)(A)(2). Table A-3 in the permit describes conditional sampling. Each year, even if chlorine or biocides are not used, to comply with yearly reporting, the facility will submit a short report to the St. Louis Regional Office. The facility must collect samples and analyze for free available chlorine, total residual chlorine, and whole effluent toxicity, upon every occasion (daily, concurrently) of chlorine use. The facility is not required to sample for chlorine if the biocide used is not chlorine based. However, the facility must still collect a sample for WET testing (daily, concurrently) upon biocide use.

OTHER:

Whole Effluent Toxicity (WET) Test, Acute

Using RPD, there is no reasonable potential to cause toxicity in the receiving stream based on the factors listed in Part III, REASONABLE POTENTIAL, and WHOLE EFFLUENT TOXICITY (WET) TEST. if the facility over chlorinates or brominates the wastewater, those measurements will show noncompliance and over-chlorination is unlikely to occur. The facility did not take a WET test during the last permit term. While mixing is allowed for discharges to the Missouri River, this is a monitoring only permit therefore the standard Allowable Effluent Concentration (AEC) for facilities without mixing considerations is 100%. The standard dilution series for facilities discharging to waterbodies with no mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25% as 10 CSR 20-7.015((9)(L)4.A states the dilution series must be proportional. See the permit for the dilution series. The Acute WET test is appropriate in this situation as application of biocides is temporary therefore only one aliquot can be obtained at the time of application. Additional aliquots, as required under the chronic testing regime would not have chlorine in them because of how the intake is treated.

OUTFALL #003 – HOLDING BASIN DISCHARGE

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	ONE/MONTH	MONTHLY	24 HR. TOT
CONVENTIONAL							
OIL & GREASE	mg/L	15	10	SAME	ONE/MONTH	MONTHLY	GRAB
pH †	SU	6.5 TO 9.0	-	SAME	ONE/MONTH	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	100	30	SAME	ONE/MONTH	MONTHLY	GRAB
METALS							
ALUMINUM, TR	µg/L	750	374	*	ONE/MONTH	MONTHLY	GRAB
IRON, TR	µg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
NUTRIENTS							
AMMONIA AS N	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
KJELDAHL NITROGEN, TOTAL (TKN)	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
NITRATE PLUS NITRITE AS N	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
PHOSPHORUS, TOTAL P (TP)	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
WET TEST - ACUTE	TUa	*	-	SAME	ONE/YEAR	ANNUALLY	GRAB

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
new parameter not established in previous state operating permit
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:
While the facility has not discharged from this outfall in many years, this outfall is not a non-discharging outfall pursuant to 10 CSR 20-6.015 as this facility continues to have authorization to discharge from this outfall. Sampling for the purposes of permit renewal occurred via a dip sample. Dip samples fulfil the sampling responsibility of the applicant but may not exactly represent what would be a discharge. This outfall would only discharge under significant precipitation as the water contained in the basin is used in other processes and recycled in the facility.

PHYSICAL:

Flow
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility 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), monthly monitoring continued from previous permit. The facility did not discharge during the last permit term.

CONVENTIONAL:

Oil & Grease
15 mg/L daily maximum; 10 mg/L monthly average; continued from previous permit using RPD. The facility did not discharge during the last permit term. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or xylene, but these constituents are often lost during testing due to their boiling points. An RPD on this parameter found RP based on the activities occurring associated with steam-electric generation, even though the facility has successfully maintained the basin as no-discharge.

Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the facility to visually observe the discharge and receiving waters for sheen or bottom deposits. The limit this permit applies does not allow the facility to violate general criteria pursuant to 10 CSR 20-7.015(4) even if data provided are below the numeric limit. The ELG requires 20 mg/L daily maximum and 15 mg/L monthly average, however, the WQBEL is more stringent and protective, therefore will be applied per 40 CFR 122.44(b)(1) and 10 CSR 20-7.015(9)(A) respectively.
AQL Chronic: 10 mg/L per 10 CSR 20-7.031 Table A1
Set chronic standard equal to chronic WLA per TSD §5.4.2 (EPA/505/2-90-001); multiply by 1.5 to obtain acute limit.
10 mg/L * 1.5 = 15 mg/L

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall, continued from previous permit. pH is a fundamental water quality indicator. Additionally, metals leachability and ammonia availability in wastewater is dependent on pH. Limitations in this permit will protect against aquatic organism toxicity, downstream water quality issues, human health hazard contact, and negative physical changes in accordance with the general criteria at 10 CSR 20-7.031(4) and the Clean Water Act's (CWA) goal of 100% fishable and swimmable rivers and streams. The ELG stipulates 6.0 to 9.0 SU, however, the WQBEL is more stringent and protective, therefore will be applied per 40 CFR 122.44(b)(1) and 10 CSR 20-7.015(9)(A) respectively. It is assumed there is RP for pH based on RPD although there are no discharge samples for this outfall to compare the data.

Total Suspended Solids (TSS)
100 mg/L daily maximum and 30 mg/L monthly average per 40 CFR 423.12(b)(1). There are no established numeric WQS for this parameter therefore the TBEL is more stringent and protective, therefore will be applied per 40 CFR 122.44(b)(1) and 10 CSR 20-7.015(9)(A) respectively. There is no RP for this parameter which would necessitate a more stringent application of the general narrative criteria per 10 CSR 20-7.031(4).

METALS:

Aluminum, Total Recoverable
Previous permit limits were monitoring only; the last application reported 746 µg/L, and this application reported 1310 µg/L. While both samples were described as dip samples and not sampled as part of a discharge, it appears this parameter is trending upward. This parameter has RP; see fact sheet Part III, REASONABLE POTENTIAL therefore a limit must be established. By not discharging, the facility is able to meet the new limits therefore no SOC is afforded.
Acute AQL: 750 µg/L
Acute WLA: Ce = ((1.55 cfsDF + 0 cfsZID) * 750 – (0 cfsZID * 0 background)) / 1.5472286 cfsDF = 750
LTAa: WLAa * LTAa multiplier = 750 * 0.321083213790479 = 240.812410342859 [CV: 0.6, 99th %ile]
Daily Max: MDL = LTA * MDL multiplier = 240.812 * 3.114 = 750 µg/L [CV: 0.6, 99th %ile]
Monthly Avg: AML = LTA * AML multiplier = 240.812 * 1.552 = 373.8 µg/L [CV: 0.6, 95th %ile, n=4]

Cadmium, Total Recoverable
In the renewal application materials, the facility indicated this parameter was absent, and was not detected. The last permit implemented monitoring, however, monitoring is not continued. The revised requirement is not subject to antibacksliding provisions, see Part III ANTIBACKSLIDING for more information.

Chromium, Hexavalent, Dissolved
In the renewal application materials, the facility indicated this parameter was absent, and was not detected. The last permit implemented monitoring, however, monitoring is not continued. The revised requirement is not subject to antibacksliding provisions, see Part III ANTIBACKSLIDING for more information.

Iron, Total Recoverable
In the renewal application materials, the facility indicated this parameter was present, but is below WQS therefore no need for a permit limit. The parameter was identified as a POC utilizing TBEL analysis therefore monitoring is required. See special conditions.

NUTRIENTS:
Influent monitoring is part of 10 CSR 20-7.015(9)(D), however was not implemented because this is an industrial facility with many inputs and the water is recycled. The influent is not representative of removal percentages which was the base for requiring influent monitoring.

Ammonia, Total as Nitrogen
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. This is a new requirement based on new regulations promulgated during the permit term. This was reported as a non-detect in the sampling for renewal but other species of nitrogen were detected which requires ammonia also be measured.

Kjeldahl Nitrogen, Total (TKN)
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. This is a new requirement based on new regulations promulgated during the permit term. The facility reported 0.91 mg/L in the application.

Nitrate plus Nitrite
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. This is a new requirement based on new regulations promulgated during the permit term. The facility reported 0.7 mg/L in the application. The parameter was identified as a POC utilizing TBEL analysis therefore monitoring is required. See special conditions.

Phosphorus, Total P (TP)
Phosphorus is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. This is a new requirement based on new regulations promulgated during the permit term. The facility reported 0.16 mg/L in the application. The parameter was identified as a POC utilizing TBEL analysis therefore monitoring is required. See special conditions.

OTHER:

Chloride
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of chloride. The facility reported 33.5 mg/L in the application. There is no RP for this parameter therefore a limit is not required to be established.

Sulfate
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate. The facility reported 278 mg/L in the application. There are no applicable WQS for this parameter for this discharge. The DWS use is not assigned to Wellson Slough.

Chloride Plus Sulfate
Sulfate is a parameter of concern at steam electric power plants; and chloride is a parameter of concern in the water treatment process. Monthly monitoring is established, although no reasonable potential exists therefore a WQBEL pursuant to 10 CSR 20-7.031(L) is not required at this time.

Whole Effluent Toxicity (WET) Test, Acute
Monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream based on the factors listed in Part III, REASONABLE POTENTIAL, and WHOLE EFFLUENT TOXICITY (WET) TEST. While monitoring was included in the last permit, no results were collected because there was no discharge. The Acute test will be retained as the facility is not expected (if there was a discharge) to occur chronically. The chronic test requires three aliquots spaced over 5 days. For acute tests where no mixing is allowed, the 0.3 TUa criterion must be met at the end of the pipe. However, when using an LC_{50} as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC_{50} value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration (AEC) is 100%, a minimum level (ML) of 1.0 TUa will apply. The standard Allowable Effluent Concentration (AEC) for facilities without mixing considerations is 100%. The standard dilution series for facilities discharging to waterbodies with no mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25% as 10 CSR 20-7.015((9)(L)4.A states the dilution series must be proportional.

OUTFALL #010 – UWL LEACHATE

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	ONE/MONTH	MONTHLY	24 HR. TOT
HARDNESS	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
CONVENTIONAL							
OIL & GREASE	mg/L	20	15	NEW	ONE/MONTH	MONTHLY	GRAB
pH †	SU	6.5 TO 9.0	-	SAME	ONE/MONTH	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	100	30	SAME	ONE/MONTH	MONTHLY	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
BORON	µg/L	*	*	INTERIM	ONE/MONTH	MONTHLY	GRAB
BORON	µg/L	3285	1638	FINAL	ONE/MONTH	MONTHLY	GRAB
MAGNESIUM, TR	µg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
MANGANESE, TR	µg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
MOLYBDENUM, TR	µg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
NICKEL, TR	µg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
SELENIUM, TR	µg/L	*	*	INTERIM	ONE/MONTH	MONTHLY	GRAB
SELENIUM, TR	µg/L	8.2	4.1	FINAL	ONE/MONTH	MONTHLY	GRAB
NUTRIENTS							
AMMONIA AS N	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
KJELDAHL NITROGEN, TOT. (TKN)	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
NITRATE PLUS NITRITE AS N	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
NITROGEN, TOTAL (TN)	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	SAME	ONE/MONTH	MONTHLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	*	*	INTERIM	ONE/MONTH	MONTHLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	1000	*	FINAL	ONE/MONTH	MONTHLY	GRAB
WET TEST – ACUTE/CHRONIC	TUa/c	*	-	NEW	ONE/YEAR	ANNUALLY	GRAB
WET TEST – ACUTE/CHRONIC	TUa/c	0.3/1.6 (ML1.0)	-	FINAL	ONE/YEAR	ANNUALLY	GRAB

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
new parameter not established in previous state operating permit
interim parameter requirements prior to end of SOC
final parameter requirements at end of SOC
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:
Because this outfall rarely discharges, the TBEL analysis and RP determinations were based on limited data. The facility discharged in 2nd quarter 2022 and the facility dip-sampled for permit renewal.

PHYSICAL:

Flow
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility 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), monthly monitoring continued from previous permit. The facility reported from 0.338 MGD in the last permit term; only one discharge occurred.

Precipitation
Reporting requirement removed. The basin rarely discharges but a discharge is permitted; there are no requirements in this permit that necessitating the facility show the scenario under which the basin discharged. Removal of this parameter does not constitute backsliding; backsliding provisions only apply to limiting conditions.

Hardness
Hardness monitoring and reporting is continued. Hardness measurements can provide information for metals leachability and strength of the wastewater.

CONVENTIONAL:

Oil and Grease
20 mg/L daily maximum and 15 mg/L monthly average per 40 CFR 423.15(b)(3) for low volume waste sources.

pH
6.5 to 9.0 SU – instantaneous grab sample; same as previous permit. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall. pH is a fundamental water quality indicator. Additionally, metals leachability and ammonia availability in wastewater is dependent on pH. Limitations in this permit will protect against aquatic organism toxicity, downstream water quality issues, human health hazard contact, and negative physical changes in accordance with the general criteria at 10 CSR 20-7.031(4) and the Clean Water Act's (CWA) goal of 100% fishable and swimmable rivers and streams. The facility reported 8.61 SU in the 2nd quarter 2022 discharge. There is RP for this parameter. The ELG 40 CFR 423.15(b)(1) is not stringent enough to meet WQ therefore will not be applied.

Total Organic Carbon (TOC)
Total Organic Carbon monitoring in the last permit is removed. TOC was included based on the 2017 TBEL analysis, but is not concerning for this type of wastewater stream, nor was TOC identified as warranted for further analysis in this renewal's TBEL analysis. Removal of this parameter is not considered backsliding as no limiting conditions (there was no numeric limit) for this parameter found in the previous permit.

Total Suspended Solids (TSS)
100 mg/L daily maximum and 30 mg/L monthly average per 40 CFR 423.15(b)(3) for low volume waste sources.

METALS:

Aluminum, Total Recoverable
New parameter; the facility reported 217 µg/L in the application. Monitoring is required.

Boron, Total Recoverable
Previous permit limits were monitoring only; the facility reported 3070 and 3300 µg/L in the last permit term and the application respectively. This parameter has RP; see fact sheet Part III, REASONABLE POTENTIAL. The facility is not able to meet the new limits therefore an SOC is afforded; see fact sheet Part III SCHEDULE OF COMPLIANCE. This parameter is also a PPOC. See Part III, TECHNOLOGY BASED EFFLUENT LIMITS and subsection Potential Pollutants Of Concern. See Special Condition: Facility-Wide Technology Assessment.
Chronic IRR: 2000 µg/L
LTAc: WLAc * LTAc multiplier = 2000 * 0.527 = 1054.867 [CV: 0.6, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 1054.867 * 3.114 = 3285.3 µg/L [CV: 0.6, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 1054.867 * 1.552 = 1637.6 µg/L [CV: 0.6, 95th %ile, n=4]

Magnesium, Total Recoverable
Continued parameter. Monthly monitoring required to determine if this pollutant needs a site specific TBEL developed. See Special Condition: Facility-Wide Technology Assessment. See Part III, TECHNOLOGY BASED EFFLUENT LIMITS and subsection Potential Pollutants Of Concern.

Manganese, Total Recoverable
New parameter. Monthly monitoring required to determine if this pollutant needs a site specific TBEL developed. See Special Condition: Facility-Wide Technology Assessment. See Part III, TECHNOLOGY BASED EFFLUENT LIMITS and subsection Potential Pollutants Of Concern. There are no surface WQS for this parameter.

Molybdenum, Total Recoverable
New parameter. Monthly monitoring required to determine if this pollutant needs a site specific TBEL developed. See Special Condition: Facility-Wide Technology Assessment. See Part III, TECHNOLOGY BASED EFFLUENT LIMITS and subsection Potential Pollutants Of Concern. There are no WQS for this parameter.

Nickel, Total Recoverable
New parameter; the facility reported 50 µg/L in the application. Monitoring is required.

Selenium, Total Recoverable
Previous permit was monitoring only; the facility reported between 19.8 and 45 µg/L in the application and the last permit term respectively. This parameter has RP; see fact sheet Part III, REASONABLE POTENTIAL. The facility is not able to meet the new limits therefore an SOC is afforded; see fact sheet Part III SCHEDULE OF COMPLIANCE. Selenium is the only parameter where the dip sample was found at less concentration than the discharge value. It is unknown why this occurred but is likely because selenium is technically a nonmetal based on the periodic table but it behaves like a metalloid under many circumstances. The metallic character of selenium is evident by its luster and its crystalline structure. Like true metals, selenium can be drawn into thin threads when molten and viscous. The nonmetallic character of selenium is shown by its brittleness and the low electrical conductivity in its highly purified form. This electrical conductivity is comparable to or less than that of bromine, a neighboring nonmetal. Selenium is commonly described as a metalloid in the environmental chemistry literature. It moves through the aquatic environment similarly to arsenic and antimony; its water-soluble salts, in higher concentrations, have a similar toxicological profile to that of arsenic. Hence, selenium is included under metals; and this parameter is sampled identically to other metals using EPA method 200.8 or similar.
Chronic AQL: 5 µg/L
LTAc: WLAc * LTAc multiplier = 5 * 0.527 = 2.637 [CV: 0.6, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 2.637 * 3.114 = 8.2 µg/L [CV: 0.6, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 2.637 * 1.552 = 4.1 µg/L [CV: 0.6, 95th %ile, n=4]

NUTRIENTS:

Ammonia, Total as Nitrogen
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. Continued from previous permit.

Kjeldahl Nitrogen, Total (TKN)
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. Continued from previous permit.

Nitrate plus Nitrite
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. Continued from previous permit.

Nitrogen, Total (TN)
Nitrogen is expected to be present in this discharge therefore monthly monitoring is continued based on best professional judgment. Continued from previous permit.

OTHER:

Chloride
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of chloride. The facility reported 2210 mg/L in the application and 2000 mg/L in the single discharge over the last permit term.

Sulfate
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate. The facility reported 4380 mg/Lin the application and 3900 mg/L in the single discharge over the last permit term.

Chloride Plus Sulfate
The facility reported 5900 to 6590 mg/L in the last permit term and application respectively. The parameter has RP.

Final Effluent Limits: Acute AQL: 1000 mg/L per 10 CSR 20-7.031(5)(L)

Whole Effluent Toxicity (WET) Test, Chronic; alternatively Acute

Reasonable potential exists for the discharge to cause toxicity within the receiving stream based on the factors listed in Part III, REASONABLE POTENTIAL, and WHOLE EFFLUENT TOXICITY (WET) TEST and because of the numerous toxic pollutants limited in the permit. This is a new parameter; no toxicity data exist. An interim limit is not being established. There is no literature that combines the toxicity of boron, selenium, and chloride, therefore no numeric analysis can be completed for these interim values to derive a possible interim TUa or TUc limit.

This permit allows a discharge exceeding four days in length – the chronic criteria of toxicity and metals is based on 4-day exposure. That is why the chronic WET tests require three samples; spaced evenly, (usually Monday/Wednesday/Friday) to be submitted to the laboratory to determine chronic toxicity. However, the discharge from the UWL leachate system is not expected nor required to discharge more than 1 day. For these reasons, the facility is required to perform an acute test at a minimum, and attempt to collect two additional samples to complete a chronic test and meet the test acceptability criteria for the test. The facility is only required to complete one WET test per year; but if the discharge is less than 120 hours, the chronic test cannot be completed. For discharges less than 120 hours, the acute test will be completed. For discharges greater than 120 hours, the chronic test will be completed.

The standard dilution series for facilities discharging to waterbodies with no mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25% as 10 CSR 20-7.015((9)(L)4.A states the dilution series must be proportional. There are no interim limits. For final limits, the following applies. For acute tests where no mixing is allowed, the 0.3 TUa criterion must be met at the end of the pipe. However, when using an LC_{50} as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC_{50} value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration (AEC) is 100%, a minimum level (ML) of 1.0 TUa will apply. For the chronic test, the chronic 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 §1.3.4 (page 18) and Appendix A of the March 1991 TSD. The standard Allowable Effluent Concentration (AEC) for facilities without mixing considerations is 100%.

Acute Limit Derivation:
Acute AQL: 0.3 TUa
The AEC is (0.644 CFSdf / (0 CFSzid +0.644 CFSdf)) = 100%
Acute WLA: Ce = ((0.644 CFSdf + 0 cfsZID) * 0.3 – (0 cfsZID * 0 background)) / 0.644 CFSdf = 0.3
LTAa: WLAa * LTAa multiplier = 0.3 * 0.321 = 0.096 [CV: 0.6, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 0.096 * 3.114 = 0.3 TU [CV: 0.6, 99th %ile]
The limit established in this permit is below the detection limit for this test; the compliance value is set at 1.0 TUa.

Chronic Limit Derivation:
Acute AQL: 0.3 TUa
Chronic Assumption: 1 TUc
The AEC is (0.644 CFSdf / (0 CFSzid +0.644 CFSdf)) = 100%
Acute WLA: Ce = ((0.644 CFSdf + 0 CFSzid) * 0.3 – (0 CFSzid * 0 background)) / 0.644 CFSdf] * ACR of 10 = 3
Chronic WLA: Ce = ((0.644 CFSdf + 0 CFSmz) * 1 – (0 CFSmz * 0 background)) / 0.644 CFSdf = 1
LTAa,c: WLAa * LTAa multiplier = 3 * 0.321 = 0.963 [CV: 0.6, 99th %ile]
LTAc: WLAc * LTAc multiplier = 1 * 0.527 = 0.527 [CV: 0.6, 99th %ile]
use most protective LTA: 0.527
Daily Maximum: MDL = LTA * MDL multiplier = 0.527 * 3.114 = 1.6 TUc [CV: 0.6, 99th %ile]

OUTFALL #011 – UWL CONTACT STORMWATER

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAXIMUM LIMIT	BENCH-MARK	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	-	QUARTERLY	ONE/MONTH	MONTHLY	24 HR. ESTIMATE
CONVENTIONAL							
COD	mg/L	**	90	*	ONE/MONTH	MONTHLY	GRAB
OIL & GREASE	mg/L	**	10	SAME	ONE/MONTH	MONTHLY	GRAB
PH †	SU	6.5 TO 9.0	-	SAME	ONE/MONTH	MONTHLY	GRAB
TSS	mg/L	**	100	SAME	ONE/MONTH	MONTHLY	GRAB
METALS							
ALUMINUM, TR	µg/L	**	1100	*	ONE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	-	SAME	ONE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	-	SAME	ONE/MONTH	MONTHLY	GRAB
CHLORIDE + SULFATE	mg/L	**	2000	*	ONE/MONTH	MONTHLY	GRAB
SURFACTANTS	mg/L	**	1	*	ONE/MONTH	MONTHLY	GRAB

* monitoring and reporting requirement only
** monitoring with associated benchmark
† report the minimum and maximum pH values; pH is not to be averaged
new parameter not established in previous state operating permit
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:
This permit renewal splits contact (this outfall) and non-contact stormwater previously discharged together into contact stormwater only being discharged through this outfall. This outfall discharged only twice during the last permit term. Because it is stormwater only, and RPD was conducted, instead of an RPA. Quarterly monitoring changed to monthly as this is higher strength stormwater than other types of industrially exposed stormwater.

PHYSICAL:

Flow
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility 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). The facility reported 0.1045 and 0.936 MGD in the last permit term.

Precipitation
Reporting precipitation is no longer required by this permit. This is not backsliding because precipitation was not limited in the previous permit.

CONVENTIONAL:

Chemical Oxygen Demand (COD)
Monitoring with 90 mg/L daily maximum benchmark is included using best professional judgment under 10 CSR 20-6.200(6)(B)2.C. There is no numeric water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the facility to identify increases in COD may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. The facility reported 18 and 28 mg/L in the last permit term. The benchmark value falls within the range of values implemented in other permits having similar industrial activities and is achievable through proper BMP controls.

Oil & Grease
Monitoring with a daily maximum benchmark of 10 mg/L; continued from the previous permit using best professional judgment under 10 CSR 20-6.200(6)(B)2.C. The facility reported non-detects in the last permit term. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or xylene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as "oil and grease". Per 10 CSR 20-7.031 Table A1: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR 20-7.031(4). Ten mg/L is the level at which sheen is expected to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the facility to visually observe the discharge and receiving waters for sheen or bottom deposits. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities. The benchmark this permit applies does not allow the facility to violate general criteria 10 CSR 20-7.015(4) even if data provided are below the benchmark.

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall. pH is a fundamental water quality indicator. Additionally, metals leachability and ammonia availability in wastewater is dependent on pH. Limitations in this permit will protect against aquatic organism toxicity, downstream water quality issues, human health hazard contact, and negative physical changes in accordance with the general criteria at 10 CSR 20-7.031(4) and the Clean Water Act's (CWA) goal of 100% fishable and swimmable rivers and streams. This parameter has RP. One exceedance (9.38 SU) was reported over the last permit term. The other value reported was 8.67 SU.

Total Suspended Solids (TSS)
Monitoring with a daily maximum benchmark of 100 mg/L. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the facility to identify increases in TSS indicating uncontrolled materials leaving the site. 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. The facility reported 3.1 and 5.6 mg/L in the last permit term. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

METALS:

Aluminum, Total Recoverable
The previous permit required monitoring. the facility reported 654 and 1179 µg/L in the last permit term. The 2021 MSGP has identified an aluminum benchmark of 1,100 µg/L as appropriate for several sectors, including coal handling sites. The aluminum is originating from coal ash contact therefore the benchmark is established at 1,100 µg/L. This will maintain compliance with Missouri's WQS, because at the time of discharge, the receiving streams are no longer at 0 flow, therefore toxicity is tempered by other stormwater flows.

Cyanide, Total Recoverable
Previous permit was monitoring only; the facility reported non-detects in the last permit term. Monitoring is no longer required.

Fluoride
Previous permit was monitoring only; the the data supplied does not show reasonable potential or necessitate additional sampling. Monitoring is no longer required.

NUTRIENTS:
Nutrient monitoring was removed; 7.015(9)(D)8. does not apply to stormwater. Data supplied for nutrients over the last permit term show no RP; most were non-detects.

OTHER:

Chloride
Monitoring required to determine chloride plus sulfate below; continued from previous permit. The facility shall sample and independently report the analytical value of chloride. The facility reported 111.5 and 213 mg/L in the last permit term.

Sulfate
Monitoring required to determine chloride plus sulfate below; continued from previous permit. The facility shall sample and independently report the analytical value of sulfate. The facility reported 1002 and 1471 mg/Lin the last permit term. Sulfate is a primary indicator of coal ash. No sulfate WQS are applicable to this discharge.

Chloride Plus Sulfate
The facility reported 1113.5 and 1684 mg/L in the last permit term. A benchmark is warranted for this parameter. WQS for constant discharges is 1000 mg/L. However, this discharge is intermittent, and stormwater. See Part III STORMWATER PERMITTING for more information. This permit establishes a benchmark of 2000 mg/L for chloride plus sulfate. There is no WQ RP, the value chosen is based on the performance of the facility.

Surfactants
Monitoring in the last permit showed surfactants were present. Given that toxicity of surfactants are immediately toxic in certain amounts, monitoring is continued. Some surfactants or surfactant-type materials are used to suppress dust. Surfactants, also known as foaming agents, are widely used in commercial and domestic detergents and other cleaning products. One of the most commonly used surfactants is LAS (Linear Alkylbenzene Sulfonate). LAS is considered extremely toxic to aquatic life. LAS can be toxic to invertebrates and fish at levels ranging from 0.1 mg/L to 40 mg/L, dependent on a variety of factors, including: life stage, dissolved oxygen content, water hardness, and temperature (Abel 1974). LAS has been shown to cause gill damage, retardation of growth, alteration of feeding behavior, and inhibition of chemoreceptor organs in fish (Abel 1974 and Misra et al. 1985). The State of Missouri does not have water quality standards instituted for surfactants. However, surfactants in the water can impair general criteria found in 10 CSR 20-7.031: "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;" and, due to their ability to cause both a sheen and foam on the surface of the water, "Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses." General criteria are applicable to all waters of the State of Missouri at all times, including mixing zones. Many other states have water quality standards for surfactants; notably, Florida and Puerto Rico set their limits at 0.5 mg/L (State of Florida 2010 and EPA 2014). Internationally, the limits are much lower, with 0.001 mg/L being the accepted standard, effectively banning the substance from discharge (Renner 1997). Utilizing best professional judgment monitoring is continued with a benchmark of 1 mg/L.

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OUTFALLS #ST1, #LC2, #LC3, #LC4, #ST5 – UWL NON-CONTACT STORMWATER

Outfalls #ST1, #LC2, #LC3, #LC4, #ST5 discharge non-contact stormwater from the onsite utility waste landfill. Cover has been placed on areas of the landfill to protect from exposure to rain, snow, snowmelt, and runoff. No exposure certification is appropriate as long as adequate cover is maintained. While a no-exposure certification can not be granted to a facility with wastewater discharges, a permit may contain an explanation that the outfalls are non-exposure outfalls. The facility has agreed to maintain these outfalls as no exposure by performing monthly cover inspections. See special conditions.

PART V. ADMINISTRATIVE REQUIREMENTS

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

PERMIT SYNCHRONIZATION
Permits are normally issued on a five-year term, but to achieve watershed synchronization some permits will need to be issued for less than the full five years as 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. This will allow the department to explore a watershed based permitting effort at some point in the future.

- ✓ This permit is not to be synchronized due to the complexity and the required activities identified in special conditions that must occur prior to the next renewal.

PUBLIC NOTICE
The department shall give public notice a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and facility must be notified of the denial in writing. https://dnr.mo.gov/water/what-were-doing/public-notices The department must issue public notice of a pending operating permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

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

- ✓ The Public Notice period for this operating permit started January 27, 2023 and ended February 27, 2023. No comments were received.

After the end of the PN comment period, the facility indicated they has more accurately mapped the landfill non-contact stormwater outfalls. The locations were adjusted slightly in the facility description of the permit. The physical locations of the outfalls have not changed.

DATE OF FACT SHEET: MARCH 1, 2023

COMPLETED BY:
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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
August 1, 2019

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.
2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Biosolids and Sludge Use and Disposal Practices:
    a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.
4. Biosolids or Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee's design sludge capacity is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge
5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.
6. This permit does not preclude the enforcement of other applicable 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 biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department may modify a site-specific permit following permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR § 124.10, and 40 CFR § 501.15(a)(2)(ix)(E).
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures 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, feed 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 Part 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 (PSRP) in accordance with 40 CFR Part 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. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limted to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater 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. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. 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.
14. 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), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined 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.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RSMo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RSMo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

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

1. Permittees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
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, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or 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 biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or 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 biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or 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 biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
    b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes "Class A" or "Class B" biosolids derived from domestic wastewater 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.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
    a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
    b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
    c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
    d. Animal grazing shall not be allowed for 30 days after application of biosolids.
    e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
    f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
    g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
    h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.

5. Pollutant limits
    a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
    b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). 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 achieve pollutant concentration below those identified in Table 1, below.
    c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

Biosolids ceiling concentration	
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

d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track polluntant loading onto application sites for parameters that have exceeded the low metal concentration limits.

TABLE 2

Biosolids Low Metal Concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

e. Annual pollutant loading rate.

Table 3

Biosolids Annual Loading Rate	
Pollutant	Kg/ha (lbs./ac) per year
Arsenic	2.0 (1.79)
Cadmium	1.9 (1.70)
Copper	75 (66.94)
Lead	15 (13.39)
Mercury	0.85 (0.76)
Nickel	21 (18.74)
Selenium	5.0 (4.46)
Zinc	140 (124.96)

f. Cumulative pollutant loading rates.

Table 4

Biosolids Cumulative Pollutant Loading Rate	
Pollutant	Kg/ha (lbs./ac)
Arsenic	41 (37)
Cadmium	39 (35)
Copper	1500 (1339)
Lead	300 (268)
Mercury	17 (15)
Nickel	420 (375)
Selenium	100 (89)
Zinc	2800 (2499)

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
   a. Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
   b. Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
   c. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; 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:

(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. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis.

ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.

iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.

d. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, 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 outstandingstate resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;

iii. 150 feet of dwellings or public use areas;

iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);

v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.

vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.

e. Slope limitation for application sites are as follows:

i. For slopes less than or equal to 6 percent, 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.

iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.

f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.

g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:

i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of mthods or technology refletive of combination surface/shallow soil incorporation;

ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not included the use of methods or technology refletive of combination surface/shallow soil incorporation;

iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic 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 mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. 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.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I– CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. 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 sludges and/or biosolids. 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. Biosolids or sludge 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. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
    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. Alternative, site-specific application rates may be included in the closure plan for department consideration.
        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. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are "similar treatment works" under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. 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. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, 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. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure 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 plant, all biosolids or 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. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.

c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo 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, reclamation, or other beneficial use. Other solid wastes must be removed.

8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, 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 Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, biosolids or sludge 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

Biosolids or Sludge produced and disposed (Dry Tons per Year)	Monitoring Frequency (See Notes 1, and 2)		
	Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium	Nitrogen TKN, Nitrogen PAN[1]	Priority Pollutants[2]
319 or less	1/year	1 per month	1/year
320 to 1650	4/year	1 per month	1/year
1651 to 16,500	6/year	1 per month	1/year
16,501+	12/year	1 per month	1/year

[1] 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.

[2] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pre-treatment program. Monitoring requirements may be modified and incorporated into the operating permit by the Department on a case-by-case basis.

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: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. 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.
4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – 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 Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
   a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:
   Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:

   DNR regional or other applicable office listed in the
   permit (see cover letter of permit)
   ATTN: Sludge Coordinator

Reports to EPA must be electronically submitted online via the Central Data Exchange at: https://cdx.epa.gov/ Additional information is available at: https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws

5. Annual report contents. The annual report shall include the following:
    a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
    b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/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 and 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 using a 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 biosolids or sludge 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 and phosphorus. If no soil was tested during the year, report the last date when tested and the results.

AP37617

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: 09/30/21	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 – 0082996, 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 – _____ 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	
Iatan Generating Station		816-654-1767	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
20250 Highway 45 North	Weston	MO	64098

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
Evergy, Inc.		785-508-2443	
EMAIL ADDRESS			
jared.morrison@evergy.com			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
818 South Kansas Avenue	Topeka	KS	66612

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Evergy, Inc.		785-508-2443	
EMAIL ADDRESS			
jared.morrison@evergy.com			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
818 South Kansas Avenue	Topeka	KS	66612

5. OPERATOR CERTIFICATION

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

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
Jared Morrison	Director, Environmental Services	785-508-2443
E-MAIL ADDRESS		
jared.morrison@evergy.com		

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

NAME			
Robert L. and Delores Baker			
ADDRESS	CITY	STATE	ZIP CODE
831 Thomas St.	Weston	MO	64098

8. ADDITIONAL FACILITY INFORMATION

8.1 Legal Description of Outfalls. (Attach additional sheets if necessary.) See Attached Table

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 _____¼ _____¼ Sec _____ T _____ R _____ _____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 _____¼ _____¼ Sec _____ T _____ R _____ _____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

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

Primary SIC 4911 and NAICS 221112 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.

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

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 http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☑ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

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

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

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
Mark Howell, Sr. Director Plant Operations	816-640-3682
SIGNATURE: Mark Howell	DATE SIGNED: 9/28/2021

Form C

Intake and Outfalls 001, 003, 007,
008, 010 and 011

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

Iatan Generating Station

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

MO-0082996

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.

Iatan is a steam electrical power generation plant primarily engaged in the generation of electricity for distribution and sale, located in Platte County. The plant consists of two generating units with a total estimated capability of about 1,596 MW.

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
001	Unit 1 once-through non-contact cooling water	50,030(50,030)GPM	No Treatment	4-A
003	Pretreatment blowdown, filter backwash, etc.	0 (0) GPM	Settling, coag., floccula, recyc	1-U, 4-C,1-G,2-D
007	Stormwater only	996 (2,317) GPM	No Treatment	4-A
008	Stormwater only	2,203 (5,652) GPM	No Treatment	4-A
010	Landfill leachate	0 (41) GPM	Settling, neutralization, recycl	1-U, 2-K, 4-C,2-D
011	Landfill stormwater runoff	1,618 (5,088) GPM	Settling, neutralization, recycl	1-U, 2-K, 4-C,2-D

Attach additional pages if necessary.

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	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

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 423 Subpart(s) 12-13 ☐ 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
Permit Condition	007 & 008	Aluminum study or project to meet future limitations	4/1/2023	4/1/2023
Permit Condition	001	316(b) and Thermal limitations	TBD	TBD

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.

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.

None

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			

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.

None.

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 Services	9608 Loriet Blvd. Lenexa, KS 66219	913-599-5665	Radioactivity, Cyanide, Phenols, Volatile Compounds, Acid Compounds, Base/Neutral Comp.

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
003	163 acres	coal pile, vegetated, paved	water treatment basin for settling and treatment
007	21 acres	pavement, gravel, vegetates	sedimentation through conveyance system
008	43 acres	pavement, grass	sedimentation through conveyance system
011	135 acres	grass, gravel, landfill	water treatment basin for settling and treatment

4.2 STORMWATER FLOWS
Provide the date of sampling with the flows, and how the flows were estimated.
Flows determined in 2017 stormwater study

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
Mark Howell, Sr. Director Plant Operations	816-640-3862
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
Mark Howell	9/28/2021

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: Once-through non-contact cooling water — OUTFALL NO. 001

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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	2.8	11011	-	-	-	-	1	mg/L	lbs
B. Chemical Oxygen Demand (COD)	20.2	79434	-	-	-	-	1	mg/L	lbs
C. Total Organic Carbon (TOC)	3.7	14550	-	-	-	-	1	mg/L	lbs
D. Total Suspended Solids (TSS)	77.2	303578	-	-	-	-	1	mg/L	lbs
E. Ammonia as N	<0.10	<393	-	-	-	-	1	mg/L	lbs
F. Flow	VALUE 471.2		VALUE 470.9		VALUE 439.7		457	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE 69.0		VALUE 53.7		VALUE 52.0		90	°F	
H. Temperature *(summer)*	VALUE 109.9		VALUE 101.4		VALUE 95.4		154	°F	
I. pH	MINIMUM 8.50		MAXIMUM 8.50		AVERAGE 8.50		1	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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)	x		MINIMUM 203	798268	MINIMUM		MINIMUM		1	mg/L	lbs
B. Bromide (24959-67-9)		x	<1.0	<3932					1	mg/L	lbs
C. Chloride (16887-00-6)	x		23.7	93197					1	mg/L	lbs
D. Chlorine, Total Residual	x		0.08	0.315					1	ug/L	lbs
E. Color	x		50						1	units	
F. Conductivity	x		779						1	umhos/cm	
F. Cyanide, Amenable to Chlorination		x	<0.010	<39.32					1	mg/L	lbs

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		52	927516736					1	mpn/100ml	MPN
H. Fluoride (16984-48-8)	x		0.47	1848					1	mg/L	lb
I. Nitrate plus Nitrate *(as N)*	x		0.25	983					1	mg/L	lb
J. Kjeldahl, Total (as N)	x		1.2	4718					1	mg/L	lb
K. Nitrogen, Total Organic *(as N)*	x		1.2	4718					1	mg/L	lb
L. Oil and Grease		x	<5.2	<20448					1	mg/L	lb
M. Phenols, Total		x	<4.9	<19.3					1	ug/L	lb
N. Phosphorus *(as P),* Total (7723-14-0)	x		0.17	668.5					1	mg/L	lb
O. Sulfate *(as SO^4)* (14808-79-8)	x		216	849388.6					1	mg/L	lb
P. Sulfide *(as S)*	x		0.081	318.5					1	mg/L	lb
Q. Sulfite (as SO^3) (14265-45-3)		x	<2.0	<7864.7					1	mg/L	lb
R. Surfactants		x									
S. Trihalomethanes, Total		x	<1.0	<3.9					1	ug/L	lb
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		1720	6763.6					1	ug/L	lb
2M. Antimony, Total Recoverable (7440-36-9)		x	<1.0	<3.9					1	ug/L	lb
3M. Arsenic, Total Recoverable (7440-38-2)	x		4.1	16.12					1	ug/L	lb
4M. Barium, Total Recoverable (7440-39-3)	x		99.7	392.1					1	ug/L	lb
5M. Beryllium, Total Recoverable (7440-41-7)		x	<0.50	1.97					1	ug/L	lb
6M. Boron, Total Recoverable (7440-42-8)	x		126	495.5					1	ug/L	lb
7M. Cadmium, Total Recoverable (7440-43-9)		x	<0.50	<1.97					1	ug/L	lb
8M. Chromium III Total Recoverable (16065-83-1)	x		2.2	8.65					1	ug/L	lb
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010	<39.3					1	mg/L	lb
10M. Cobalt, Total Recoverable (7440-48-4)		x	<5.0	19.7					1	ug/L	lb

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		3.1	12.2					1	ug/L	lb
12M. Iron, Total Recoverable (7439-89-6)	x		1930	7589.4					1	ug/L	lb
13M. Lead, Total Recoverable (7439-92-1)	x		1.5	5.9					1	ug/L	lb
14M. Magnesium, Total Recoverable (7439-95-4)	x		26000	102241					1	ug/L	lb
15M. Manganese, Total Recoverable (7439-96-5)	x		193	758.9					1	ug/L	lb
16M. Mercury, Total Recoverable (7439-97-6)		x	<0.20	<0.79					1	ug/L	lb
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)		x	<20.0	78.7					1	ug/L	lb
19M. Nickel, Total Recoverable (7440-02-0)	x		4.3	16.9					1	ug/L	lb
20M. Selenium, Total Recoverable (7782-49-2)	x		2.9	11.4					1	ug/L	lb
21M. Silver, Total Recoverable (7440-22-4)		x	<0.50	<1.97					1	ug/L	lb
22M. Thallium, Total Recoverable (7440-28-0)		x	<1.0	<3.93					1	ug/L	lb
23M. Tin, Total Recoverable (7440-31-5)		x	<50.0	196.6					1	ug/L	lb
24M. Titanium, Total Recoverable (7440-32-6)	x		33.1	130.2					1	ug/L	lb
25M. Zinc, Total Recoverable (7440-66-6)		x	<10.0	39.3					1	ug/L	lb
Subpart 3 – Radioactivity											
1R. Alpha Total	x		6.83 ± 2.48						1	pCi/L	
2R. Beta Total	x		6.46 ± 1.45						1	pCi/L	
3R. Radium Total	x		0.763 ± 0.986						1	pCi/L	
4R. Radium 226 plus 228 Total	x		0.763 ± 0.986						1	pCi/L	

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: Intake on MO River | OUTFALL NO. Intake

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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	3.1	12190					1	mg/L	lbs
B. Chemical Oxygen Demand (COD)	18.6	73142					1	mg/L	lbs
C. Total Organic Carbon (TOC)	3.7	14550					1	mg/L	lbs
D. Total Suspended Solids (TSS)	73.3	288242					1	mg/L	lbs
E. Ammonia as N	<0.10	<393					1	mg/L	lbs
F. Flow	VALUE 471.2		VALUE 470.9		VALUE 439.7		457	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE		VALUE		VALUE			°F	
I. pH	MINIMUM		MAXIMUM		AVERAGE			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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)	x		MINIMUM 208	817929.8	MINIMUM		MINIMUM		1	mg/L	lbs
B. Bromide (24959-67-9)		x	<1.0	<3932.4					1	mg/L	lbs
C. Chloride (16887-00-6)	x		23.8	93590.0					1	mg/L	lbs
D. Chlorine, Total Residual	x		0.07	0.28					1	ug/L	lbs
E. Color	x		40						1	units	
F. Conductivity	x		779						1	umhos/cm	
F. Cyanide, Amenable to Chlorination		x	<0.010	<39.32					1	mg/L	lbs

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		41	731311273					1	mpn/100ml	MPN
H. Fluoride (16984-48-8)	x		0.47	1848.2					1	mg/L	lbs
I. Nitrate plus Nitrate *(as N)*	x		0.25	938.1					1	mg/L	lbs
J. Kjeldahl, Total (as N)	x		1.3	5112.1					1	mg/L	lbs
K. Nitrogen, Total Organic *(as N)*	x		1.3	5112.1					1	mg/L	lbs
L. Oil and Grease		x	<4.9	<19268.5					1	mg/L	lbs
M. Phenols, Total		x	<5.0	<19.7					1	ug/L	lbs
N. Phosphorus *(as P),* Total (7723-14-0)	x		0.15	589.9					1	mg/L	lbs
O. Sulfate *(as SO^4)* (14808-79-8)	x		225	884779.8					1	mg/L	lbs
P. Sulfide *(as S)*	x		0.055	216.3					1	mg/L	lbs
Q. Sulfite (as SO^3) (14265-45-3)		x	<2.0	<7864.7					1	mg/L	lbs
R. Surfactants		x									
S. Trihalomethanes, Total		x	<1.0	<3.9					1	ug/L	lbs
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		1500	5898.5					1	ug/L	lbs
2M. Antimony, Total Recoverable (7440-36-9)		x	<1.0	<3.9					1	ug/L	lbs
3M. Arsenic, Total Recoverable (7440-38-2)	x		4.2	16.5					1	ug/L	lbs
4M. Barium, Total Recoverable (7440-39-3)	x		99.5	391.3					1	ug/L	lbs
5M. Beryllium, Total Recoverable (7440-41-7)		x	<0.50	<2.0					1	ug/L	lbs
6M. Boron, Total Recoverable (7440-42-8)	x		123	483.7					1	ug/L	lbs
7M. Cadmium, Total Recoverable (7440-43-9)		x	<0.50	2.0					1	ug/L	lbs
8M. Chromium III Total Recoverable (16065-83-1)	x		2.1	8.3					1	ug/L	lbs
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010	39.3					1	ug/L	lbs
10M. Cobalt, Total Recoverable (7440-48-4)		x	<5.0	19.7					1	ug/L	lbs

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		3.1	12.2					1	ug/L	lbs
12M. Iron, Total Recoverable (7439-89-6)	x		1780	6999.6					1	ug/L	lbs
13M. Lead, Total Recoverable (7439-92-1)	x		1.5	5.9					1	ug/L	lbs
14M. Magnesium, Total Recoverable (7439-95-4)	x		26100	102634.5					1	ug/L	lbs
15M. Manganese, Total Recoverable (7439-96-5)	x		184	723.6					1	ug/L	lbs
16M. Mercury, Total Recoverable (7439-97-6)		x	<0.20	<0.79					1	ug/L	lbs
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)		x	<20.0	78.6					1	ug/L	lbs
19M. Nickel, Total Recoverable (7440-02-0)	x		4.0	15.7					1	ug/L	lbs
20M. Selenium, Total Recoverable (7782-49-2)	x		2.9	11.4					1	ug/L	lbs
21M. Silver, Total Recoverable (7440-22-4)		x	<0.50	<2.0					1	ug/L	lbs
22M. Thallium, Total Recoverable (7440-28-0)		x	<1.0	<3.9					1	ug/L	lbs
23M. Tin, Total Recoverable (7440-31-5)		x	<50.0	<196.6					1	ug/L	lbs
24M. Titanium, Total Recoverable (7440-32-6)	x		29.7	116.8					1	ug/L	lbs
25M. Zinc, Total Recoverable (7440-66-6)		x	<10.0	39.3					1	ug/L	lbs
Subpart 3 – Radioactivity											
1R. Alpha Total	x		4.31 ± 1.97						1	pCi/L	
2R. BetaTotal	x		6.60 ± 1.37						1	pCi/L	
3R. Radium Total	x		0.393 ± 0.496						1	pCi/L	
4R. Radium 226 plus 228 Total	x		0.393 ± 0.496						1	pCi/L	

Non-Discharging Dip Samples Collected from Holding Basin

Due to no flow conditions, mass value reported is 0 for all parameters

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: Holding Basin to MO River — 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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	<2.0						1	mg/L	
B. Chemical Oxygen Demand (COD)	42.0						1	mg/L	
C. Total Organic Carbon (TOC)	3.2						1	mg/L	
D. Total Suspended Solids (TSS)	52.7						1	mg/L	
E. Ammonia as N	<0.10						1	mg/L	
F. Flow	VALUE 0		VALUE 0		VALUE 0		256	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE		VALUE		VALUE			°F	
I. pH	MINIMUM 8.41		MAXIMUM		AVERAGE		1	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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)	x		MINIMUM 108		MINIMUM		MINIMUM		1	mg/L	
B. Bromide (24959-67-9)		x	<1.0						1	mg/L	
C. Chloride (16887-00-6)	x		33.5						1	mg/L	
D. Chlorine, Total Residual		x									
E. Color	x		75						1	units	
F. Conductivity	x		867						1	umhos/co	
F. Cyanide, Amenable to Chlorination		x	<0.010						1	mg/L	

Non-Discharging Dip Samples Collected from Holding Basin
Due to no flow conditions, mass value reported is 0 for all parameters

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		121						1	mpn/100ml	
H. Fluoride (16984-48-8)	x		0.37						1	mg/L	
I. Nitrate plus Nitrate *(as N)*	x		0.70						1	mg/L	
J. Kjeldahl, Total (as N)	x		0.91						1	mg/L	
K. Nitrogen, Total Organic *(as N)*	x		0.91						1	mg/L	
L. Oil and Grease		x	<5.1						1	mg/L	
M. Phenols, Total		x	<4.9						1	mg/L	
N. Phosphorus *(as P),* Total (7723-14-0)	x		0.16						1	mg/L	
O. Sulfate *(as SO^4)* (14808-79-8)	x		278						1	mg/L	
P. Sulfide *(as S)*	x		0.15						1	mg/L	
Q. Sulfite (as SO^3) (14265-45-3)		x	<2.0						1	mg/L	
R. Surfactants		x									
S. Trihalomethanes, Total		x	<1.0						1	ug/L	
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		1310						1	ug/L	
2M. Antimony, Total Recoverable (7440-36-9)		x	<1.0						1	ug/L	
3M. Arsenic, Total Recoverable (7440-38-2)	x		2.5						1	ug/L	
4M. Barium, Total Recoverable (7440-39-3)	x		242						1	ug/L	
5M. Beryllium, Total Recoverable (7440-41-7)		x	<0.50						1	ug/L	
6M. Boron, Total Recoverable (7440-42-8)	x		330						1	ug/L	
7M. Cadmium, Total Recoverable (7440-43-9)		x	<0.50						1	ug/L	
8M. Chromium III Total Recoverable (16065-83-1)	x		5.2						1	ug/L	
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010						1	ug/L	
10M. Cobalt, Total Recoverable (7440-48-4)		x	<5.0						1	ug/L	

Non-Discharging Dip Samples Collected from Holding Basin

Due to no flow conditions, mass value reported is 0 for all parameters

003

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		4.2						1	ug/L	
12M. Iron, Total Recoverable (7439-89-6)	x		1190						1	ug/L	
13M. Lead, Total Recoverable (7439-92-1)		x	<1.0						1	ug/L	
14M. Magnesium, Total Recoverable (7439-95-4)	x		22100						1	ug/L	
15M. Manganese, Total Recoverable (7439-96-5)	x		51.6						1	ug/L	
16M. Mercury, Total Recoverable (7439-97-6)		x	<0.20						1	ug/L	
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)		x	<20.0						1	ug/L	
19M. Nickel, Total Recoverable (7440-02-0)	x		2.4						1	ug/L	
20M. Selenium, Total Recoverable (7782-49-2)	x		2.3						1	ug/L	
21M. Silver, Total Recoverable (7440-22-4)		x	<0.50						1	ug/L	
22M. Thallium, Total Recoverable (7440-28-0)		x	<1.0						1	ug/L	
23M. Tin, Total Recoverable (7440-31-5)		x	<50.0						1	ug/L	
24M. Titanium, Total Recoverable (7440-32-6)	x		44.4						1	ug/L	
25M. Zinc, Total Recoverable (7440-66-6)		x	<10.0						1	ug/L	
Subpart 3 – Radioactivity											
1R. Alpha Total	x		0.438 ± 1.32						1	pCi/L	
2R. Beta Total	x		9.13 ± 2.28						1	pCi/L	
3R. Radium Total	x		1.22 ± 1.01						1	pCi/L	
4R. Radium 226 plus 228 Total	x		1.22 ± 1.01						1	pCi/L	

Sampled for parameters listed in 10 CSR 20.6200(2)(C)(1)
Mass is based on two data points for flow from 1st & 2nd Qtr. 2021

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: Industrial Stormwater Only — OUTFALL NO. 007

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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	<2.0	<0.06					1	mg/L	lbs
B. Chemical Oxygen Demand (COD)	<10.0	<0.29					1	mg/L	lbs
C. Total Organic Carbon (TOC)	2.4	0.07					1	mg/L	lbs
D. Total Suspended Solids (TSS)	26.0	0.76					1	mg/L	lbs
E. Ammonia as N	0.24	0.01					1	mg/L	lbs
F. Flow	VALUE 0.165		VALUE 0.165		VALUE 0.021		12	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE 75.02		VALUE		VALUE		1	°F	
I. pH	MINIMUM 7.86		MAXIMUM 8.39		AVERAGE 8.24		8	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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)		X	MINIMUM		MINIMUM		MINIMUM				
B. Bromide (24959-67-9)		X									
C. Chloride (16887-00-6)	X		1.2	0.04					1	mg/L	lbs
D. Chlorine, Total Residual		X									
E. Color		X									
F. Conductivity	X		70.9						1	umhos/cm	
F. Cyanide, Amenable to Chlorination		X	<0.010	<0.00					1	mg/L	lbs

Sampled for parameters listed in 10 CSR 20.6200(2)(C)(1)
Mass is based on two data points for flow from 1st & 2nd Qtr. 2021

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									
H. Fluoride (16984-48-8)		x	<0.20	<0.01					1	mg/L	lbs
I. Nitrate plus Nitrate *(as N)*	x		0.24	0.01					1	mg/L	lbs
J. Kjeldahl, Total (as N)	x		0.85	0.02					1	mg/L	lbs
K. Nitrogen, Total Organic *(as N)*	x		0.60	0.02					1	mg/L	lbs
L. Oil and Grease		x	<4.9	<0.14					1	mg/L	lbs
M. Phenols, Total		x									
N. Phosphorus *(as P),* Total (7723-14-0)		x	<0.10	<0.00					1	mg/L	lbs
O. Sulfate *(as SO^4)* (14808-79-8)	x		1.3	0.04					1	mg/L	lbs
P. Sulfide *(as S)*		x									
Q. Sulfite (as SO^3) (14265-45-3)		x									
R. Surfactants		x									
S. Trihalomethanes, Total		x									
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		1010	0.03					1	ug/L	lbs
2M. Antimony, Total Recoverable (7440-36-9)		x									
3M. Arsenic, Total Recoverable (7440-38-2)		x									
4M. Barium, Total Recoverable (7440-39-3)		x									
5M. Beryllium, Total Recoverable (7440-41-7)		x									
6M. Boron, Total Recoverable (7440-42-8)		x	<100	<0.00					1	ug/L	lbs
7M. Cadmium, Total Recoverable (7440-43-9)		x	<0.50	<0.00					1	ug/L	lbs
8M. Chromium III Total Recoverable (16065-83-1)		x									
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010	<0.00					1	mg/L	lbs
10M. Cobalt, Total Recoverable (7440-48-4)		x									

Sampled for parameters listed in 10 CSR 20.6200(2)(C)(1)
Mass is based on two data points for flow from 1st & 2nd Qtr. 2021

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		2.1	0.00					1	ug/L	lbs
12M. Iron, Total Recoverable (7439-89-6)	x		1120	0.03					1	ug/L	lbs
13M. Lead, Total Recoverable (7439-92-1)		x									
14M. Magnesium, Total Recoverable (7439-95-4)	x		894	0.03					1	ug/L	lbs
15M. Manganese, Total Recoverable (7439-96-5)		x									
16M. Mercury, Total Recoverable (7439-97-6)		x									
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)		x									
19M. Nickel, Total Recoverable (7440-02-0)		x									
20M. Selenium, Total Recoverable (7782-49-2)		x	<1.0	<0.00					1	ug/L	lbs
21M. Silver, Total Recoverable (7440-22-4)		x									
22M. Thallium, Total Recoverable (7440-28-0)		x									
23M. Tin, Total Recoverable (7440-31-5)		x									
24M. Titanium, Total Recoverable (7440-32-6)		x									
25M. Zinc, Total Recoverable (7440-66-6)		x									
Subpart 3 – Radioactivity											
1R. Alpha Total		x									
2R. Beta Total		x									
3R. Radium Total		x									
4R. Radium 226 plus 228 Total		x									

Sampled for parameters listed in 10 CSR 20.6200(2)(C)(1)
Mass is based on two data points for flow from 1st & 2nd Qtr. 2021

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: Industrial Stormwater Only — OUTFALL NO. 008

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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	2.3	6.50					1	mg/L	lbs
B. Chemical Oxygen Demand (COD)	<10.0	<28.24					1	mg/L	lbs
C. Total Organic Carbon (TOC)	5.9	16.66					1	mg/L	lbs
D. Total Suspended Solids (TSS)	<5.0	14.12					1	mg/L	lbs
E. Ammonia as N	0.17	0.48					1	mg/L	lbs
F. Flow	VALUE 0.933		VALUE 0.933		VALUE 0.374		12	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE 76.46		VALUE		VALUE		1	°F	
I. pH	MINIMUM 8.07		MAXIMUM 8.74		AVERAGE 8.13		9	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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)		X	MINIMUM		MINIMUM		MINIMUM				
B. Bromide (24959-67-9)		X									
C. Chloride (16887-00-6)	X		10.6	29.94					1	mg/L	lbs
D. Chlorine, Total Residual		X									
E. Color		X									
F. Conductivity	X		843						1	umhos/cm	
F. Cyanide, Amenable to Chlorination		X	<0.010	<0.03					1	mg/L	lbs

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									
H. Fluoride (16984-48-8)	x		0.48	1.36					1	mg/L	lbs
I. Nitrate plus Nitrate *(as N)*	x		0.51	1.44					1	mg/L	lbs
J. Kjeldahl, Total (as N)	x		0.87	2.46					1	mg/L	lbs
K. Nitrogen, Total Organic *(as N)*	x		0.69	1.95					1	mg/L	lbs
L. Oil and Grease		x	<4.9	<13.84					1	mg/L	lbs
M. Phenols, Total		x									
N. Phosphorus *(as P),* Total (7723-14-0)	x		0.14	0.40					1	mg/L	lbs
O. Sulfate *(as SO^4)* (14808-79-8)	x		391	1104					1	mg/L	lbs
P. Sulfide *(as S)*		x									
Q. Sulfite (as SO^3) (14265-45-3)		x									
R. Surfactants		x									
S. Trihalomethanes, Total		x									
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		588	1.66					1	ug/L	lbs
2M. Antimony, Total Recoverable (7440-36-9)		x									
3M. Arsenic, Total Recoverable (7440-38-2)		x									
4M. Barium, Total Recoverable (7440-39-3)		x									
5M. Beryllium, Total Recoverable (7440-41-7)		x									
6M. Boron, Total Recoverable (7440-42-8)	x		232	0.66					1	ug/L	lbs
7M. Cadmium, Total Recoverable (7440-43-9)		x	<0.50	<0.00					1	ug/L	lbs
8M. Chromium III Total Recoverable (16065-83-1)		x									
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010	0.03					1	mg/L	lbs
10M. Cobalt, Total Recoverable (7440-48-4)		x									

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		1.9	0.01					1	ug/L	lbs
12M. Iron, Total Recoverable (7439-89-6)	x		392	1.11					1	ug/L	lbs
13M. Lead, Total Recoverable (7439-92-1)		x									
14M. Magnesium, Total Recoverable (7439-95-4)	x		8900	25.13					1	ug/L	lbs
15M. Manganese, Total Recoverable (7439-96-5)		x									
16M. Mercury, Total Recoverable (7439-97-6)		x									
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)		x									
19M. Nickel, Total Recoverable (7440-02-0)		x									
20M. Selenium, Total Recoverable (7782-49-2)	x		1.4	0.00					1	ug/L	lbs
21M. Silver, Total Recoverable (7440-22-4)		x									
22M. Thallium, Total Recoverable (7440-28-0)		x									
23M. Tin, Total Recoverable (7440-31-5)		x									
24M. Titanium, Total Recoverable (7440-32-6)		x									
25M. Zinc, Total Recoverable (7440-66-6)		x									
Subpart 3 – Radioactivity											
1R. Alpha Total		x									
2R. Beta Total		x									
3R. Radium Total		x									
4R. Radium 226 plus 228 Total		x									

Non-Discharging Dip Samples Collected at leachate pond
Due to no flow conditions, mass value reported is 0 for all parameters

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: Landfill Lechate — OUTFALL NO. 010

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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	3.6						1	mg/L	
B. Chemical Oxygen Demand (COD)	125						1	mg/L	
C. Total Organic Carbon (TOC)	1.8						1	mg/L	
D. Total Suspended Solids (TSS)	8.0						1	mg/L	
E. Ammonia as N	0.93						1	mg/L	
F. Flow	VALUE 0		VALUE 0		VALUE 0		7	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE		VALUE		VALUE			°F	
I. pH	MINIMUM 7.88		MAXIMUM		AVERAGE		1	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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)	X		MINIMUM 255		MINIMUM		MINIMUM		1	mg/L	
B. Bromide (24959-67-9)	X		166						1	mg/L	
C. Chloride (16887-00-6)	X		2210						1	mg/L	
D. Chlorine, Total Residual		X									
E. Color	X		45						1	units	
F. Conductivity	X		12900						1	umhos/cm	
F. Cyanide, Amenable to Chlorination	X		0.015						1	mg/L	

Non-Discharging Dip Samples Collected at leachate pond
Due to no flow conditions, mass value reported is 0 for all parameters

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		3448						1	mpn/100ml	
H. Fluoride (16984-48-8)	x		1.1						1	mg/L	
I. Nitrate plus Nitrate *(as N)*	x		0.69						1	mg/L	
J. Kjeldahl, Total (as N)	x		4.6						1	mg/L	
K. Nitrogen, Total Organic *(as N)*	x		3.7						1	mg/L	
L. Oil and Grease		x	<5.2						1	mg/L	
M. Phenols, Total		x	<4.9						1	mg/L	
N. Phosphorus *(as P),* Total (7723-14-0)		x	<0.10						1	mg/L	
O. Sulfate *(as SO^4)* (14808-79-8)	x		4380						1	mg/L	
P. Sulfide *(as S)*		x	<0.050						1	mg/L	
Q. Sulfite (as SO^3) (14265-45-3)		x	<2.0						1	mg/L	
R. Surfactants		x									
S. Trihalomethanes, Total		x	<1.0						1	ug/L	
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		217						1	ug/L	
2M. Antimony, Total Recoverable (7440-36-9)		x	<1.0						1	ug/L	
3M. Arsenic, Total Recoverable (7440-38-2)	x		4.4						1	ug/L	
4M. Barium, Total Recoverable (7440-39-3)	x		40.1						1	ug/L	
5M. Beryllium, Total Recoverable (7440-41-7)		x	<0.50						1	ug/L	
6M. Boron, Total Recoverable (7440-42-8)	x		3300						1	ug/L	
7M. Cadmium, Total Recoverable (7440-43-9)		x	<1.0						1	ug/L	
8M. Chromium III Total Recoverable (16065-83-1)		x	<1.0						1	ug/L	
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010						1	ug/L	
10M. Cobalt, Total Recoverable (7440-48-4)	x		5.1						1	ug/L	

Non-Discharging Dip Samples Collected at leachate pond
Due to no flow conditions, mass value reported is 0 for all parameters

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		1.2						1	ug/L	
12M. Iron, Total Recoverable (7439-89-6)	x		205						1	ug/L	
13M. Lead, Total Recoverable (7439-92-1)		x	<2.0						1	ug/L	
14M. Magnesium, Total Recoverable (7439-95-4)	x		254000						1	ug/L	
15M. Manganese, Total Recoverable (7439-96-5)	x		3970						1	ug/L	
16M. Mercury, Total Recoverable (7439-97-6)		x	<0.20						1	ug/L	
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)	x		322						1	ug/L	
19M. Nickel, Total Recoverable (7440-02-0)	x		50						1	ug/L	
20M. Selenium, Total Recoverable (7782-49-2)	x		19.8						1	ug/L	
21M. Silver, Total Recoverable (7440-22-4)		x	<1.0						1	ug/L	
22M. Thallium, Total Recoverable (7440-28-0)		x	<2.0						1	ug/L	
23M. Tin, Total Recoverable (7440-31-5)		x	<50.0						1	ug/L	
24M. Titanium, Total Recoverable (7440-32-6)		x	<10.0						1	ug/L	
25M. Zinc, Total Recoverable (7440-66-6)		x	<10.0						1	ug/L	
Subpart 3 – Radioactivity											
1R. Alpha Total	x		-18.9 ± 21.6						1	pCi/L	
2R. Beta Total	x		26.8 ± 12.8						1	pCi/L	
3R. Radium Total	x		1.31 ± 0.786						1	pCi/L	
4R. Radium 226 plus 228 Total	x		1.31 ± 0.786						1	pCi/L	

Non-Discharging Dip Samples Collected at stormwater pond
Due to no flow conditions, mass value reported is 0 for all parameters

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: Landfall Stormwater Runoff OUTFALL NO. 011

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. CONCEN-TRATION	B. MASS
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS			
A. Biochemical Oxygen Demand, 5-day (BOD_5)	<2.0						1	mg/L	
B. Chemical Oxygen Demand (COD)	46.6						1	mg/L	
C. Total Organic Carbon (TOC)	1.4						1	mg/L	
D. Total Suspended Solids (TSS)	8.2						1	mg/L	
E. Ammonia as N	<0.10						1	mg/L	
F. Flow	VALUE 0		VALUE		VALUE		1	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°F	
H. Temperature *(summer)*	VALUE		VALUE		VALUE			°F	
I. pH	MINIMUM 9.29		MAXIMUM 9.31		AVERAGE 9.30		1	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. CONCEN-TRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants											
A. Alkalinity ($CaCO_3$)	x		MINIMUM 42.2		MINIMUM		MINIMUM		1	mg/L	
B. Bromide (24959-67-9)	x		35.0						1	mg/L	
C. Chloride (16887-00-6)	x		621						1	mg/L	
D. Chlorine, Total Residual		x									
E. Color	x		25						1	units	
F. Conductivity	x		4990						1	umhos/cm	
F. Cyanide, Amenable to Chlorination	x		<0.0050						1	mg/L	

Non-Discharging Dip Samples Collected at stormwater pond
Due to no flow conditions, mass value reported is 0 for all parameters

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	<10.0						1	mpn/100ml	
H. Fluoride (16984-48-8)		x	<0.20						1	mg/L	
I. Nitrate plus Nitrate *(as N)*		x	<0.10						1	mg/L	
J. Kjeldahl, Total (as N)	x		1.4						1	mg/L	
K. Nitrogen, Total Organic *(as N)*	x		1.4						1	mg/L	
L. Oil and Grease		x	<5.0						1	mg/L	
M. Phenols, Total		x	<5.0						1	mg/L	
N. Phosphorus *(as P),* Total (7723-14-0)		x	<0.10						1	mg/L	
O. Sulfate *(as SO^4)* (14808-79-8)	x		1690						1	mg/L	
P. Sulfide *(as S)*		x	<0.050						1	mg/L	
Q. Sulfite (as SO^3) (14265-45-3)		x	<2.0						1	mg/L	
R. Surfactants		x									
S. Trihalomethanes, Total		x	<0.10						1	ug/L	
Subpart 2 – Metals											
1M. Aluminum, Total Recoverable (7429-90-5)	x		200						1	ug/L	
2M. Antimony, Total Recoverable (7440-36-9)		x	<1.0						1	ug/L	
3M. Arsenic, Total Recoverable (7440-38-2)	x		4.0						1	ug/L	
4M. Barium, Total Recoverable (7440-39-3)	x		80.4						1	ug/L	
5M. Beryllium, Total Recoverable (7440-41-7)		x	<0.50						1	ug/L	
6M. Boron, Total Recoverable (7440-42-8)	x		3640						1	ug/L	
7M. Cadmium, Total Recoverable (7440-43-9)		x	<0.50						1	ug/L	
8M. Chromium III Total Recoverable (16065-83-1)	x		1.5						1	ug/L	
9M. Chromium VI, Dissolved (18540-29-9)		x	<0.010						1	mg/L	
10M. Cobalt, Total Recoverable (7440-48-4)		x	<5.0						1	ug/L	

Non-Discharging Dip Samples Collected at stormwater pond
Due to no flow conditions, mass value reported is 0 for all parameters

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 2 – Metals (Continued)											
11M. Copper, Total Recoverable (7440-50-8)	x		1.7						1	ug/L	
12M. Iron, Total Recoverable (7439-89-6)	x		146						1	ug/L	
13M. Lead, Total Recoverable (7439-92-1)		x	<1.0						1	ug/L	
14M. Magnesium, Total Recoverable (7439-95-4)	x		12100						1	ug/L	
15M. Manganese, Total Recoverable (7439-96-5)	x		113						1	ug/L	
16M. Mercury, Total Recoverable (7439-97-6)		x	<0.20						1	ug/L	
17M. Methylmercury (22967926)		x									
18M. Molybdenum, Total Recoverable (7439-98-7)	x		501						1	ug/L	
19M. Nickel, Total Recoverable (7440-02-0)	x		12.9						1	ug/L	
20M. Selenium, Total Recoverable (7782-49-2)	x		14.0						1	ug/L	
21M. Silver, Total Recoverable (7440-22-4)		x	<0.50						1	ug/L	
22M. Thallium, Total Recoverable (7440-28-0)		x	<1.0						1	ug/L	
23M. Tin, Total Recoverable (7440-31-5)		x	<50.0						1	ug/L	
24M. Titanium, Total Recoverable (7440-32-6)		x	<10.0						1	ug/L	
25M. Zinc, Total Recoverable (7440-66-6)		x	<10.0						1	ug/L	
Subpart 3 – Radioactivity											
1R. Alpha Total	x		-16.5 ± 7.85						1	pCi/L	
2R. Beta Total	x		25.1 ± 8.05						1	pCi/L	
3R. Radium Total	x		0.842 ± 0.713						1	pCi/L	
4R. Radium 226 plus 228 Total	x		0.842 ± 0.713						1	pCi/L	

Form D - Wastewater Outfalls

Outfalls 001, 003, 010 and 011

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

FORM D – APPLICATION FOR DISCHARGE PERMIT – PRIMARY INDUSTRIES

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

Iatan Generating Station

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

MO - 0082996

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Industries listed below:

INDUSTRY CATEGORY

- Adhesives and sealants
- Aluminum forming
- Auto and other laundries
- Battery manufacturing
- Coal mining
- Coil coating
- Copper forming
- Electric and electronic compounds
- Electroplating
- Explosives manufacturing
- Foundries
- Gum and wood chemicals
- Inorganic chemicals manufacturing
- Iron and steel manufacturing
- Leather tanning and finishing
- Landfill
- Mechanical products manufacturing
- Nonferrous metals manufacturing
- Ore mining
- Organic chemicals manufacturing
- Paint and ink formulation
- Pesticides
- Petroleum refining
- Pharmaceutical preparations
- Photographic equipment and supplies
- Plastic and synthetic materials manufacturing
- Plastic processing
- Porcelain enameling
- Printing and publishing
- Pulp and paperboard mills
- Rubber processing
- Soap and detergent manufacturing
- Steam electric power plants
- Textile mills
- Timber products processing

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0082996	001

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)			✓	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
2M. Arsenic, Total (7440-38-2)		✓		4.1	16.12					1	ug/L	lbs	4.2	16.5	1
3M. Beryllium, Total (7440-41-7)			✓	<0.50	<1.97					1	ug/L	lbs	<0.50	<1.9	1
4M. Cadmium, Total (7440-43-9)			✓	<0.50	<1.97					1	ug/L	lbs	<0.50	<1.9	1
5M. Chromium III (16065-83-1)		✓		2.2	8.65					1	ug/L	lbs	2.1	8.3	1
6M. Chromium VI (18540-29-9)			✓	<0.010	<39.3					1	mg/l	lbs	<0.010	<39.3	1
7M. Copper, Total (7440-50-8)		✓		3.1	12.19					1	ug/L	lbs	3.1	12.19	1
8M. Lead, Total (7439-92-1)		✓		1.5	5.90					1	ug/L	lbs	1.5	5.9	1
9M. Magnesium Total (7439-95-4)		✓		26000	102241					1	ug/L	100 lbs	26100	102.6	1
10M. Mercury, Total (7439-97-6)			✓	<0.20	<0.79					1	ug/L	lbs	<0.20	<0.8	1
11M. Molybdenum Total (7439-98-7)			✓	<20.0	<78.7					1	ug/L	lbs	<20.0	<78.7	1
12M. Nickel, Total (7440-02-0)		✓		4.3	16.91					1	ug/L	lbs	4.0	15.7	1
13M. Selenium, Total (7782-49-2)		✓		2.9	11.40					1	ug/L	lbs	2.9	11.4	1
14M. Silver, Total (7440-22-4)			✓	<0.50	<1.97					1	ug/L	lbs	<0.50	<1.9	1
15M. Thallium, Total (7440-28-0)			✓	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
16M. Tin Total (7440-31-5)			✓	<50.0	<196.6					1	ug/L	lbs	<50.0	<197	1
17M. Titanium Total (7440-32-6)		✓		33.1	130.2					1	ug/L	lbs	29.7	116.8	1
18M. Zinc, Total (7440-66-6)			✓	<10.0	39.32					1	ug/L	lbs	<10.0	39.3	1

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☐	☐	☑	<0.010	<39.3					1	mg/L	lbs	<0.010	<39.3	1
20M. Phenols, Total	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.6	1
DIOXIN																
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS** Not Present												

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☐	☐	☑	<50.0	<196.6					1	ug/L	lbs	<50.0	<197	1
2V. Acrylonitrile (107-13-1)	☐	☐	☑	<20.0	<78.7					1	ug/L	lbs	<20.0	<79	1
3V. Benzene (71-43-2)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☐	☐	☑	<5.8	<22.8					1	ug/L	lbs	<6.0	<24	1
5V. Bromoform (75-25-2)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
6V. Carbon Tetrachloride (56-23-5)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
7V. Chlorobenzene (108-90-7)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
8V. Chlorodibromomethane (124-48-1)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
9V. Chloroethane (75-00-3)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
10V. 2-Chloroethylvinyl Ether (110-75-8)	☐	☐	☑	<10.0	<39.3					1	ug/L	lbs	<10.0	<39	1
11V. Chloroform (67-66-3)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
12V. Dichlorobromomethane (75-27-4)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
13V. Dichloro-difluoromethane (75-71-8)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
14V. 1,1 – Dichloroethane (75-34-3)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
15V. 1,2 – Dichloroethane (107-06-2)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
16V. 1,1 – Dichloroethylene (75-35-4)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
17V. 1,3 – Dichloropropane (78-87-5)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
18V. 1,2 –Dichloropropylene (542-75-6)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
19V. Ethylbenzene (100-41-4)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
20V. Methyl Bromide (74-83-9)	☐	☐	☑	<5.0	<19.6					1	ug/L	lbs	<5.0	<20	1
21V. Methyl Chloride (74-87-3)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	001

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
24V. Tetrachloroethylene (127-18-4)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
25V. Toluene (108-88-3)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
29V. Trichloro – ethylene (79-01-6)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
30V. Trichloro – fluoromethane (75-69-4)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
31V. Vinyl Chloride (75-01-4)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
2A. 2,4 – Dichloro – phenol (120-83-2)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
3A. 2,4 – Dimethyl – phenol (105-67-9)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☐	☐	☑	<24.3	<95.6					1	ug/L	lbs	<25.0	<98.3	1
5A. 2,4 – Dinitro – phenol (51-28-5)	☐	☐	☑	<48.5	<190.7					1	ug/L	lbs	<50.0	<197	1
6A. 2-Nitrophenol (88-75-5)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
7A. 4-Nitrophenol (100-02-7)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
8A. P – Chloro – M Cresol (59-50-7)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
9A. Pentachloro – phenol (87-86-5)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
10A. Phenol (108-952)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☐	☐	☑	<24.3	<95.6					1	ug/L	lbs	<25.0	<98.3	1

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CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
2B. Acenaphtylene (208-96-8)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
3B. Anthracene (120-12-7)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
4B. Benzidine (92-87-5)	☐	☐	☑	<48.5	<190.7					1	ug/L	lbs	<50.0	<197	1
5B. Benzo (a) Anthracene (56-55-3)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
6B. Benzo (a) Pyrene (50-32-8)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
7B. 3,4 – Benzofluoranthene (205-99-2)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
8B. Benzo (ghi) Perylene (191-24-2)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
9B. Benzo (k) Fluoranthene (207-08-9)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☐	☐	☑	<5.8	<22.8					1	ug/L	lbs	<6.0	<23.6	1
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☐	☐	☑	<5.8	<22.8					1	ug/L	lbs	<6.0	<23.6	1
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☐	☐	☑	<4.9	<19.27					1	ug/l	lbs	<5.0	<19.7	1
15B. Butyl Benzyl Phthalate (85-68-7)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
16B. 2-Chloronaphthalene (91-58-7)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
18B. Chrysene (218-01-9)	☐	☐	☑	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
19B. Dibenzo (a.h) Anthracene (53-70-3)	☐	☐	☑	<4.9	<19.27					1	ug/l	lbs	<5.0	<19.7	1
20B. 1,2 – Dichlorobenzene (95-50-1)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
21B. 1,3 – Dichlorobenzene (541-73-1)	☐	☐	☑	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1

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NPDES # (*IF ASSIGNED*): MO - 0082996 | OUTFALL NUMBER: 001

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)			✓	<1.0	<3.93					1	ug/L	lbs	<1.0	<3.9	1
23B. 3, 3'-Dichlorobenzidine (91-94-1)			✓	<19.4	<76.29					1	ug/L	lbs	<20.0	<78.6	1
24B. Diethyl Phthalate (84-66-2)			✓	<9.7	<38.14					1	ug/l	lbs	<10.0	<39.3	1
25B. Dimethyl Phthalate (131-11-3)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
26B. Di-N-butyl Phthalate (84-74-2)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
27B. 2,4-Dinitrotoluene (121-14-2)			✓	<5.8	<22.81					1	ug/L	lbs	<6.0	<23.6	1
28B. 2,6-Dinitrotoluene (606-20-2)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
29B. Di-N-Octyphthalate (117-84-0)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
30B. 1,2-Diphenylhydrazine (*as Azobenzene)* (122-66-7)			✓	<7.8	<30.67					1	ug/L	lbs	<8.0	<31.5	1
31B. Fluoranthene (206-44-0)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
32B. Fluorene (86-73-7)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
33B. Hexachlorobenzene (87-68-3)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
34B. Hexachlorobutadiene (87-68-3)			✓	<5.0	<19.7					1	ug/L	lbs	<5.0	<19.7	1
35B. Hexachloro-cyclopentadiene (77-47-4)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
36B. Hexachloroethane (67-72-1)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
38B. Isophorone (78-59-1)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
39B. Naphthalene (91-20-3)			✓	<5.0	<19.7					1	ug/L	lbs	<5.0	<19.7	1
40B. Nitrobenzene (98-95-3)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
41B. N-Nitro-sodimethylamine (62-75-9)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1

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CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
43B. N-Nitro-sodiphenylamine (86-30-6)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
44B. Phenanthrene (85-01-8)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
45B. Pyrene (129-00-0)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
46B. 1,2,4-Tri chlorobenzene (120-82-1)			✓	<4.9	<19.27					1	ug/L	lbs	<5.0	<19.7	1
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			✓												
2P. α-BHC (319-84-6)			✓												
3P. β-BHC (319-84-6)			✓												
4P. γ-BHC (58-89-9)			✓												
5P. δ-BHC (319-86-8)			✓												
6P. Chlordane (57-74-9)			✓												
7P. 4,4'-DDT (50-29-3)			✓												
8P. 4,4'-DDE (72-55-9)			✓												
9P. 4,4'-DDD (72-54-8)			✓												
10P. Dieldrin (60-57-1)			✓												
11P. α-Endosulfan (115-29-7)			✓												
12P. β-Endosultan (115-29-7)			✓												
13P. Endosulfan Sulfate (1031-07-8)			✓												
14P. Endrin (72-20-8)			✓												
15P. Endrin Aldehyde (7421-93-4)			✓												
16P. Heptachlor (76-44-8)			✓												

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NPDES # (*IF ASSIGNED*): MO - 0082996 | OUTFALL NUMBER: 001

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	✓												
18P. PCB-1242 (53469-21-9)	☐	☐	✓												
19P. PBC-1254 (11097-69-1)	☐	☐	✓												
20P. PCB-1221 (11104-28-2)	☐	☐	✓												
21P. PCB-1232 (11141-16-5)	☐	☐	✓												
22P. PCB-1248 (12672-29-6)	☐	☐	✓												
23P. PCB-1260 (11096-82-5)	☐	☐	✓												
24P. PCB-1016 (12674-11-2)	☐	☐	✓												
25P. Toxaphene (8001-35-2)	☐	☐	✓												
J. RADIOACTIVITY															
(1) Alpha Total	☐	✓	☐	6.83						1	pCi/L		4.31		1
(2) Beta Total	☐	✓	☐	6.46						1	pCi/L		6.60		1
(3) Radium Total	☐	✓	☐	0.763						1	pCi/L		0.393		1
(4) Radium 226 Total	☐	✓	☐	0.419						1	pCi/L		0.000		1

Non-discharging, dip sample collected from holding basin. Therefore, mass value is 0 for all pollutants.

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0082996	003

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)			✓	<1.0						1	ug/L				
2M. Arsenic, Total (7440-38-2)		✓		2.5						1	ug/L				
3M. Beryllium, Total (7440-41-7)			✓	<0.50						1	ug/L				
4M. Cadmium, Total (7440-43-9)			✓	<0.50						1	ug/L				
5M. Chromium III (16065-83-1)		✓		5.2						1	ug/L				
6M. Chromium VI (18540-29-9)			✓	<0.010						1	mg/L				
7M. Copper, Total (7440-50-8)		✓		4.2						1	ug/L				
8M. Lead, Total (7439-92-1)			✓	<1.0						1	ug/L				
9M. Magnesium Total (7439-95-4)		✓		22100						1	ug/L				
10M. Mercury, Total (7439-97-6)			✓	<0.20						1	ug/L				
11M. Molybdenum Total (7439-98-7)			✓	<20.0						1	ug/L				
12M. Nickel, Total (7440-02-0)		✓		2.4						1	ug/L				
13M. Selenium, Total (7782-49-2)		✓		2.3						1	ug/L				
14M. Silver, Total (7440-22-4)			✓	<0.50						1	ug/L				
15M. Thallium, Total (7440-28-0)			✓	<1.0						1	ug/L				
16M. Tin Total (7440-31-5)			✓	<50.0						1	ug/L				
17M. Titanium Total (7440-32-6)		✓		44.4						1	ug/L				
18M. Zinc, Total (7440-66-6)			✓	<10.0						1	ug/L				

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19M. Cyanide, Amenable to Chlorination	☐	☐	☑	<0.010							1	mg/L				
20M. Phenols, Total	☐	☐	☑	<4.9							1	ug/L				
DIOXIN																
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS** Not Present												

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☐	☐	☑	<250						1	ug/L				
2V. Acrylonitrile (107-13-1)	☐	☐	☑	<100						1	ug/L				
3V. Benzene (71-43-2)	☐	☐	☑	<5.0						1	ug/L				
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☐	☐	☑	<5.9						1	ug/L				
5V. Bromoform (75-25-2)	☐	☐	☑	<1.0						1	ug/L				
6V. Carbon Tetrachloride (56-23-5)	☐	☐	☑	<5.0						1	ug/L				
7V. Chlorobenzene (108-90-7)	☐	☐	☑	<5.0						1	ug/L				
8V. Chlorodibromomethane (124-48-1)	☐	☐	☑	<5.0						1	ug/L				
9V. Chloroethane (75-00-3)	☐	☐	☑	<5.0						1	ug/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☐	☐	☑	<50.0						1	ug/L				
11V. Chloroform (67-66-3)	☐	☐	☑	<1.0						1	ug/L				
12V. Dichlorobromomethane (75-27-4)	☐	☐	☑	<1.0						1	ug/L				
13V. Dichloro-difluoromethane (75-71-8)	☐	☐	☑	<1.0						1	ug/L				
14V. 1,1 – Dichloroethane (75-34-3)	☐	☐	☑	<5.0						1	ug/L				
15V. 1,2 – Dichloroethane (107-06-2)	☐	☐	☑	<5.0						1	ug/L				
16V. 1,1 – Dichloroethylene (75-35-4)	☐	☐	☑	<5.0						1	ug/L				
17V. 1,3 – Dichloropropane (78-87-5)	☐	☐	☑	<5.0						1	ug/L				
18V. 1,2 –Dichloropropylene (542-75-6)	☐	☐	☑	<5.0						1	ug/L				
19V. Ethylbenzene (100-41-4)	☐	☐	☑	<5.0						1	ug/L				
20V. Methyl Bromide (74-83-9)	☐	☐	☑	<25.0						1	ug/L				
21V. Methyl Chloride (74-87-3)	☐	☐	☑	<5.0						1	ug/L				

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	003

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☐	☐	☑	<5.0						1	ug/L				
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☐	☐	☑	<5.0						1	ug/L				
24V. Tetrachloroethylene (127-18-4)	☐	☐	☑	<5.0						1	ug/L				
25V. Toluene (108-88-3)	☐	☐	☑	<5.0						1	ug/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☐	☐	☑	<5.0						1	ug/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☐	☐	☑	<5.0						1	ug/L				
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☐	☐	☑	<5.0						1	ug/L				
29V. Trichloro – ethylene (79-01-6)	☐	☐	☑	<5.0						1	ug/L				
30V. Trichloro – fluoromethane (75-69-4)	☐	☐	☑	<5.0						1	ug/L				
31V. Vinyl Chloride (75-01-4)	☐	☐	☑	<5.0						1	ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☐	☐	☑	<4.9						1	ug/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	☐	☐	☑	<4.9						1	ug/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	☐	☐	☑	<4.9						1	ug/L				
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☐	☐	☑	<24.5						1	ug/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	☐	☐	☑	49.0						1	ug/L				
6A. 2-Nitrophenol (88-75-5)	☐	☐	☑	<4.9						1	ug/L				
7A. 4-Nitrophenol (100-02-7)	☐	☐	☑	<4.9						1	ug/L				
8A. P – Chloro – M Cresol (59-50-7)	☐	☐	☑	<4.9						1	ug/L				
9A. Pentachloro – phenol (87-86-5)	☐	☐	☑	<4.9						1	ug/L				
10A. Phenol (108-952)	☐	☐	☑	<4.9						1	ug/L				
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☐	☐	☑	<4.9						1	ug/L				
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☐	☐	☑	<24.5						1	ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☐	☐	☑	<4.9						1	ug/L				
2B. Acenaphtylene (208-96-8)	☐	☐	☑	<4.9						1	ug/L				
3B. Anthracene (120-12-7)	☐	☐	☑	<4.9						1	ug/L				
4B. Benzidine (92-87-5)	☐	☐	☑	<49.0						1	ug/L				
5B. Benzo (a) Anthracene (56-55-3)	☐	☐	☑	<4.9						1	ug/L				
6B. Benzo (a) Pyrene (50-32-8)	☐	☐	☑	<4.9						1	ug/L				
7B. 3,4 – Benzofluoranthene (205-99-2)	☐	☐	☑	<4.9						1	ug/L				
8B. Benzo (ghi) Perylene (191-24-2)	☐	☐	☑	<4.9						1	ug/L				
9B. Benzo (k) Fluoranthene (207-08-9)	☐	☐	☑	<4.9						1	ug/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☐	☐	☑	<4.9						1	ug/L				
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☐	☐	☑	<5.9						1	ug/L				
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☐	☐	☑	<5.9						1	ug/L				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☐	☐	☑	<4.9						1	ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☐	☐	☑	<4.9						1	ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)	☐	☐	☑	<4.9						1	ug/L				
16B. 2-Chloronaphthalene (91-58-7)	☐	☐	☑	<4.9						1	ug/L				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☐	☐	☑	<4.9						1	ug/L				
18B. Chrysene (218-01-9)	☐	☐	☑	<4.9						1	ug/L				
19B. Dibenzo (a.h) Anthracene (53-70-3)	☐	☐	☑	<4.9						1	ug/L				
20B. 1,2 – Dichlorobenzene (95-50-1)	☐	☐	☑	<5.0						1	ug/L				
21B. 1,3 – Dichlorobenzene (541-73-1)	☐	☐	☑	<5.0						1	ug/L				

CONTINUED FROM PAGE 5

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	003

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)			✓	<5.0						1	ug/L				
23B. 3, 3'-Dichlorobenzidine (91-94-1)			✓	<19.6						1	ug/L				
24B. Diethyl Phthalate (84-66-2)			✓	<9.8						1	ug/L				
25B. Dimethyl Phthalate (131-11-3)			✓	<4.9						1	ug/L				
26B. Di-N-butyl Phthalate (84-74-2)			✓	<4.9						1	ug/L				
27B. 2,4-Dinitrotoluene (121-14-2)			✓	<5.9						1	ug/L				
28B. 2,6-Dinitrotoluene (606-20-2)			✓	<4.9						1	ug/L				
29B. Di-N-Octyphthalate (117-84-0)			✓	<4.9						1	ug/L				
30B. 1,2-Diphenylhydrazine (*as Azobenzene)* (122-66-7)			✓	<7.8						1	ug/L				
31B. Fluoranthene (206-44-0)			✓	<4.9						1	ug/L				
32B. Fluorene (86-73-7)			✓	<4.9						1	ug/L				
33B. Hexachlorobenzene (87-68-3)			✓	<4.9						1	ug/L				
34B. Hexachlorobutadiene (87-68-3)			✓	<25.0						1	ug/L				
35B. Hexachloro-cyclopentadiene (77-47-4)			✓	<4.9						1	ug/L				
36B. Hexachloroethane (67-72-1)			✓	<4.9						1	ug/L				
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)			✓	<4.9						1	ug/L				
38B. Isophorone (78-59-1)			✓	<4.9						1	ug/L				
39B. Naphthalene (91-20-3)			✓	<4.9						1	ug/L				
40B. Nitrobenzene (98-95-3)			✓	<4.9						1	ug/L				
41B. N-Nitro-sodimethylamine (62-75-9)			✓	<4.9						1	ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)			✓	<4.9						1	ug/L				
43B. N-Nitro-sodiphenylamine (86-30-6)			✓	<4.9						1	ug/L				
44B. Phenanthrene (85-01-8)			✓	<4.9						1	ug/L				
45B. Pyrene (129-00-0)			✓	<4.9						1	ug/L				
46B. 1,2,4-Tri chlorobenzene (120-82-1)			✓	<25.0						1	ug/L				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			✓												
2P. α-BHC (319-84-6)			✓												
3P. β-BHC (319-84-6)			✓												
4P. γ-BHC (58-89-9)			✓												
5P. δ-BHC (319-86-8)			✓												
6P. Chlordane (57-74-9)			✓												
7P. 4,4'-DDT (50-29-3)			✓												
8P. 4,4'-DDE (72-55-9)			✓												
9P. 4,4'-DDD (72-54-8)			✓												
10P. Dieldrin (60-57-1)			✓												
11P. α-Endosulfan (115-29-7)			✓												
12P. β-Endosultan (115-29-7)			✓												
13P. Endosulfan Sulfate (1031-07-8)			✓												
14P. Endrin (72-20-8)			✓												
15P. Endrin Aldehyde (7421-93-4)			✓												
16P. Heptachlor (76-44-8)			✓												

CONTINUED ON PAGE 8

CONTINUED FROM PAGE 7

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	003

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	☑												
18P. PCB-1242 (53469-21-9)	☐	☐	☑												
19P. PBC-1254 (11097-69-1)	☐	☐	☑												
20P. PCB-1221 (11104-28-2)	☐	☐	☑												
21P. PCB-1232 (11141-16-5)	☐	☐	☑												
22P. PCB-1248 (12672-29-6)	☐	☐	☑												
23P. PCB-1260 (11096-82-5)	☐	☐	☑												
24P. PCB-1016 (12674-11-2)	☐	☐	☑												
25P. Toxaphene (8001-35-2)	☐	☐	☑												
J. RADIOACTIVITY															
(1) Alpha Total	☐	☑	☐	0.438						1	pCi/L				
(2) Beta Total	☐	☑	☐	9.13						1	pCi/L				
(3) Radium Total	☐	☑	☐	1.22						1	pCi/L				
(4) Radium 226 Total	☐	☑	☐	0.855						1	pCi/L				

Non-discharging, dip sample collected from leachate pond. Therefore, mass value is 0 for all pollutants.

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0082996	010

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)			✓	<1.0						1	ug/L				
2M. Arsenic, Total (7440-38-2)		✓		4.4						1	ug/L				
3M. Beryllium, Total (7440-41-7)			✓	<0.50						1	ug/L				
4M. Cadmium, Total (7440-43-9)			✓	<1.0						1	ug/L				
5M. Chromium III (16065-83-1)			✓	<1.0						1	ug/L				
6M. Chromium VI (18540-29-9)			✓	<0.010						1	ug/L				
7M. Copper, Total (7440-50-8)		✓		1.2						1	ug/L				
8M. Lead, Total (7439-92-1)			✓	<2.0						1	ug/L				
9M. Magnesium Total (7439-95-4)		✓		254000						1	ug/L				
10M. Mercury, Total (7439-97-6)			✓	<0.20						1	ug/L				
11M. Molybdenum Total (7439-98-7)		✓		322						1	ug/L				
12M. Nickel, Total (7440-02-0)		✓		50.0						1	ug/L				
13M. Selenium, Total (7782-49-2)		✓		19.8						1	ug/L				
14M. Silver, Total (7440-22-4)			✓	<1.0						1	ug/L				
15M. Thallium, Total (7440-28-0)			✓	<2.0						1	ug/L				
16M. Tin Total (7440-31-5)			✓	<50.0						1	ug/L				
17M. Titanium Total (7440-32-6)			✓	<10.0						1	ug/L				
18M. Zinc, Total (7440-66-6)			✓	<10.0						1	ug/L				

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☐	☑	☐	0.018						1	mg/L				
20M. Phenols, Total	☐	☐	☑	<4.9						1	mg/L				
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS** Not Present											

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☐	☐	☑	<50.0						1	ug/L				
2V. Acrylonitrile (107-13-1)	☐	☐	☑	<20.0						1	ug/L				
3V. Benzene (71-43-2)	☐	☐	☑	<1.0						1	ug/L				
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☐	☐	☑	<5.9						1	ug/L				
5V. Bromoform (75-25-2)	☐	☐	☑	<1.0						1	ug/L				
6V. Carbon Tetrachloride (56-23-5)	☐	☐	☑	<1.0						1	ug/L				
7V. Chlorobenzene (108-90-7)	☐	☐	☑	<1.0						1	ug/L				
8V. Chlorodibromomethane (124-48-1)	☐	☐	☑	<1.0						1	ug/L				
9V. Chloroethane (75-00-3)	☐	☐	☑	<1.0						1	ug/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☐	☐	☑	<10.0						1	ug/L				
11V. Chloroform (67-66-3)	☐	☐	☑	<1.0						1	ug/L				
12V. Dichlorobromomethane (75-27-4)	☐	☐	☑	<1.0						1	ug/L				
13V. Dichloro-difluoromethane (75-71-8)	☐	☐	☑	<1.0						1	ug/L				
14V. 1,1 – Dichloroethane (75-34-3)	☐	☐	☑	<1.0						1	ug/L				
15V. 1,2 – Dichloroethane (107-06-2)	☐	☐	☑	<1.0						1	ug/L				
16V. 1,1 – Dichloroethylene (75-35-4)	☐	☐	☑	<1.0						1	ug/L				
17V. 1,3 – Dichloropropane (78-87-5)	☐	☐	☑	<1.0						1	ug/L				
18V. 1,2 –Dichloropropylene (542-75-6)	☐	☐	☑	<1.0						1	ug/L				
19V. Ethylbenzene (100-41-4)	☐	☐	☑	<1.0						1	ug/L				
20V. Methyl Bromide (74-83-9)	☐	☐	☑	<5.0						1	ug/L				
21V. Methyl Chloride (74-87-3)	☐	☐	☑	<1.0						1	ug/L				

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	010

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☐	☐	☑	<1.0						1	ug/L				
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☐	☐	☑	<1.0						1	ug/L				
24V. Tetrachloroethylene (127-18-4)	☐	☐	☑	<1.0						1	ug/L				
25V. Toluene (108-88-3)	☐	☐	☑	<1.0						1	ug/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☐	☐	☑	<1.0						1	ug/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☐	☐	☑	<1.0						1	ug/L				
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☐	☐	☑	<1.0						1	ug/L				
29V. Trichloro – ethylene (79-01-6)	☐	☐	☑	<1.0						1	ug/L				
30V. Trichloro – fluoromethane (75-69-4)	☐	☐	☑	<1.0						1	ug/L				
31V. Vinyl Chloride (75-01-4)	☐	☐	☑	<1.0						1	ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☐	☐	☑	<4.9						1	ug/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	☐	☐	☑	<4.9						1	ug/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	☐	☐	☑	<4.9						1	ug/L				
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☐	☐	☑	<24.5						1	ug/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	☐	☐	☑	<49.0						1	ug/L				
6A. 2-Nitrophenol (88-75-5)	☐	☐	☑	<4.9						1	ug/L				
7A. 4-Nitrophenol (100-02-7)	☐	☐	☑	<4.9						1	ug/L				
8A. P – Chloro – M Cresol (59-50-7)	☐	☐	☑	<4.9						1	ug/L				
9A. Pentachloro – phenol (87-86-5)	☐	☐	☑	<4.9						1	ug/L				
10A. Phenol (108-952)	☐	☐	☑	<4.9						1	ug/L				
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☐	☐	☑	<4.9						1	ug/L				
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☐	☐	☑	<24.5						1	ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			✓	<4.9						1	ug/L				
2B. Acenaphtylene (208-96-8)			✓	<4.9						1	ug/L				
3B. Anthracene (120-12-7)			✓	<4.9						1	ug/L				
4B. Benzidine (92-87-5)			✓	<49.0						1	ug/L				
5B. Benzo (a) Anthracene (56-55-3)			✓	<4.9						1	ug/L				
6B. Benzo (a) Pyrene (50-32-8)			✓	<4.9						1	ug/L				
7B. 3,4 – Benzofluoranthene (205-99-2)			✓	<4.9						1	ug/L				
8B. Benzo (ghi) Perylene (191-24-2)			✓	<4.9						1	ug/L				
9B. Benzo (k) Fluoranthene (207-08-9)			✓	<4.9						1	ug/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)			✓	<4.9						1	ug/L				
11B. Bis (2-Chloroethyl) Ether (111-44-4)			✓	<5.9						1	ug/L				
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)			✓	<5.9						1	ug/L				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)			✓	<4.9						1	ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)			✓	<4.9						1	ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)			✓	<4.9						1	ug/L				
16B. 2-Chloronaphthalene (91-58-7)			✓	<4.9						1	ug/L				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)			✓	<4.9						1	ug/L				
18B. Chrysene (218-01-9)			✓	<4.9						1	ug/L				
19B. Dibenzo (a.h) Anthracene (53-70-3)			✓	<4.9						1	ug/L				
20B. 1,2 – Dichlorobenzene (95-50-1)			✓	<1.0						1	ug/L				
21B. 1,3 – Dichlorobenzene (541-73-1)			✓	<1.0						1	ug/L				

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NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	010

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)	☐	☐	☑	<1.0						1	ug/L				
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☐	☐	☑	<19.6						1	ug/L				
24B. Diethyl Phthalate (84-66-2)	☐	☐	☑	<9.8						1	ug/L				
25B. Dimethyl Phthalate (131-11-3)	☐	☐	☑	<4.9						1	ug/L				
26B. Di-N-butyl Phthalate (84-74-2)	☐	☐	☑	<4.9						1	ug/L				
27B. 2,4-Dinitrotoluene (121-14-2)	☐	☐	☑	<5.9						1	ug/L				
28B. 2,6-Dinitrotoluene (606-20-2)	☐	☐	☑	<4.9						1	ug/L				
29B. Di-N-Octyphthalate (117-84-0)	☐	☐	☑	<4.9						1	ug/L				
30B. 1,2-Diphenylhydrazine (*as Azobenzene)* (122-66-7)	☐	☐	☑	<7.8						1	ug/L				
31B. Fluoranthene (206-44-0)	☐	☐	☑	<4.9						1	ug/L				
32B. Fluorene (86-73-7)	☐	☐	☑	<4.9						1	ug/L				
33B. Hexachlorobenzene (87-68-3)	☐	☐	☑	<4.9						1	ug/L				
34B. Hexachlorobutadiene (87-68-3)	☐	☐	☑	<4.9						1	ug/L				
35B. Hexachloro-cyclopentadiene (77-47-4)	☐	☐	☑	<4.9						1	ug/L				
36B. Hexachloroethane (67-72-1)	☐	☐	☑	<4.9						1	ug/L				
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☐	☐	☑	<4.9						1	ug/L				
38B. Isophorone (78-59-1)	☐	☐	☑	<4.9						1	ug/L				
39B. Naphthalene (91-20-3)	☐	☐	☑	<4.9						1	ug/L				
40B. Nitrobenzene (98-95-3)	☐	☐	☑	<4.9						1	ug/L				
41B. N-Nitro-sodimethylamine (62-75-9)	☐	☐	☑	<4.9						1	ug/L				

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CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	☐	☐	☑	<4.9						1	ug/L				
43B. N-Nitro-sodiphenylamine (86-30-6)	☐	☐	☑	<4.9						1	ug/L				
44B. Phenanthrene (85-01-8)	☐	☐	☑	<4.9						1	ug/L				
45B. Pyrene (129-00-0)	☐	☐	☑	<4.9						1	ug/L				
46B. 1,2,4-Tri chlorobenzene (120-82-1)	☐	☐	☑	<4.9						1	ug/L				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☐	☐	☑												
2P. α-BHC (319-84-6)	☐	☐	☑												
3P. β-BHC (319-84-6)	☐	☐	☑												
4P. γ-BHC (58-89-9)	☐	☐	☑												
5P. δ-BHC (319-86-8)	☐	☐	☑												
6P. Chlordane (57-74-9)	☐	☐	☑												
7P. 4,4'-DDT (50-29-3)	☐	☐	☑												
8P. 4,4'-DDE (72-55-9)	☐	☐	☑												
9P. 4,4'-DDD (72-54-8)	☐	☐	☑												
10P. Dieldrin (60-57-1)	☐	☐	☑												
11P. α-Endosulfan (115-29-7)	☐	☐	☑												
12P. β-Endosultan (115-29-7)	☐	☐	☑												
13P. Endosulfan Sulfate (1031-07-8)	☐	☐	☑												
14P. Endrin (72-20-8)	☐	☐	☑												
15P. Endrin Aldehyde (7421-93-4)	☐	☐	☑												
16P. Heptachlor (76-44-8)	☐	☐	☑												

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CONTINUED FROM PAGE 7

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	010

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	✓												
18P. PCB-1242 (53469-21-9)	☐	☐	✓												
19P. PBC-1254 (11097-69-1)	☐	☐	✓												
20P. PCB-1221 (11104-28-2)	☐	☐	✓												
21P. PCB-1232 (11141-16-5)	☐	☐	✓												
22P. PCB-1248 (12672-29-6)	☐	☐	✓												
23P. PCB-1260 (11096-82-5)	☐	☐	✓												
24P. PCB-1016 (12674-11-2)	☐	☐	✓												
25P. Toxaphene (8001-35-2)	☐	☐	✓												
J. RADIOACTIVITY															
(1) Alpha Total	☐	✓	☐	-18.9						1	pCi/L				
(2) Beta Total	☐	✓	☐	26.8						1	pCi/L				
(3) Radium Total	☐	✓	☐	1.31						1	pCi/L				
(4) Radium 226 Total	☐	☐	✓	0.00						1	pCi/L				

Non-discharging, dip sample collected from holding basin. Therefore, mass value is 0 for all pollutants.

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0082996	011

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)			✓	<1.0						1	ug/L				
2M. Arsenic, Total (7440-38-2)		✓		4.0						1	ug/L				
3M. Beryllium, Total (7440-41-7)			✓	<0.50						1	ug/L				
4M. Cadmium, Total (7440-43-9)			✓	<0.50						1	ug/L				
5M. Chromium III (16065-83-1)		✓		1.5						1	ug/L				
6M. Chromium VI (18540-29-9)			✓	<0.010						1	mg/L				
7M. Copper, Total (7440-50-8)		✓		1.7						1	ug/L				
8M. Lead, Total (7439-92-1)			✓	<1.0						1	ug/L				
9M. Magnesium Total (7439-95-4)		✓		12100						1	ug/L				
10M. Mercury, Total (7439-97-6)			✓	<0.20						1	ug/L				
11M. Molybdenum Total (7439-98-7)		✓		501						1	ug/L				
12M. Nickel, Total (7440-02-0)		✓		12.9						1	ug/L				
13M. Selenium, Total (7782-49-2)		✓		14.0						1	ug/L				
14M. Silver, Total (7440-22-4)			✓	<0.50						1	ug/L				
15M. Thallium, Total (7440-28-0)			✓	<1.0						1	ug/L				
16M. Tin Total (7440-31-5)			✓	<50.0						1	ug/L				
17M. Titanium Total (7440-32-6)			✓	<10.0						1	ug/L				
18M. Zinc, Total (7440-66-6)			✓	<10.0						1	ug/L				

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☐	☐	☑	<0.10											
20M. Phenols, Total	☐	☐	☑	<5.0											
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS** Not Present											

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☐	☐	☑	<50.0						1	ug/L				
2V. Acrylonitrile (107-13-1)	☐	☐	☑	<20.0						1	ug/L				
3V. Benzene (71-43-2)	☐	☐	☑	<1.0						1	ug/L				
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☐	☐	☑	<5.9						1	ug/L				
5V. Bromoform (75-25-2)	☐	☐	☑	<1.0						1	ug/L				
6V. Carbon Tetrachloride (56-23-5)	☐	☐	☑	<1.0						1	ug/L				
7V. Chlorobenzene (108-90-7)	☐	☐	☑	<1.0						1	ug/L				
8V. Chlorodibromomethane (124-48-1)	☐	☐	☑	<1.0						1	ug/L				
9V. Chloroethane (75-00-3)	☐	☐	☑	<1.0						1	ug/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☐	☐	☑	<10.0						1	ug/L				
11V. Chloroform (67-66-3)	☐	☐	☑	<1.0						1	ug/L				
12V. Dichlorobromomethane (75-27-4)	☐	☐	☑	<1.0						1	ug/L				
13V. Dichloro-difluoromethane (75-71-8)	☐	☐	☑	<1.0						1	ug/L				
14V. 1,1 – Dichloroethane (75-34-3)	☐	☐	☑	<1.0						1	ug/L				
15V. 1,2 – Dichloroethane (107-06-2)	☐	☐	☑	<1.0						1	ug/L				
16V. 1,1 – Dichloroethylene (75-35-4)	☐	☐	☑	<1.0						1	ug/L				
17V. 1,3 – Dichloropropane (78-87-5)	☐	☐	☑	<1.0						1	ug/L				
18V. 1,2 –Dichloropropylene (542-75-6)	☐	☐	☑	<1.0						1	ug/L				
19V. Ethylbenzene (100-41-4)	☐	☐	☑	<1.0						1	ug/L				
20V. Methyl Bromide (74-83-9)	☐	☐	☑	<5.0						1	ug/L				
21V. Methyl Chloride (74-87-3)	☐	☐	☑	<1.0						1	ug/L				

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NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	011

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☐	☐	☑	<1.0						1	ug/L				
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☐	☐	☑	<1.0						1	ug/L				
24V. Tetrachloroethylene (127-18-4)	☐	☐	☑	<1.0						1	ug/L				
25V. Toluene (108-88-3)	☐	☐	☑	<1.0						1	ug/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☐	☐	☑	<1.0						1	ug/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☐	☐	☑	<1.0						1	ug/L				
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☐	☐	☑	<1.0						1	ug/L				
29V. Trichloro – ethylene (79-01-6)	☐	☐	☑	<1.0						1	ug/L				
30V. Trichloro – fluoromethane (75-69-4)	☐	☐	☑	<1.0						1	ug/L				
31V. Vinyl Chloride (75-01-4)	☐	☐	☑	<1.0						1	ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☐	☐	☑	<5.0						1	ug/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	☐	☐	☑	<5.0						1	ug/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	☐	☐	☑	<5.0						1	ug/L				
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☐	☐	☑	<24.8						1	ug/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	☐	☐	☑	<49.5						1	ug/L				
6A. 2-Nitrophenol (88-75-5)	☐	☐	☑	<5.0						1	ug/L				
7A. 4-Nitrophenol (100-02-7)	☐	☐	☑	<5.0						1	ug/L				
8A. P – Chloro – M Cresol (59-50-7)	☐	☐	☑	<5.0						1	ug/L				
9A. Pentachloro – phenol (87-86-5)	☐	☐	☑	<5.0						1	ug/L				
10A. Phenol (108-952)	☐	☐	☑	<5.0						1	ug/L				
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☐	☐	☑	<5.0						1	ug/L				
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☐	☐	☑	<24.8						1	ug/L				

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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☐	☐	☑	<5.0						1	ug/L				
2B. Acenaphtylene (208-96-8)	☐	☐	☑	<5.0						1	ug/L				
3B. Anthracene (120-12-7)	☐	☐	☑	<5.0						1	ug/L				
4B. Benzidine (92-87-5)	☐	☐	☑	<49.5						1	ug/L				
5B. Benzo (a) Anthracene (56-55-3)	☐	☐	☑	<5.0						1	ug/L				
6B. Benzo (a) Pyrene (50-32-8)	☐	☐	☑	<5.0						1	ug/L				
7B. 3,4 – Benzofluoranthene (205-99-2)	☐	☐	☑	<5.0						1	ug/L				
8B. Benzo (ghi) Perylene (191-24-2)	☐	☐	☑	<5.0						1	ug/L				
9B. Benzo (k) Fluoranthene (207-08-9)	☐	☐	☑	<5.0						1	ug/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☐	☐	☑	<5.0						1	ug/L				
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☐	☐	☑	<5.0						1	ug/L				
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☐	☐	☑	<5.9						1	ug/L				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☐	☐	☑	<5.0						1	ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☐	☐	☑	<5.0						1	ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)	☐	☐	☑	<5.0						1	ug/L				
16B. 2-Chloronaphthalene (91-58-7)	☐	☐	☑	<5.0						1	ug/L				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☐	☐	☑	<5.0						1	ug/L				
18B. Chrysene (218-01-9)	☐	☐	☑	<5.0						1	ug/L				
19B. Dibenzo (a.h) Anthracene (53-70-3)	☐	☐	☑	<5.0						1	ug/L				
20B. 1,2 – Dichlorobenzene (95-50-1)	☐	☐	☑	<1.0						1	ug/L				
21B. 1,3 – Dichlorobenzene (541-73-1)	☐	☐	☑	<1.0						1	ug/L				

CONTINUED FROM PAGE 5

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	011

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)			✓	<1.0						1	ug/L				
23B. 3, 3'-Dichlorobenzidine (91-94-1)			✓	<19.8						1	ug/L				
24B. Diethyl Phthalate (84-66-2)			✓	<9.9						1	ug/L				
25B. Dimethyl Phthalate (131-11-3)			✓	<5.0						1	ug/L				
26B. Di-N-butyl Phthalate (84-74-2)			✓	<5.0						1	ug/L				
27B. 2,4-Dinitrotoluene (121-14-2)			✓	<5.9						1	ug/L				
28B. 2,6-Dinitrotoluene (606-20-2)			✓	<5.0						1	ug/L				
29B. Di-N-Octyphthalate (117-84-0)			✓	<5.0						1	ug/L				
30B. 1,2-Diphenylhydrazine (*as Azobenzene)* (122-66-7)			✓	<7.9						1	ug/L				
31B. Fluoranthene (206-44-0)			✓	<5.0						1	ug/L				
32B. Fluorene (86-73-7)			✓	<5.0						1	ug/L				
33B. Hexachlorobenzene (87-68-3)			✓	<5.0						1	ug/L				
34B. Hexachlorobutadiene (87-68-3)			✓	<5.0						1	ug/L				
35B. Hexachloro-cyclopentadiene (77-47-4)			✓	<5.0						1	ug/L				
36B. Hexachloroethane (67-72-1)			✓	<5.0						1	ug/L				
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)			✓	<5.0						1	ug/L				
38B. Isophorone (78-59-1)			✓	<5.0						1	ug/L				
39B. Naphthalene (91-20-3)			✓	<5.0						1	ug/L				
40B. Nitrobenzene (98-95-3)			✓	<5.0						1	ug/L				
41B. N-Nitro-sodimethylamine (62-75-9)			✓	<5.0						1	ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)			✓	<5.0						1	ug/L				
43B. N-Nitro-sodiphenylamine (86-30-6)			✓	<5.0						1	ug/L				
44B. Phenanthrene (85-01-8)			✓	<5.0						1	ug/L				
45B. Pyrene (129-00-0)			✓	<5.0						1	ug/L				
46B. 1,2,4-Tri chlorobenzene (120-82-1)			✓	<5.0						1	ug/L				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			✓												
2P. α-BHC (319-84-6)			✓												
3P. β-BHC (319-84-6)			✓												
4P. γ-BHC (58-89-9)			✓												
5P. δ-BHC (319-86-8)			✓												
6P. Chlordane (57-74-9)			✓												
7P. 4,4'-DDT (50-29-3)			✓												
8P. 4,4'-DDE (72-55-9)			✓												
9P. 4,4'-DDD (72-54-8)			✓												
10P. Dieldrin (60-57-1)			✓												
11P. α-Endosulfan (115-29-7)			✓												
12P. β-Endosultan (115-29-7)			✓												
13P. Endosulfan Sulfate (1031-07-8)			✓												
14P. Endrin (72-20-8)			✓												
15P. Endrin Aldehyde (7421-93-4)			✓												
16P. Heptachlor (76-44-8)			✓												

CONTINUED ON PAGE 8

CONTINUED FROM PAGE 7

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO - 0082996	011

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	☑												
18P. PCB-1242 (53469-21-9)	☐	☐	☑												
19P. PBC-1254 (11097-69-1)	☐	☐	☑												
20P. PCB-1221 (11104-28-2)	☐	☐	☑												
21P. PCB-1232 (11141-16-5)	☐	☐	☑												
22P. PCB-1248 (12672-29-6)	☐	☐	☑												
23P. PCB-1260 (11096-82-5)	☐	☐	☑												
24P. PCB-1016 (12674-11-2)	☐	☐	☑												
25P. Toxaphene (8001-35-2)	☐	☐	☑												
J. RADIOACTIVITY															
(1) Alpha Total	☐	☑	☐	-16.5							pCi/L				
(2) Beta Total	☐	☑	☐	25.1							pCi/L				
(3) Radium Total	☐	☑	☐	0.842							pCi/L				
(4) Radium 226 Total	☐	☑	☐	0.107							pCi/L				

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. IS ANY POLLUTANT LISTED IN ITEM 1.30 A SUBSTANCE OR A COMPONENT OF A SUBSTANCE WHICH YOU DO OR EXPECT THAT YOU WILL OVER THE NEXT FIVE YEARS USE OR MANUFACTURE AS AN INTERMEDIATE OR FINAL PRODUCT OR BYPRODUCT?

☐ **YES** *(LIST ALL SUCH POLLUTANTS BELOW)* ■ **NO** *(GO TO B)*

B. ARE YOUR OPERATIONS SUCH THAT YOUR RAW MATERIALS, PROCESSES OR PRODUCTS CAN REASONABLE BE EXPECTED TO VARY SO THAT YOUR DISCHARGES OF POLLUTANTS MAY DURING THE NEXT FIVE YEARS EXCEED TWO TIMES THE MAXIMUM VALUES REPORTED IN ITEM 1.30?

☐ **YES** *(COMPLETE C BELOW)* ■ **NO** *(GO TO SECTION 3.00)*

C. IF YOU ANSWERED "YES" TO ITEM B, EXPLAIN BELOW AND DESCRIBE IN DETAIL THE SOURCES AND EXPECTED LEVELS OF SUCH POLLUTANTS THAT YOU ANTICIPATE WILL BE DISCHARGED FROM EACH OUTFALL OVER THE NEXT FIVE YEARS, TO THE BEST OF YOUR ABILITY AT THIS TIME. CONTINUE ON ADDITIONAL SHEETS IF YOU NEED MORE SPACE.

3.00 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

■ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

☐ **NO** *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services	9608 Loriet Blvd. Lenexa, KS	(913) 599-5665	Radioactivity, Metals, Volatile
			Compounds, Base/Neutral Com.

4.00 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	PHONE NUMBER (AREA CODE AND NUMBER)
Mark Howell, Sr. Director Plant Operations	(816) 640-3862
SIGNATURE: Mark Howell	DATE SIGNED: 9/28/2021

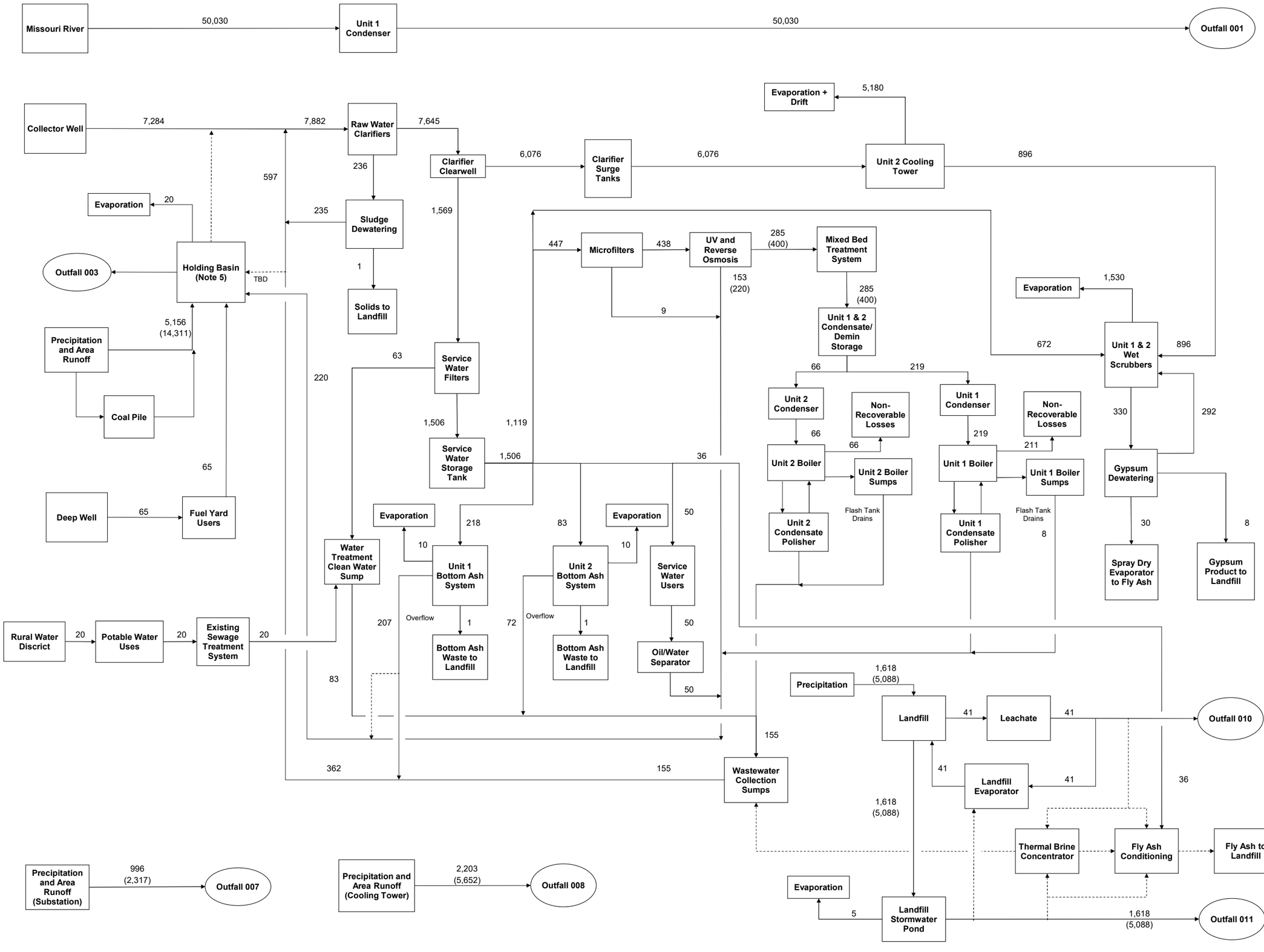
Outfall	Legal Description												UTM Coordinates	
													Easting (X)	Northing (Y)
001	NW	1/4	NE	1/4	SEC	17	T	7S	R	22E	Platte	County	329527	4368095
003	SE	1/4	SW	1/4	SEC	08	T	7S	R	22E	Platte	County	329237	4368416
007	SW	1/4	SE	1/4	SEC	08	T	7S	R	22E	Platte	County	330182	4368544
008	SW	1/4	NW	1/4	SEC	17	T	7S	R	22E	Platte	County	330288	4367711
009	SW	1/4	NE	1/4	SEC	17	T	7S	R	22E	Platte	County	329205	4367991
010	NE	1/4	SW	1/4	SEC	32	T	54N	R	36W	Platte	County	331268	4367693
011	NE	1/4	SW	1/4	SEC	32	T	54N	R	36W	Platte	County	331380	4367774
Intake	NW	1/4	NE	1/4	SEC	17	T	7S	R	22E	Platte	County	329202	4367999

Iatan Generating Station

Environmental Permits

Permit	Issuance Date
Iatan Title V Air Permit	October 1, 2014
Solid Waste Disposal Area Operating Permit	December 22, 2008


Iatan Generating Station
NPDES Outfalls
Iatan
Outfall #007
Outfall #003
Outfall #001
Intake
Outfall #008
Outfall #011
Outfall #010
N
2000 ft
Google Earth



no.	date	by	ckd	description
A	3/24/21	DKE	BDH	FINAL

Scenarios:

RAINFALL INCLUDED (SEE NOTE 3)	☑ Rainfall Included if Checked

NOTES:

1. Flows are shown in gallons per minute (gpm) and rounded to the nearest gpm.
2. Flows are based on average daily conditions. Max process flows shown in parentheses. Max flows do not balance.
3. Precipitation calculated by using SCS curve number method for the different runoff areas. Average flow is a 1 year 24 hour storm event averaged over a 24 hour period. Max flow, shown in parentheses, is a 25 year 24 hour storm event averaged over a 24 hour period. Precip may not balance.
4. Dashed lines represent intermittent process flows or atypical paths.
5. Flows around Holding Basin do not balance. Pumps from Holding Basin used intermittently to supply makeup to clarifiers based on level within the basin.

FINAL

BURNS McDONNELL

date 3/24/2021	detailed D. Elliott
designed D. Elliott	checked B. Hansen

evergy

Evergy - Iatan
Units 1 & 2
Water Mass Balance

project 131337	contract
drawing WMB-02	rev. --- A
sheet 1 of 1 sheets	
file	

8 Consolidating Runoff Volumes

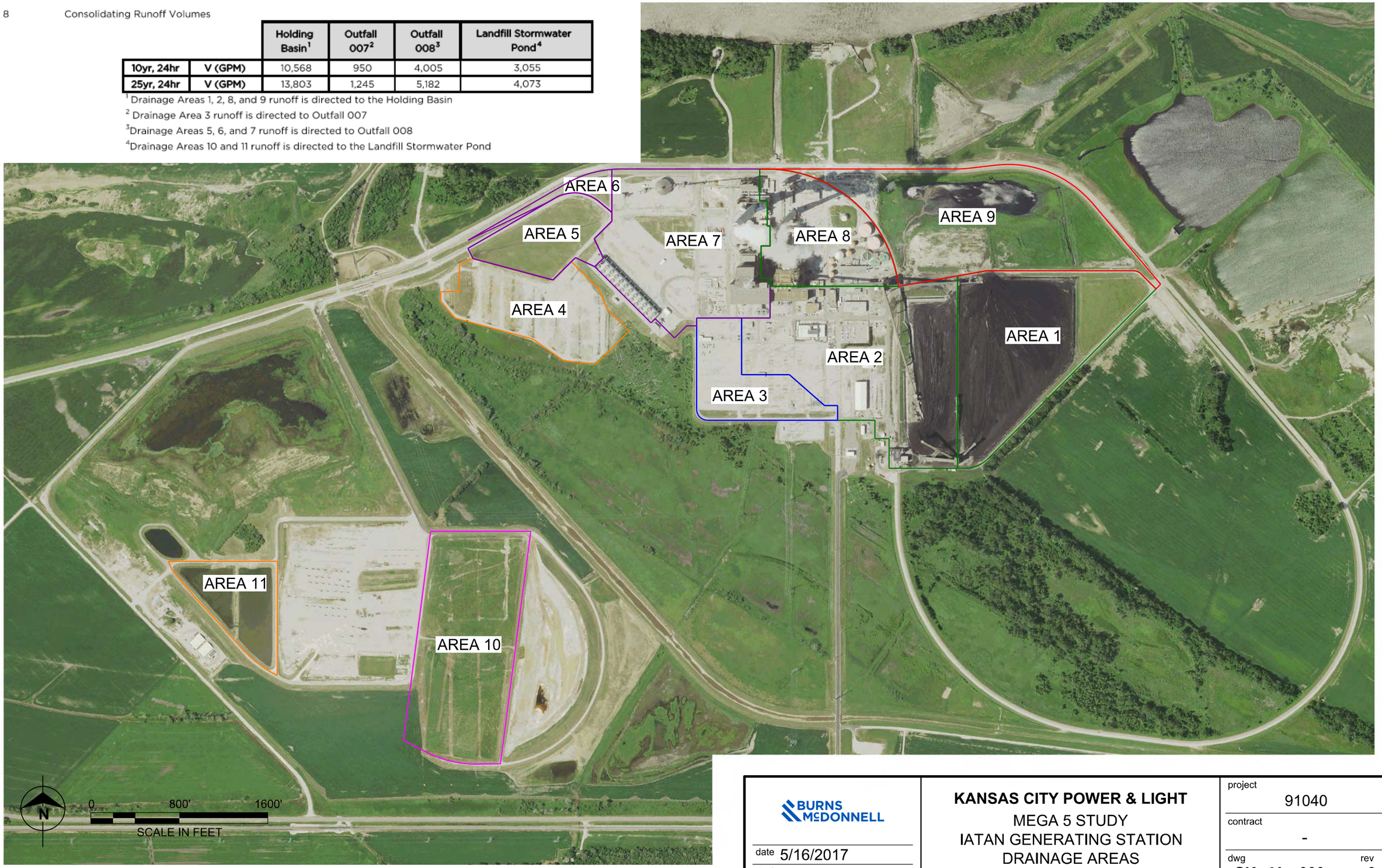
		Holding Basin[1]	Outfall 007[2]	Outfall 008[3]	Landfill Stormwater Pond[4]
10yr, 24hr	**V (GPM)**	10,568	950	4,005	3,055
25yr, 24hr	**V (GPM)**	13,803	1,245	5,182	4,073

[1] Drainage Areas 1, 2, 8, and 9 runoff is directed to the Holding Basin

[2] Drainage Area 3 runoff is directed to Outfall 007

[3] Drainage Areas 5, 6, and 7 runoff is directed to Outfall 008

[4] Drainage Areas 10 and 11 runoff is directed to the Landfill Stormwater Pond



BURNS McDONNELL

date 5/16/2017

designed A. ERICKSON

KANSAS CITY POWER & LIGHT

MEGA 5 STUDY

IATAN GENERATING STATION

DRAINAGE AREAS

project 91040

contract -

dwg **SK - IA - 000**

rev **0**