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-0105783
Owner:	Dyno Nobel Inc.
Address:	6440 South Millrock Drive, Cottonwood Heights, UT 84121
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Dyno Nobel – LOMO Plant
Facility Address:	11025 Highway D, Louisiana, MO 63353
Legal Description:	Sec's 21, 28, & 29, T54N, R1W, Pike County
UTM Coordinates:	See following page
Receiving Stream:	See following page
First Classified Stream and ID:	See following page
USGS Basin & Sub-watershed No.:	Buffalo Creek – Mississippi River 07110004-0702

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.; and in compliance with the Safe Drinking Water Act and authorized by 40 CFR 147 Subpart AA, this permit authorizes underground injection activities. This permit does not apply to other regulated areas.

FACILITY DESCRIPTION

SIC# 2873; NAICS# 325311; Fertilizer Production; Categorical 40 CFR 418
CWA §316(b)
This facility does not require a certified wastewater operator per 10 CSR 20-9.030 as this facility is privately owned.
UIC is for domestic wastewater only.

January 1, 2024
Effective Date

December 31, 2028
Expiration Date

John Hoke, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #003 – Industrial process water; water treatment plant, treated filter backwash from the water treatment plant; utilizes intake #IN1 or #IN2. The facility employs a sand filter to clean river water prior to use in the processes. Treatment: ferric chloride flocculent; bleach disinfection.

UTM Coordinates:	X = 670286, Y = 4365716
Receiving Stream:	Buffalo Creek
First Classified Stream and ID:	Buffalo Creek (P) (0014)
Design flow:	0.967 MGD
Actual flow:	0.6 MGD

OUTFALL #008 – Industrial process wastewater, non-process wastewater, and stormwater. Wastewater from the nitrogen products area is routed to an equalization lagoon where pH is adjusted before being comingled with other facilities wastewater. Piped 0.2 miles to the Mississippi River. Discharged to Waters of the US through the appurtenance of historic outfall #001. Other wastes included are untreated effluent from: cooling tower blowdown, boiler blowdown, electro dialysis reversal unit, weak acid plant, weak nitric acid product, neutralizer, victory boiler, boilers, and steam condensate.

Treatment: equalization, pH adjustment, EDR (Electro Dialysis Reversal). The EDR unit utilizes a membrane and an electrical potential to separate the ammonium and nitrate ions in the neutralizer condensate into a clean and a concentrated stream.

Allowed discharge from ancillary activities includes: fire hydrant flushing; condensate from air conditioners, coolers or chillers, and other compressors, and from the outside storage of refrigerated gases or liquids; pavement wash waters where no detergents or cleaning products are used and the wash waters do not come into contact with significant oil and grease deposits, sources of pollutants associated with industrial activities, or other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods and appropriate control measures are implemented to minimize discharges of mobilized solids and other pollutants; and routine external building wash down or power wash water that does not use detergents or cleaning products. This is a *de minimis* determination; and are allowed for discharge as sheet runoff, soaking into the ground, or can be discharged through outfall #008.

UTM Coordinates:	X = 670395, Y = 4366488 Discharge Location
UTM Coordinates:	X = 670174, Y = 4365798 Sampling Location
Receiving Stream:	Mississippi River
First Classified Stream and ID:	Mississippi River (P) (3699)
Design Flow:	0.5 MGD for all sources
Design Flow:	0.3 MGD for categorical wastewater

INJECTION WELLS - Injection wells were installed in the place of outfall #002 for domestic wastewater only. Injection wells at this site are regulated under the Safe Drinking Water Act's Underground Injection Control provisions, and are considered operational at the time of this permit. These systems are classified as Class V wells.

PERMITTED FEATURE #I01 - Subsurface domestic wastewater system

UTM Coordinates:	X = 669395, Y= 4366425

PERMITTED FEATURE #I02 - Subsurface domestic wastewater system

UTM Coordinates:	X = 669629, Y= 4366128

INTAKE STRUCTURES – Subject to CWA §316(b); total design intake flows are >2 MGD and at least ¼ of the actual intake flow volume is used for cooling purposes.

PERMITTED FEATURE #IN1 – Intake Structure on the Mississippi River; used for cooling water. 316(b)

UTM Coordinates:	X = 669859, Y= 4366940
Design Intake:	5.2 MGD (pump capacity)
Average Intake:	0.95 MGD
Maximum Actual Intake:	2.61 MGD

PERMITTED FEATURE #IN2 – Intake Structure on Buffalo Creek; used for process water primarily; can be used as makeup for cooling water.

UTM Coordinates:	X = 670178, Y= 4365682
Design Intake:	5.2 MGD (pump capacity)
Average Intake:	1.03 MGD
Maximum Actual Intake:	2.99 MGD

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #003
treatment plant backwash

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 **January 1, 2029**. These interim effluent limitations are effective beginning **January 1, 2024** and remain in effect through **December 31, 2028** 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	*	*	weekdays ⁂	24 hr. total
CONVENTIONAL					
Chlorine, Total Residual ‡	µg/L	*	*	weekly	grab
pH †	SU	6.5 to 9.0	-	weekdays ⁂	grab
Total Suspended Solids (TSS)	mg/L	100	50	once/month	grab
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/month	grab
Iron, Total Recoverable	µg/L	1504	862	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 N	mg/L	*	*	once/month	grab
Nitrogen, Total (TN) **	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 FEBRUARY 28, 2024.					
LIMIT SET: A (ANNUAL)					
DISINFECTION BY-PRODUCTS					
Chloroform	µg/L	*	*	once/year	grab
WHOLE TOXICITY					
Whole Effluent Toxicity, Chronic ⁝	TU_c	*		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2025.					

OUTFALL #003 *treatment plant backwash*	**TABLE A-2** **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 **January 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	*	*	weekdays ⁂	24 hr. total
CONVENTIONAL					
Chlorine, Total Residual ‡	µg/L	19.0	8.0	weekly	grab
pH †	SU	6.5 to 9.0	-	weekdays ⁂	grab
Total Suspended Solids (TSS)	mg/L	100	50	once/month	grab
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/month	grab
Iron, Total Recoverable	µg/L	1504	862	once/month	grab
NUTRIENTS					
Ammonia as N – Oct thru March	mg/L	5.7	1.7	once/month	grab
Ammonia as N – April	mg/L	5.7	1.5	once/month	grab
Ammonia as N – May	mg/L	5.7	1.1	once/month	grab
Ammonia as N – June	mg/L	5.7	0.8	once/month	grab
Ammonia as N – July, August	mg/L	5.7	0.7	once/month	grab
Ammonia as N – September	mg/L	5.7	0.9	once/month	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as N	mg/L	*	*	once/month	grab
Nitrogen, Total (TN) **	mg/L	*	*	once/month	grab
OTHER					
Chloride	mg/L	358	195	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 FEBRUARY 28, 2029.					
LIMIT SET: A (ANNUAL)					
DISINFECTION BY-PRODUCTS					
Chloroform	µg/L	*	*	once/year	grab
WHOLE TOXICITY					
Whole Effluent Toxicity, Chronic ⁝	TU_c	*		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2030.					

OUTFALL #008 *main process water outfall*	**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 **January 1, 2024** 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	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
ΔT (Note 3)	°F	5	*	daily	calculation
T_{cap} January ‡‡	°F	45	*	daily	calculation
T_{dev} January ‡‡	°F	48	*	daily	calculation
T_{cap} February ‡‡	°F	45	*	daily	calculation
T_{dev} February ‡‡	°F	48	*	daily	calculation
T_{cap} March ‡‡	°F	57	*	daily	calculation
T_{dev} March ‡‡	°F	60	*	daily	calculation
T_{cap} April ‡‡	°F	68	*	daily	calculation
T_{dev} April ‡‡	°F	71	*	daily	calculation
T_{cap} May ‡‡	°F	78	*	daily	calculation
T_{dev} May ‡‡	°F	81	*	daily	calculation
T_{cap} June ‡‡	°F	86	*	daily	calculation
T_{dev} June ‡‡	°F	89	*	daily	calculation
T_{cap} July ‡‡	°F	88	*	daily	calculation
T_{dev} July ‡‡	°F	91	*	daily	calculation
T_{cap} August ‡‡	°F	88	*	daily	calculation
T_{dev} August ‡‡	°F	91	*	daily	calculation
T_{cap} September ‡‡	°F	86	*	daily	calculation
T_{dev} September ‡‡	°F	89	*	daily	calculation
T_{cap} October ‡‡	°F	75	*	daily	calculation
T_{dev} October ‡‡	°F	78	*	daily	calculation
T_{cap} November ‡‡	°F	65	*	daily	calculation
T_{dev} November ‡‡	°F	68	*	daily	calculation
T_{cap} December ‡‡	°F	52	*	daily	calculation
T_{dev} December ‡‡	°F	55	*	daily	calculation
Time of Deviation-Month ‡‡	hours	*	*	daily	calculation
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2024.					
LIMIT SET: A (ANNUAL)					
Total Time of Deviation °F ‡‡	annual hours	87.6	-	sum of all days	calculation
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2025.					

OUTFALL #008 *main process water outfall*	**TABLE A-5** **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 **January 1, 2024** 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 (MONTHLY)					
CONVENTIONAL					
Oil & Grease	mg/L	15	10	weekly ⁑	grab
pH †	SU	6.5 to 9.0	-	continuous	continuous
pH: Individual Excursion Time †	minute	60	*	continuous	sum
pH: Total Excursion Time †	hours	-	7.43	continuous	sum
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2024.					
LIMIT SET: BA - BIANNUAL					
OTHER					
Whole Effluent Toxicity, Acute ⁝	TU_a	3.3		twice/year	grab
MONITORING REPORTS SHALL BE SUBMITTED BI-ANNUALLY; THE FIRST REPORT IS DUE JULY 28, 2025.					

OUTFALL #008 *main process water outfall*	**TABLE A-6** **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-7 must be achieved as soon as possible but no later than **January 1, 2027**. These interim effluent limitations are effective beginning **January 1, 2024** and remain in effect through **December 31, 2026** 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: N - NUTRIENTS					
NUTRIENTS					
Ammonia as N – Jan, Feb, Mar	mg/L	128.4	48.9	weekly ‡	grab
Ammonia as N – Apr, May, Jun	mg/L	128.4	51.9	weekly ‡	grab
Ammonia as N – Jul, Aug, Sep	mg/L	128.4	51.9	weekly ‡	grab
Ammonia as N – Oct	mg/L	128.4	48.9	weekly ‡	grab
Ammonia as N – Nov, Dec	mg/L	128.4	48.9	weekly ‡	grab
Ammonia as N – ELG All Months	lbs/day	420	158	weekly ‡	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate as N	mg/L	*	*	weekly ‡	grab
Nitrate as N – ELG	lbs/day	587	218	weekly ‡	grab
Nitrite as N	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as Nitrogen	mg/L	*	*	once/month	grab
Nitrogen, Total (TN) **	mg/L	*	*	once/month	calc

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2024.

OUTFALL #008 *main process water outfall*	**TABLE A-7** **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 **January 1, 2027** 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: N - NUTRIENTS					
NUTRIENTS					
Ammonia as N – Jan, Feb, Mar	mg/L	87.8	48.9	weekly ‡	grab
Ammonia as N – Apr, May, Jun	mg/L	87.8	51.9	weekly ‡	grab
Ammonia as N – Jul, Aug, Sep	mg/L	87.8	51.9	weekly ‡	grab
Ammonia as N – Oct	mg/L	87.8	48.9	weekly ‡	grab
Ammonia as N – Nov, Dec	mg/L	92.5	48.9	weekly ‡	grab
Ammonia as N – ELG All Months	lbs/day	420	158	weekly ‡	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate as N	mg/L	*	*	weekly ‡	grab
Nitrate as N – ELG	lbs/day	587	218	weekly ‡	grab
Nitrite as N	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as Nitrogen	mg/L	*	*	once/month	grab
Nitrogen, Total (TN) **	mg/L	*	*	once/month	calc

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

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

* Monitoring and reporting requirement only

‡ 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 dechlorinate unless it is necessary to meet permit limits.

** Nitrogen, Total. This permit establishes reporting for total nitrogen, (TN), is a calculation using TKN + Nitrate + Nitrite.

† pH: the facility will report the minimum and maximum values; pH is not to be averaged.
For outfall #008, the facility may exceed pH limitations for up to 7.43 hours per month, but no more than 60 minutes in duration for one excursion. This allowance is not provided to any other outfalls.

⸸ Temperature Change
$\Delta T = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e)] - T_s$
ΔT the change in temperature in °F at the edge of the thermal mixing zone
$Q_s/4$ the receiving stream flow in cfs divided by 4
Q_e effluent flow in cfs
T_s measured stream temperature
T_e measured temperature of effluent

⸸⸸ To calculate the temperature of the stream at the edge of the mixing zone, the facility will use the following equation: Designated as T_{emz} in the equation below, the facility can determine compliance with T_{dev}, T_{cap}, and percent time deviation allowance.
$T_{emz} = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e))]$
T_{emz} is the temperature of the receiving stream at the edge of the thermal mixing zone
$Q_s/4$ is the receiving stream flow in cfs divided by 4
Q_e effluent flow in cfs
T_s measured stream temperature
T_e measured temperature of effluent

Temperature cap (T_{cap}) is the effluent temperature in the receiving stream at the edge of the thermal mixing zone. It may be exceeded for no more than 87.6 hours (87 hours and 36 minutes).

Temperature deviation (T_{dev}) is the maximum effluent temperature limit applicable in the receiving stream at the edge of the thermal mixing zone which may never be exceeded. MoCWIS is set up to receive one value for the thermal limitations for each month. The facility will violate the thermal limit if the value entered in MoCWIS is above the T_{dev} value for the month.

Percent Time Deviation Allowance: Missouri's Water Quality Standards allows permittees to exceed their applicable T_{cap} criteria (but not the T_{dev} criteria). The time of deviation allowance shall be tracked in hours per year <u>any</u> time their calculated temperature values exceed a specific month's daily maximum T_{cap} effluent limit. The permittee is required to monitor and report the total monthly exceedance time.
a) If T_{emz} is less than T_{cap} then the permittee records "0" hours deviation.
b) Any time T_{emz} is above T_{cap} then the facility reports the number of hours of deviation.
c) The permittee shall report each month and on January 28th for each calendar year the total number of hours the facility exceeded their temperature cap effluent limits; compliance is based on exceedances for the entire year.

A violation occurs if either:
a. The percent time deviation allowance is above 87.6 hours (87 hours and 36 minutes) for the calendar year; and/or
b. The T_{emz} value reported is above the T_{dev} limitation.

⁑ Weekly monitoring is monitoring any one day between Monday and Sunday. For weeks spanning two months, only 1 sample is required. Only samples collected in the month may be averaged for the month. All data obtained must be uploaded as a DMR attachment per Standard Conditions.

⁂ Weekday Monitoring is monitoring each day, Monday Through Friday; sampling on federal holidays is not required.

⁝ Whole Effluent Toxicity (WET) tests: see special 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

φ Twice yearly sampling schedule:

MINIMUM BI-ANNUAL SAMPLING REQUIREMENTS			
HALF	MONTHS	SAMPLING REQUIREMENT	REPORT IS DUE
First Half of Year	January through June	Sample at least once during any month of the half year	July 28th
Second Half of Year	July through December	Sample at least once during any month of the half year	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. 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 JANUARY 28, 2025.

2. Within 5 years of the effective date of this permit, the facility shall attain compliance with the final effluent limits at outfall #003 for chloride, total residual chlorine, and ammonia as N.

3. Within 3 years of the effective date of this permit, the facility shall attain compliance with the final effluent limits at outfall #008, for ammonia as N.

C. STANDARD CONDITIONS

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

D. SPECIAL CONDITIONS

1. CWA §316(b) Cooling Water Intake Structures (CWIS) Requirements
   (a) This facility is required to continue operating the makeup water intake structure to minimize impingement and entrainment.
   (b) This facility has installed cooling towers. This technology is deemed the best technology available (BTA) per 40 CFR 125.94(c)(1) for impingement. The closed cycle cooling system has also been determined as the BTA standard for entrainment in accordance with 40 CFR 125.94(d). These BTA decisions were implemented by the Department serving as the Director in accordance with 40 CFR 125.98(b)(2).
   (c) This facility must conduct a surface visual or remote inspection of both CWIS at least weekly to comply with 40 CFR 125.96(e). Reports or certification statements of the visual inspections will be submitted with the annual status report. If deficiencies are noted, the facility shall include a description of the deficiency and steps made to correct the deficiency. A subsurface (below water level) inspection is not required weekly although the facility may need to make periodic inspections if the CWIS is not functioning optimally or if a structural assessment is required. Any inspections conducted in addition to the weekly surface inspections will also be supplied to the Department.
   (d) Annual status reports shall be submitted by February 28th each year and report any take by the facility.

(e) 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."
(f) The facility must re-submit the 2023 application for the 40 CFR 122.21(r) studies with the next renewal. If any part of the information has changed, the information must be updated.
(g) This permit may be reopened and modified, or alternatively revoked and reissued to: incorporate new or modified requirements applicable to existing cooling water intake structures under Section 316(b) of the Clean Water Act. In the event it is necessary for this permit to be reopened and modified, or alternatively revoked and reissued, the permittee shall comply with any such new or modified requirements or standards applicable to existing cooling water intake structures under §316(b) of the Clean Water Act.

2. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows for Outfall #008:
(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 9%; the dilution series is: 81.9%, 27.3%, 9.1%, 3.0%, and 1.0%.
(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.
(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 <u>consecutive</u> 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.

3. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows for Outfall #003:
(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.

4. 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.

5. 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".

6. 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.

7. Site-wide minimum Good Housekeeping and 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) The facility shall not discharge substances resulting from an on-site spill.
(d) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
(e) 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.
(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) 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.
(i) Salt and sand shall be stored in a manner minimizing mobilization in stormwater (for example: under roof, in covered container, under tarp, etc.).

8. All industrial sludge must be properly handled; sludge is not authorized for land application, interment, or discharge under this permit.

9. 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 or other stored products.
(b) All leaked liquids captured in the secondary containment area shall be expeditiously removed and the source of the leak determined. Leaks or otherwise compromised equipment or appurtenances shall be promptly addressed/repaired.
(c) Before releasing water accumulated in secondary containment areas, the water and area must be examined for presence of leaked liquids or hydrocarbon odor or presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).
(d) Unimpacted stormwater (i.e. free from leaked liquids, 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 insuring appropriate methods are used to remove sheen, odor, or other cues of a leaked liquid's presence.
(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.

10. Oil/Water Separators. This site is authorized to operate oil water separator tanks (if considered USTs) for the treatment of wastewater or stormwater and falls under 10 CSR 26-2.010(2)(B) if treating water with petroleum oils. OWS, 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. Petroleum oil water separator sludge is considered used oil; sludge must be disposed of in accordance with 10 CSR 25-11.279. OWS treating animal, vegetable, or food grade oils are not required to be authorized under these regulations. All best management practices for all OWS systems must be adhered.

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

12. 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.

13. 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).

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

15. This permit does not cover land disturbance activities.

16. 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.

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

18. 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.

19. All records required by this permit may be maintained electronically. These records can be maintained in a searchable format.

20. 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.

21. 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.

22. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with Sections 301, 302, 306, 307, and 403 of the federal Clean Water Act, except for standards imposed under Section 307 for toxic pollutants injurious to human health, and with equivalent provisions of the Missouri Clean Water Law, in accordance with Section 644.051.16 RSMo and CWA §402(k). 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.

23. 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.

E. UNDERGROUND INJECTION CONTROL (DOMESTIC WASTEWATER ONLY)

1. All Class V wells must be registered with Wellhead Protection in accordance with 40 CFR 144.26, and shall comply with the reporting requirements of 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 (including closure). Only one submittal is required for the life of the Class V well.

2. The facility shall maintain all service and maintenance records for a period of at least five years. These records shall be made available to Department personnel upon request.

3. The facility shall develop, maintain, and implement an Operation and Maintenance (O&M) manual.
   (a) The manual must include all necessary items to ensure the operation and integrity of the waste handling system.
   (b) The O&M manual must include key operating procedures, an aerial or topographic site map with the feature outlined, and a brief summary of the operation of the facility.
   (c) The O&M manual shall be made available to the operator.
   (d) The O&M manual shall be reviewed and updated at least every five years or when changes have occurred, and be made available to Department personnel upon request.
   (e) The O&M manual may be maintained electronically.
   (f) The facility has 90 days from the date of permit issuance to complete and implement the new O&M plan. The new plan is not required to be submitted.

4. Subsurface Distribution System Site Restrictions (10 CSR 20-8.200(7))
   (a) Subsurface land application shall not occur within 100 feet of any well, sinkhole, or losing stream.
   (b) All systems shall not allow effluent to surface, reach waters of the state, effect a stream, or effect any nearby buildings or dwellings.
   (c) Subsurface distribution area(s) access must be controlled to prevent damage from traffic, heavy vehicles, livestock, construction, or digging.
   (d) Subsurface distribution areas shall have adequate surface drainage and maintain vegetation (if appropriate).
   (e) Systems shall be placed at or greater than 10 feet from the property line.

5. The permittee shall notify the Department before conversion or abandonment of the well, or in the case of area permits, before closure of the project.

6. Requirements prior to abandoning wells, the facility shall submit a well abandonment plan to the Water Protection Program, which contains at least the details to comply with the following abandonment requirements:
   (a) The permittee shall close the well in a manner that prevents the movement of fluid containing any contaminant into an USDW, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 141 or may otherwise adversely affect the health of persons.
   (b) If the Department has determined that the proposed well abandonment plan is not acceptable to the site, the permittee must grout the well full length with neat cement or bentonite.
   (c) The permittee shall dispose of or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State, and local regulations and requirements.

7. Plugging and abandonment report: Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the permittee shall submit a report to the Water Protection Program. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:
   (a) A statement that the well was plugged in accordance with the plan previously submitted to the Water Protection Program; or
   (b) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the regional administrator, specifying the differences.

8. After a cessation of operations the permittee shall plug and abandon the well in accordance with the plan unless the permittee:
   (a) Provides a written notice to the Water Protection Program that the well will be used within the next two years; and
   (b) Describes actions or procedures, satisfactory to the Water Protection Program, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Water Protection Program.

F. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal 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-0105783
DYNO NOBEL – LOUISIANA MO

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.

This permit is also issued under the authority of the Save Drinking Water Act, authorized by the EPA for State of Missouri administration at 40 CFR 147.1301 which incorporates portions of RSMo 644, 10 CSR 20-6, and 10 CSR 20-7 by reference.

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, 316(b)
SIC Code(s):	2873
NAICS Code(s):	325311
Application Date:	01/26/2023
Modification Date:	02/01/2021
Expiration Date:	07/31/2023
Last Inspection:	06/10/2021

FACILITY DESCRIPTION

The Dyno Nobel Inc. facility known as the LOMO Plant is located at the junction of Highway 79 and County Road D on 220 acres. It currently employs 78 workers. The LOMO Plant manufactures nitric acid, ammonium nitrate, and low-density industrial-grade prill. The plant receives anhydrous ammonia via underground pipeline and oxidizes it over a platinum alloy catalyst to produce 58 percent nitric acid. Some of the nitric acid is distilled to produce concentrations of 67, 83, and 98 percent nitric acid. Nitric acid products are used by other industries for etching and nitrating.

The LOMO plant neutralizes the remaining 58 percent nitric acid with ammonia to produce an ammonium nitrate solution. Some of the ammonium nitrate solution is marketed to the explosives manufacturing industry as a raw material in emulsion explosives for the mining industry. Some of the ammonium nitrate solution is concentrated and processed into an ammonium nitrate prill and marketed as a raw material for production of industrial explosives for the mining industry. The LOMO plant's ammonium nitrate products are marketed for use by other industries. The LOMO plant does not manufacture explosives.

The LOMO facility began in 1941 when the U. S. Government announced that Louisiana would be the site of an ordinance works facility for the production of anhydrous ammonia. Hercules Powder Company designed, built, and operated the plant. In the 1950's, the Bureau of Mines built and operated a coal to gas synthetic fuel facility using technology captured during World War II. When this exercise lost funding, Hercules took ownership of the plant. In the 50's and 60's, Hercules added a number of production units including the nitric acid and ammonium nitrate units currently in operation.

In June of 1985, the nitrogen products portion of this facility was purchased by IRECO. IRECO was a North American operation of Dyno Industries A. S. A. of Oslo, Norway. In 1993, IRECO's name was changed to DYNO NOBEL INC.

This entire complex was once a single plant, thus the reason for the (formerly) shared outfall #001, a previously shared outfall between Dyno Nobel LOMO manufacturing areas, Hercules, and Ashland Water Technologies (Calumet). Hercules has since ceased all surface water discharging activities but is still covered under MO-0000311 for groundwater only. In March 2015, Hercules Incorporated (now LLC) (formerly Missouri Chemical Works (MCW)) was removed as a shared partner of this outfall because the facility no longer discharges to surface waters of the state.

The industrial processes are essentially divided into four primary categories that include the acid oxidation process (AOP), nitric acid concentration (NAC) system, ammonium nitrate liquor (NAL) production, and a portion of NAL which is used to produce prilled ammonium nitrate through a separate manufacturing process.

Outfall #003 discharges filter backwash from an on-site water treatment plant. Water used in production is pulled from the Mississippi River, via three pumps, and treated in an onsite water filtration plant. The facility also has a backup pump station to pull water from Buffalo Creek if needed. The water first enters through one of two settling basins where polymers are added to enhance the settling of solids. The settling basins are approximately 25 feet deep, are baffled, and equipped with paddle wheels to keep the water in circulation. A bleach solution is also added to the settling basins to control algae. The water proceeds to one of two sand filtration tanks. The original sand filters were abandoned in place. The operational sand filters are backwashed to a large holding pond with clear well water approximately every 48 hours. The holding pond discharges to Buffalo Creek as outfall #003. Ferric chloride is also added to the system and backwashed to the holding pond.

40 CFR 418 subpart D and E (fertilizer manufacturing) apply to this facility (applicability statements in 40 CFR 418.40 and 418.50). This facility receives all of their raw ammonia material in liquid form via pipeline and stored in holding tanks. This facility does not make or store: dynamite, nitroglycerin, cyclotrimethylene trinitramine (RDX), cyclotetramethylene tetranitramine (HMX), or trinitrotoluene (TNT), only precursors, therefore 40 CFR 457 is not applicable. 40 CFR 414 subpart G (bulk organic chemicals) was not applied as 40 CFR 418 includes similar requirements although this facility bulks chemicals.

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.

PERMITTED FEATURES TABLE

OUTFALL	AVG. FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE	
#003	0.3 MGD	0.35 MGD	chlorination, flocculation, settling and sedimentation	sand filter backwash; water treatment plant	
#008	0.47 MGD	0.5 MGD (all sources) 0.3 MGD (categorical waste-water)	weir box settling, grit removal, Best Management Practices (for stormwater)	<u>Type:</u> stormwater fire protection testing water condensate, storage and prill areas cooling tower blowdown acid plant CT NAC plant CT storage area CT boiler blowdown 225 pound warehouse boiler 75 pound warehouse boiler Victory Boiler electro dialysis reversal (EDR) unit AN neutralizer unit weak acid plant/WNA product Nitrogen Lagoon Steam Condensate (multiple outlets)	<u>Average Flow:</u> variable, 15 gpm; 0.0216 MGD *de minimis* 15 gpm; 0.0216 MGD 61 gpm; 0.08784 MGD 30 gpm; 0.0432 MGD 20 gpm; 0.0288 MGD 70 gpm; 0.1 MGD 55 gpm; 0.08 MGD 60 gpm; 0.086 MGD infiltration; 5 gpm; 0.0072 MGD

Removed Outfalls:

<u>OUTFALL #001</u> – Eliminated at 2018 renewal. The facility demonstrated that all of their process waters discharge through a sampling point called outfall #008. Calumet Missouri MO-0137243 and this facility both discharge through the structure called outfall #001 but both facilities sample their respective effluents prior to comingling.

Legal Description: E ¼, SW ¼, Sec 21, T54N, R1W, Pike County
UTM Coordinates X = 670531, Y = 4366585
Receiving & First Classified Stream and ID: Mississippi River (P) (3699)

OUTFALL #002 – Eliminated at 2018 renewal. Domestic Wastewater Imhoff Unit; Imhoff cone, ozone vault, UV; Plugged December 2017; Legal Description: NW ¼, SE ¼, Sec 20, T54N, R1W, Pike County; UTM Coordinates: X = 669660, Y = 4367029

OUTFALL #004 – Closed since 2005; stormwater must cross a road to exit through this outfall but this does not occur.

FACILITY PERFORMANCE HISTORY & COMMENTS

The electronic discharge monitoring reports were reviewed for the last five years. pH and TSS were exceeded at outfall #003; pH, nitrate, and temperature was exceeded at outfall #008. The latest inspection, completed June 2021 was reviewed. The facility was out of compliance because they were not meeting permit limits. During the last permit term, TSS was reviewed under a formal modification; the monthly average TSS limit was raised from 30 to 50 mg/L. Exceedances are not expected further. The facility provided a microscopic analysis of the TSS. The micro identification of the material on the TSS filter demonstrated the presence of diatoms as the only significant material observed. The cell walls of diatoms are made up of silicate material which has a high weight. Green algae loses weight in this process, whereas the silicate in the diatom cell wall does not. This contributes to a high TSS value, especially in times of high heat in which the presence of diatoms increases. Because microfiltration of the wastewater is not a desired treatment method, the TSS limits can remain at this level. Missouri has no numeric WQS for diatoms or silicate; general criteria pursuant to 10 CSR 20-7.031(4) are met with the current TSS limits as the Mississippi River contains a significant amount of solids.

The facility was rated as a major facility July 28, 2006. No changes have occurred at the site which warrant re-rating.

The facility and EPA entered into a civil agreement, Civil No. 19-5031-MDH, filed February 27, 2020. The agreement required the facility to submit a SWPPP; the Department reviewed the SWPPP which was adequate. The agreement did not include any other requirements pertinent to this permit renewal.

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 F00276893; this number was verified to be associated with the facility and precisely matches the continuing authority reported by the facility.

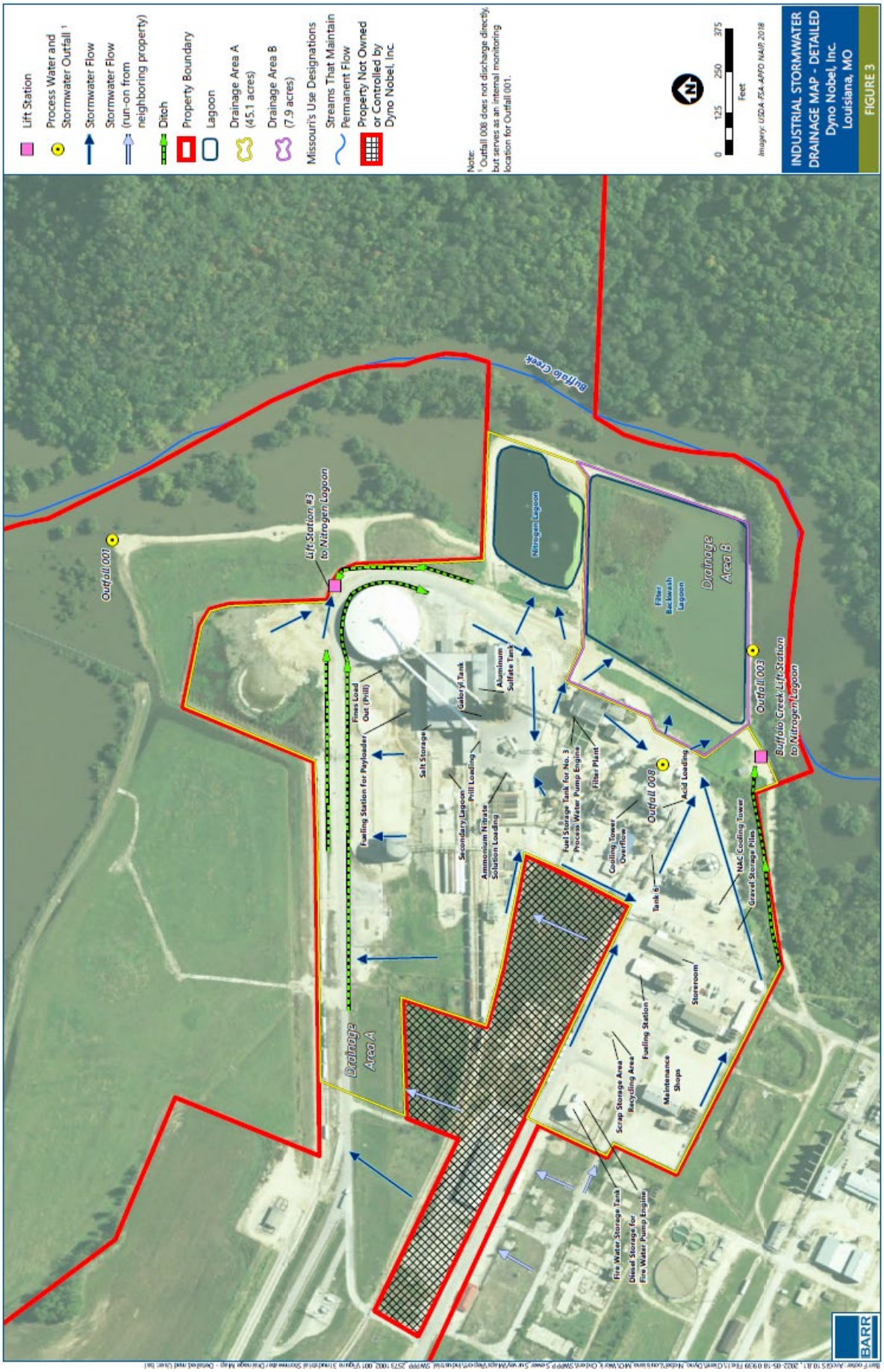
Pursuant to 10 CSR 20-6.010(2)(B)4, this facility is a Level 4 Authority.

- ✓ Pursuant to 10 CSR 20-6.010(2)(D), on June 14, 2023 the facility provided a written statement from the higher level authority declining management of the facility under 10 CSR 20-6.010(2)(C)1.

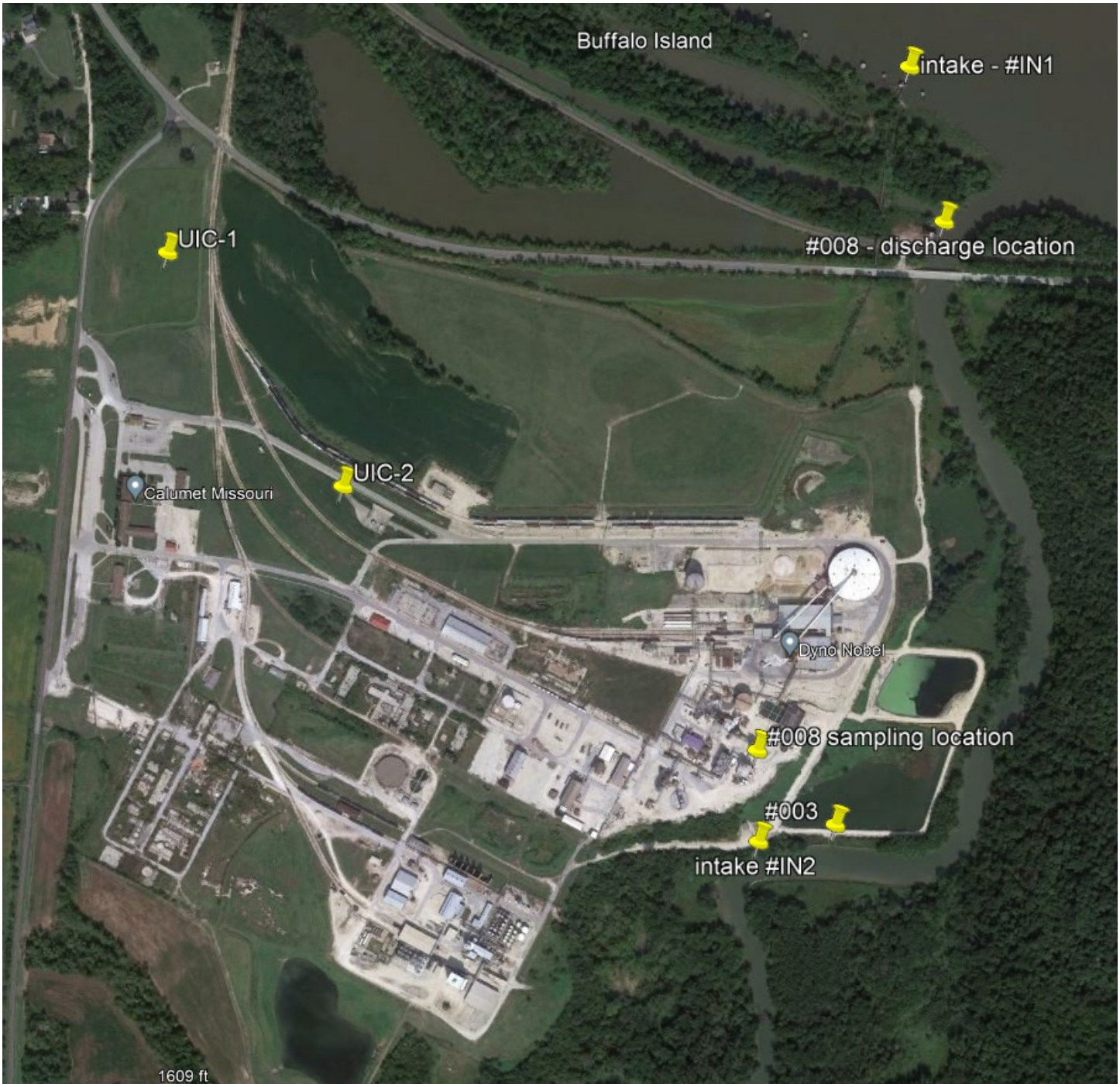
OTHER ENVIRONMENTAL PERMITS

In accordance with 40 CFR 122.21(f)(6), the Department evaluated other environmental permits currently held by this facility. This facility has a Part 70 air permit OP2019-029 and a Risk Management Program ID# 110000595954.

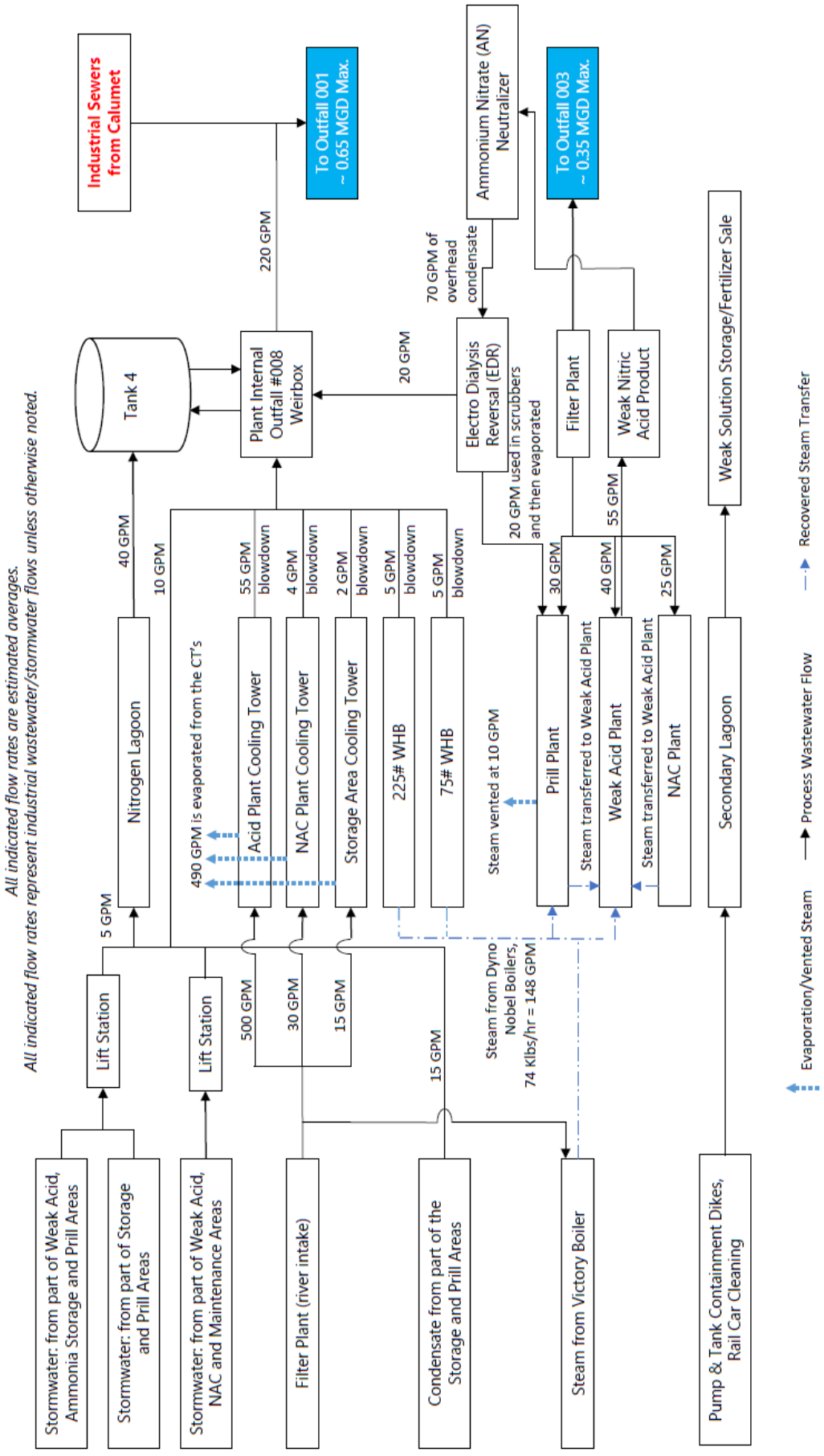
FACILITY MAP #1



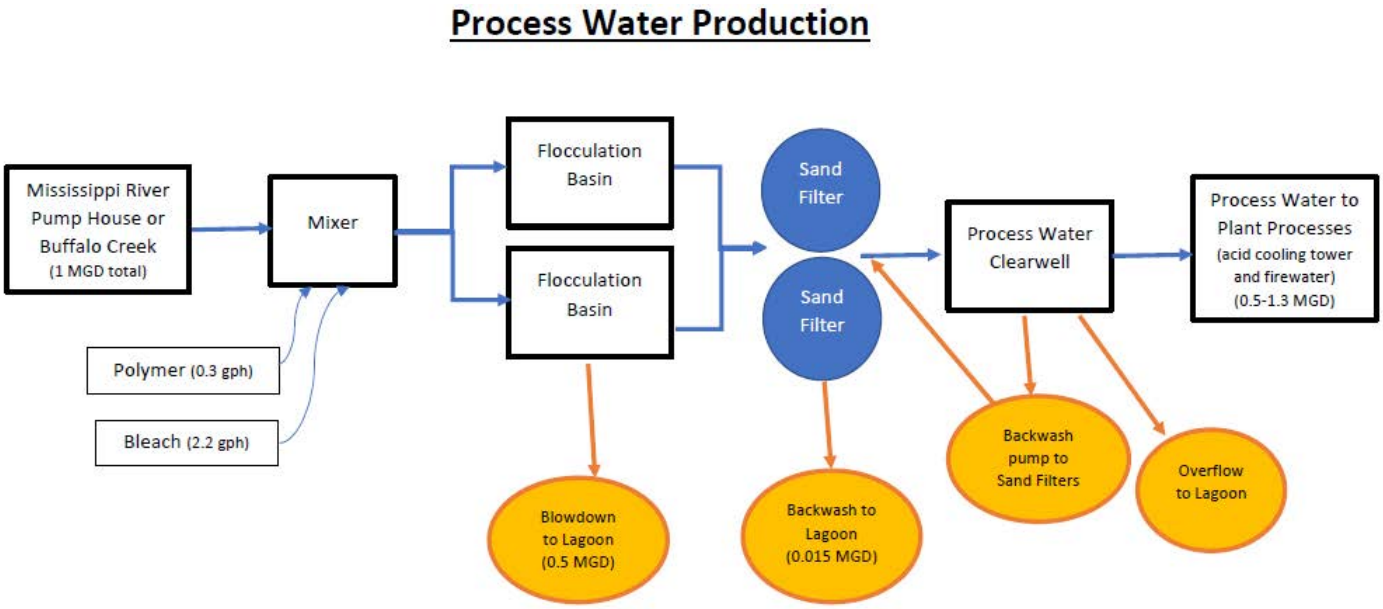
FACILITY MAP #2



WATER BALANCE DIAGRAM #1



WATER BALANCE DIAGRAM #2



Lagoon is outfall #003.

PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO SEGMENT	12-DIGIT HUC
#008 #IN1	Mississippi River	P	3699	DWS, HHP, IND, IRR, LWW, SCR, WBC-A, WWH (AQL)	0 mi	07110004-0702 Buffalo Creek – Mississippi River
#003 #IN2	Buffalo Creek	P	0014	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0 mi	

Classes are representations of hydrologic flow volume or lake basin size per 10 CSR 20-7.031(1)(E).
Designated uses are described in 10 CSR 20-7.031(1)(F).
WBID: Waterbody Identification Number per 10 CSR 20-7.031(1)(Q) and (S)
HUC: Hydrologic Unit Code https://water.usgs.gov/GIS/huc.html
Water Quality Standards Search https://apps5.mo.gov/mocwis_public/waterQualityStandardsSearch.do

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/ 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 beneficial uses of water as provided in 10 CSR 20-7.031. 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.

- ✓ Applicable; the Mississippi River is associated with the 2006 EPA approved TMDL for PCBs and Chlordane. This facility is not considered to be a source of the above listed pollutants or considered to contribute to the impairment.
- ✓ On March 2, 2022, the Department evaluated the river and determined that the available data indicated there were no impairments.

Background data for Mississippi River found at Hannibal, MO, USGS #5501600. The calculation worksheet available upon request; this information was gathered in 2018; there does not appear to be any new data for these parameters.

PARAMETER	USGS PARAMETER #	DATES	RANGE	AVERAGE
Aluminum	01105	6/2/1988 through 6/6/1989 *	80 to 2200 µg/L	173.38 µg/L
Ammonia as N	00610	10/7/1981 through 6/6/1989 *	ND to 0.69 mg/L	0.46991 mg/L

Non-Detects (ND) were attuned by diving the detection limit by 2.
* Only data available

WATERBODY MIXING CONSIDERATIONS

For outfall #003, mixing zone and zone of initial dilution are not allowed per 10 CSR 20-7.031(5)(A)4.B.(I)(a) and (b), as the base stream flow does not provide dilution to the effluent. The previous permit provided default mixing for Buffalo Creek, however, the creek does not sustain flow 100% of the time above 0.1 cfs according to USGS Stream Stats https://streamstats.usgs.gov/ss/ online software For outfall #008 to the Mississippi River identified below, mixing is afforded, see low flow values [calculated for the receiving stream/calculated utilizing the lake dimensions] 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.

Dyno's discharge was also compared to the Calumet discharges to determine if there were any overlapping pollutants of concern and if those pollutants were causing a negative synergistic effect. The third facility at the site, Former Missouri Chemical Works (MCW); also known as Ashland-Hercules, ceased surface water discharges in 2013. Both facilities discharge through outfall #001 into the Mississippi River. See Part IV below for specific determinations.

RECEIVING STREAM LOW-FLOW VALUES

Receiving stream	Low-Flow Values (CFS)*			Zone of Initial Dilution (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]			Mixing Zone (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]		
	1Q10	7Q10	30Q10	1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
Mississippi (P)	18,900	22,449	26,009	4.6	4.6	4.6	4725	5612.3	6502.3

The stream flow data for the Mississippi River was retained from the previous permit; the US Army Corps of Engineers (Corps) has not changed the flow management regime of this river. ZID cannot be more than 10x the DF. ZID was adjusted to 10x the design flow instead of 1/10th of ¼ of the stream flow.

THERMAL MIXING CONSIDERATIONS

Thermal mixing is based on different regulations than toxic mixing; thermal mixing considerations are found in 10 CSR 20-7.031(5)(D).

✓ This facility has thermal discharge limitations where mixing is incorporated, see permit Part A and fact sheet Part IV for specific thermal limitations and derivation of the limits.

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). Parameters are discussed individually in Part IV of the fact sheet.

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. See https://dnr.mo.gov/document-search/antidegradation-implementation-procedure 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. 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; there are no new processes at this facility.

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) or 10 CSR 20-6.200(2), these best management practices are not specifically included only 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. The facility shall not discharge substances resulting from an on-site spill.

CLOSURE

To properly decontaminate and close a wastewater storage structure, treatment structure, lagoon, basin, or device, 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

✓ This facility has unused treatment devices. The facility is required by special conditions to determine if the old unused sand filter(s) can be removed and closed over the permit term. If the old devices cannot be removed, the facility is required to submit a closure document explaining why the device(s) cannot be removed at the next permit term.

COOLING WATER INTAKE STRUCTURES (CWIS)

In the 2018 renewal, the Department included requirements to evaluate the two cooling water intake structures pursuant to 40 CFR 122.21(r) et seq. This review serves to show that the facility provided the required information, and the Department's decisions. The facility's intake flows are greater than 2 MGD, and below 125 MGD. 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.

Parameter	Acid Cooling Tower	NAC Cooling Tower	Ammonia Storage Cooling Tower
Manufacturer	Marley/Psychrometric Systems, Inc.	Marley	Marley
Model	CFD 303639-3I-26	NC-4023-S	NC-8309CL-2SM
Number of Cells	3	3	2
Design Circulation Rate (gpm)	18,000	2,349	2,800
Makeup Rate (gpm)[a]	457	27	14

40 CFR 122.21(r) - APPLICATION REQUIREMENTS FOR FACILITIES WITH COOLING WATER INTAKE STRUCTURES (CWIS):

The facility submitted two documents on January 26, 2023, which include responsive information labeled (r)(2) through (r)(8) including a summary, and additional appendices and diagrams. These documents were logged into the permit application record on January 26, 2023, 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 January 26, 2023. No responses were received.

(r)(1): Applicability

(r)(1) is the applicability statement, Dyno 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 (r)(2)(i): The facility withdraws from riverine systems. Appropriate information is found in Section 2.1 and referenced figures.

The Mississippi River in the vicinity of the CWIS is generally a single channel approximately 0.70 mile wide with several mid-channel islands, including Gosline, Crider, and Pharrs Islands. Upstream and downstream of the CWIS, the Mississippi River channel is braided with relic river channels within the floodplain, forming oxbow lakes and sloughs, many of which are connected via artificial canals for flood control. In the vicinity of the CWIS, the western shoreline is a high bluff with little to no floodplain adjacent to the river. The eastern shoreline across from the CWIS is a broad (approximately 5-mile-wide) floodplain that is predominately farmland and the Great River National Wildlife Refuge.

Buffalo Creek is a small tributary of the Mississippi River that runs adjacent to the south side of the facility. The creek drains a watershed of approximately 45.4 square miles, generally all upstream of the backup CWIS (USGS n.d.). Predominate land uses in the Buffalo Creek watershed are agriculture and natural forest communities. The creek is naturally sinuous along the entire reach with no observable channel modifications. The riparian corridor is generally intact and consists of native forested communities. Near the LOMO facility, Buffalo Creek flows and stages are a function of the Mississippi River because backwater enters Buffalo Creek during higher river stages.

(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) is found in section 2.2. The report only included the Mississippi River. However, the AOI in section 2.4 did include Buffalo Creek. The calculations are found in Appendix B. In an email dated June 5, 2023, the facility clarified that the entirety of the water used at the Buffalo Creek CWIS is backwater from the Mississippi River, and the organisms are the same as found in the Mississippi River proper.

(iii) Locational maps; and
Submission for (r)(2)(iii) are found in section 2.5 and were 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 structures at the 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 section 3.1. The LOMO facility uses entirely closed-cycle cooling, with three cooling towers: the acid cooling tower, the nitric acid concentrator (NAC) cooling tower, and the storage cooling tower. Of the water that is withdrawn at the CWIS, approximately 73 percent is used for closed-cycle cooling, while the remainder is used as process water. A small portion of withdrawals (approximately 2 percent) is provided to Calumet, an external user. Appendices C and D provide pumping information.

(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 3.2.1 for the Mississippi primary water intake, and section 3.2.2 for the Buffalo Creek (backup) intake.

(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 sections 3.2 and 3.3; and Appendix E.

(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 the Figures section of the CWA 316(b) application.

(v) Engineering drawings of the cooling water intake structure.

Submission (r)(3)(v) is found in Appendices C and D.

(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.

(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 4.2.2 and 4.5.

(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 4.6.

(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 4.3 and 4.6.

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)(v) is in section 4.4.

(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 4.7.

(vii) Documentation of any public participation or consultation with Federal or State agencies undertaken in development of the plan;
Submission for (r)(4)(iv) was not required; there was no stated participation.

(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 not applicable as this facility did not perform any studies.

(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) did not occur per section 4.7.

(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 section 4.6.10; 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): is not applicable.

(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 in section 5.

(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
Submission for (r)(5)(ii) is in appendices A and B.

(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 5.2.

(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.

Submission for (r)(6)(i). Not applicable. The Dyno Nobel LOMO facility impingement compliance strategy for both the primary Mississippi River CWIS and the backup Buffalo Creek CWIS is in accordance with Section 125.94 (c)(1) by operating a closed-cycle recirculating system as defined in Section 125.92(c). The Department agrees with this strategy and assigns closed cycle cooling as the Best Available Technology (BAT) for this site.

(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.
Response for (r)(6)(ii): 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 7. The facility has not completed any entrainment studies.

(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 8; no changes are planned.

(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;
Submission (r)(8)(iii) is found in section 8; no changes are planned.

(iv) For all manufacturing facilities, descriptions of current and future production schedules; and
Submission (r)(8)(iv) is found in section 8; no changes are planned.

(v) Descriptions of plans or schedules for any new units planned within the next 5 years.
Submission (r)(8)(v) is found in section 8, no new sources are planned.

Summary
This facility utilizes the CWIS for makeup water for the closed cycle cooling systems at the plant. The BAT for this facility is closed cycle cooling for impingement and entrainment.

***

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.

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.

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, or ancillary wastewater.

✓ Applicable; this facility does not fall under the jurisdiction of the Health Department and discharges domestic wastewater subsurface; see Underground Injection Control (UIC) requirements below and in the permit. This facility discharges domestic wastewater subsurface with flows greater than 3,000 gallons per day as calculated in accordance with 19 CSR 20-3.060(1)(E) and tables 2A and 2B. The domestic wastewater system is jurisdiction of the Missouri Department of Natural Resources. This permit does not authorize any industrial wastewater for introduction into the sub-surface system.

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, biosolids, and septage are removed by contract hauler from the holding tank at intervals as determined by the Underground Injection Control Operations and Maintenance plan condition #4.

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 per 10 CSR 20-7.015(9)(A) and 40 CFR 122.44(b)(1). 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 for continuous discharges per 40 CFR 122.45(d)(1). Weekly limits are not available for non-POTWs.

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 type of activities 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 based effluent limits are more protective of the receiving water's quality, the WQBEL 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 418 (fertilizer manufacturing) Subpart D (ammonium nitrate) and Subpart E (nitric acid); applicable to the wastewater discharge at this site, and is applied under 40 CFR 125.3(a). See Part IV: EFFLUENT LIMITS DETERMINATION.

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

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. 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 (if required for this facility) 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 schedules 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 is not required to monitor groundwater for the water protection program as there are no sub-surface discharges.

ICE-MELT PRODUCT REMOVAL

The Department is authorized to require BMPs for 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 needs to inspect all low-lying areas for extra salt and sand, and remove these as soon as possible. Salt applied to large 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, which is surficial dispersion of wastewater or surficial spreading of sludge can be 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. Sub-surface dispersion or application of wastewater is typically considered a Class V UIC system; See UNDERGROUND INJECTION CONTROL section below.

✓ 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 may 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 256.400 RSMo to register water use annually. 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.

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.

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

✓ Nutrient monitoring is required on a monthly basis per 10 CSR 20-7.015(9)(D)8.B. as a designated major facility and because nutrients are major pollutants of concern at this site. This facility is required to monitor for ammonia, total Kjeldahl nitrogen, nitrate plus nitrite, and phosphorus.

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 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.

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.

REASONABLE POTENTIAL (RP)

Regulations per 10 CSR 20-7.015(9)(A)2 and 40 CFR 122.44(d)(1)(i) require 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 a WQBEL 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, WQBELs 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 20-6.200(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.

WET testing is typically not implemented for stormwater. 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 when performing WET tests.

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. In general, removal of a WQBEL if there is no RP is not considered backsliding, see ANTIBACKSLIDING for additional information.

- ✓ In a meeting on February 17, 2023, the EPA verbally agreed that removal of limits for a parameter with no RP is not considered backsliding.
  - Aluminum at outfall #008 was removed; there is no RP.
  - TSS monitoring at outfall #008 was removed; there is no RP; the facility reported a maximum of 24 mg/L during the last permit term.
  - Outfall #008 Chloride, Sulfate, and Chloride plus Sulfate monitoring was removed, there is no RP.
- ✓ 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. Removal of these narrative criteria is not subject to antibacksliding provisions as there is no RP.

✓ 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 Min	n Max	MF	RWC Acute	RWC Chronic	RP
Ammonia (early life stages+)	mg/L	14.44	3.52	early life	8.6	3.27	2	0.600	1	4	7.4	29.6	29.6	Yes
Chloride	mg/L	860	230	AQL	358	194.87	19	0.494	121	904.7	2.1	1856	1856	Yes
Iron (Fe)	µg/L	n/a	1000	AQL	1503.63	862.42	19	0.440	126	880	1.9	1680	1680	Yes
Lead (Pb)	µg/L	207.3	8.08	AQL	13.28	6.62	1	0.600	0.5	0.5	13.2	6.6	6.6	No
Selenium (Se)	µg/L	n/a	5	AQL	8.21	4.09	1	0.600	0.32	0.32	13.2	4.2	4.2	No
TRC - Warm	µg/L	19	11	AQL	19.0	7.93	57	0.886	0.07	540	2.0	1075	1075	Yes
Outfall #008 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	1.22	early life	87.7	28.32	57	0.766	7	136	1.8	23.3	0.5	Yes
Aluminum (Al)	µg/L	750	n/a	AQL	6516.20	2800.33	19	0.828	55	820	3.0	384.1	173.7	No
Cadmium (Cd)	µg/L	10.63	1.42	AQL	116.92	58.28	1	0.600	6	6	13.2	7.2	0.0	No
Chloride	mg/L	860	230	AQL	9460	3535.08	58	1.172	4	904	2.0	164.4	0.2	No
Chloride + Sulfate	mg/L	1000	n/a	AQL	11000	6733.63	57	0.376	51	540	1.4	68.2	68.2	No
Copper (Cu)	µg/L	27.90	17.44	AQL	306.93	152.99	1	0.600	41	41	4.0	14.9	0.0	No
Sulfate	mg/L	n/a	250.00	DWS	3125913	1822143	57	0.424	32	307	1.4	40.3	0.1	No
Zinc (Zn)	µg/L	223.3	221.49	AQL	2456.31	1224.37	1	0.600	39	39	13.2	46.8	0.1	No
TRC - Warm	µg/L	19	11	AQL	209.0	104.18	1	0.600	250	250	13.2	299.9	0.5	Yes
WET - Acute	TUa	0.3	n/a	AQL	3.3	n/a	9	0.600	1	2.5	3.2	0.7	0.0	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).

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

✓ 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.

✓ The facility may email cleanwaterpermits@dnr.mo.gov to submit the application to the Program. A paper copy is not necessary if submitted via email. For larger applications, a drop-box type service may also be used.

✓ Application materials shall include complete Form A, Form C, and Form D. If the form name has changed, then the facility should ensure they are submitting the correct forms as required by regulation.

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).

A reduction in monitoring frequency is not considered backsliding. A numeric or narrative limit established in the permit is applicable every hour of every day, not only during the day the monitoring occurs, therefore, a reduction in monitoring frequency has no bearing on the numeric limits applied in the permit. Both § 402(o)(1) and the safety clause in § 402(o)(3) prohibit renewed permits from containing effluent limitations that are less stringent. The Department does not read 402(o) to apply to any other non-limiting type of permit conditions.

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 compliance is time allowed to meet future more stringent limitations. The SOC can also be 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 WQBELs in 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 WQBEL(s). See permit Sections A and B for parameters and compliance dates.
- ✓ This permit requires the facility to meet stringent limits for outfall #003; this outfall does not receive mixing. However, the facility may seek alternative options, such as moving the discharge to outfall #008 so they may receive mixing considerations. If the facility decides to move the wastewater to another outfall, an antidegradation review must be conducted and the permit must be modified.
- ✓ On July 13, 2023, the facility requested an extended SOC for chloride at outfall #003. Chlorides are found in the intake water and the facility must understand the interaction of TRC and chlorides to determine a logical path forward. Chlorides are quite difficult to remove in wastewater. The facility has indicated that five years is appropriate for analyzing the facility's current systems and ability to implement treatment for these parameters. All parameters for SOC at outfall #003 are adjusted to the same schedule because changes made for one parameter can affect all of them.

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 holding structure 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; industrial sludge is hauled away at this facility.

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.

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.

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.

✓ The Department requested five metals be retested for outfall #003 using sufficiently sensitive methods. On June 23, 2023, the Department received results for beryllium (<0.15 µg/L); cadmium (<0.16 µg/L); lead (0.50 µg/L); selenium (0.32 µg/L) and thallium (<0.17 µg/L). Selenium and lead were entered into the RPA calculator; neither had RP.

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).

✓ Not applicable; the permittee is subject to an ELG therefore those technology limitations will be used instead of an individual TBEL POC analysis.

✓ The technology implemented at this facility (EDR (Electro Dialysis Reversal)) is ion exchange, and the facility also employs denitrification (nitrogen lagoon). According to the ELG database https://owapps.epa.gov/elg/ this meets the industry standard for 40 CFR 418.43.

UNDERGROUND INJECTION CONTROL (UIC)

Class V wells are sub-surface dispersal or injection of any industrial wastewater; and in certain circumstances, may also be considered a Class V well if it is domestic wastewater. They can also be shallow injection wells like heat pumps and groundwater remediation wells. UIC systems may be described as having "septic tanks" or "lateral lines" in addition to the traditional well type of injection. 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. 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.

- ✓ Applicable; this facility has disclosed sub-surface domestic wastewater system(s) are located at this site and they fall under the Department of Natural Resources jurisdiction. The facility will be subject to special conditions in this permit and standard conditions Part III to impose conditions on the fate of domestic wastewater, sludge, and biosolids from the system(s).

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 Department previously followed the 2007 ammonia guidance method for derivation of ammonia limits. However, 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

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. For the purposes of reporting, the laboratory may supply either the TU value, the LC_{50}, or the NOEC. If the laboratory only supplied the LC_{50} or the NOEC value, the toxic unit is calculated by $100/LC_{50}$ for acute tests, or 100/NOEC for chronic tests. The TU value is entered in the eDMR system. Reports showing no toxicity are usually entered as <1.

- ✓ 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.

PART IV. EFFLUENT LIMIT DETERMINATIONS

OUTFALL #003 – WATER TREATMENT PLANT WASTEWATER

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	WEEKDAYS⁂	MONTHLY	24 HR. TOT
CONVENTIONAL							
CHLORINE, TOTAL RESIDUAL (TRC) ‡	µg/L	*	*	INTERIM	WEEKDAYS⁂	MONTHLY	GRAB
CHLORINE, TOTAL RESIDUAL (TRC) ‡	µg/L	19.0	8.0	FINAL	WEEKDAYS⁂	MONTHLY	GRAB
PH †	SU	6.5 TO 9.0	-	SAME	WEEKDAYS⁂	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	100	50	SAME	ONE/MONTH	MONTHLY	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
IRON, TR	µg/L	1504	862	NEW	ONE/MONTH	MONTHLY	GRAB
NUTRIENTS							
AMMONIA AS N –ALL INTERIM	mg/L	*	*	INTERIM	ONE/MONTH	MONTHLY	GRAB
AMMONIA AS N – JAN, FEB, MAR, OCT, NOV, DEC	mg/L	5.7	1.7	FINAL	ONE/MONTH	MONTHLY	GRAB
AMMONIA AS N – APRIL	mg/L	5.7	1.5	FINAL	ONE/MONTH	MONTHLY	GRAB
AMMONIA AS N – MAY	mg/L	5.7	1.1	FINAL	ONE/MONTH	MONTHLY	GRAB
AMMONIA AS N – JUNE	mg/L	5.7	0.8	FINAL	ONE/MONTH	MONTHLY	GRAB
AMMONIA AS N – JULY, AUGUST	mg/L	5.7	0.7	FINAL	ONE/MONTH	MONTHLY	GRAB
AMMONIA AS N – SEPTEMBER	mg/L	5.7	0.9	FINAL	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
NITROGEN, TOTAL (TN) **	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	CALC
OTHER							
CHLOROFORM	µg/L	*	*	NEW	ONE/YEAR	ANNUALLY	GRAB
CHLORIDE	mg/L	*	*	INTERIM	ONE/MONTH	MONTHLY	GRAB
CHLORIDE	mg/L	358	195	FINAL	ONE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
WET TEST - CHRONIC	TUc	*	-	NEW	ONE/YEAR	ANNUALLY	GRAB

* monitoring and reporting requirement only
⁑ weekly monitoring – see permit
⁂ weekday monitoring – see permit
⁝ DO is a minimum – see permit
** TN is a calculation – see permit
† report the minimum and maximum pH values; pH is not to be averaged
‡ An ML is established for TRC; see permit.
new parameter not established in previous state operating permit
interim parameter requirements prior to end of SOC
final parameter requirements at end of SOC
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow
In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to 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), Previous flow measurements were every weekday; continued; the facility is not required to obtain a measurement on federal holidays. The facility reported from 0.2 to 0.7 MGD in the last permit term. Some of the data in the eDMR system is incorrect; all data reported above "1 MGD" is actually in gallons per minute (gpm).

Temperature
The facility sampled temperature during the last permit term. There is no exogenous sources of temperature at this outfall therefore temperature monitoring is removed. The data reflected appropriate seasonal fluctuations. Monitoring removed.

CONVENTIONAL:

Chlorine, Total Residual (TRC)
The facility reported from non-detect to 540 µg/L in the last permit term. This pollutant has reasonable potential based on the data and type of wastewater. This facility uses bleach to disinfect. There are no technology limits established for this parameter therefore water quality limits are the most protective. The effluent limits are calculated as follows, however, the Department has established an ML for this parameter; the ML is 130 µg/L, see note ‡ in the permit. The facility may need to install a dechlorination system; an SOC is afforded; see SCHEDULE OF COMPLIANCE in Part III for more information. This parameter must be measured on site each weekday to meet the 15 minute holding time.
Acute AQL: 19 µg/L
Chronic AQL: 11 µg/L
LTAa: WLAa * LTAa multiplier = 19 * 0.227 = 4.322 [CV: 0.886, 99th %ile]
LTAc: WLAc * LTAc multiplier = 11 * 0.409 = 4.495 [CV: 0.886, 99th %ile]
use most protective LTA: 4.322
Daily Maximum: MDL = LTA * MDL multiplier = 4.322 * 4.396 = 19 µg/L [CV: 0.886, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 4.322 * 1.834 = 7.928 µg/L [CV: 0.886, 95th %ile, n=4]

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits per 10 CSR 20-7.031(5)(E) are applicable to this outfall because there is no mixing considerations for Buffalo Creek. pH is a fundamental water quality indicator. The facility reported from 6.9 to 9.5 SU; there is reasonable potential for this WQBEL. Section 7.1 of the application supplemental materials indicated that the 4.9 value was inaccurate, and the true value was 7.8 SU and requested this parameter be changed to the TBEL limit of 6.0 to 9.0. Per antibacksliding requirements at 33 USC 1342(o)(1) referring to 33 USC 1313 (d)(4)(B), the WQBEL limit cannot be changed because an antidegradation review was not completed; additionally, this value cannot be changed because the Department must implement the most stringent or protective applicable limit per 40 CFR 122.44(b)(1) and 10 CSR 20-7.015(9)(A).

For pH, 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 must be measured on site weekdays to meet the 15 minute holding time. The last permit also required weekday sampling.

Settleable Solids (SS)
The previous permit required a daily maximum limit of 1.0 mL/L/hr and a monthly average of 1.0 mL/L/hr. There is no numeric water quality standard for SS. The facility reported only 0.5 mL/L/hr in the last permit term which was non-detect therefore this parameter provides no information to the facility nor to the department about their wastewater. This parameter is removed because there is no RP to maintain this as a WQBEL, and because all of the data were non-detect, there is no reason to keep this parameter as a technology limit (TBEL) either as it is ineffective in determining changes in wastewater. See REASONABLE POTENTIAL in Part III of the fact sheet for additional information about WQBELs.

Total Suspended Solids (TSS)
Monitoring with a daily maximum limit of 100 mg/L and a monthly average of 50 mg/L continued from the previous permit, based on a BAT case-by case determination of technology; established and continued pursuant to 10 CSR 20-7.015(8)(I)1 as best professional judgment. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. This limit is also protective of narrative water quality for solids in 10 CSR 20-7.031(4)(A), (4)(B), (4)(C), and (4)(H). Buffalo Creek in this area is characterized by backwater of Mississippi River; therefore Buffalo Creek level is dependent on Mississippi River level. The TSS limit assigned is preventative of settleable solids as well. 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 the discharge 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 from 1 to 70 mg/L in the last permit term. The limit established is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities. This facility has reasonable potential to cause or contribute to these narrative quality criteria, therefore the limits must be maintained for this discharge.

METALS:

Aluminum, Total Recoverable
Aluminum is a probable pollutant of concern at this outfall. Aluminum from entrained solids intake from Buffalo Creek has the potential to be concentrated and discharged from the backwash at levels which could contribute to WQ exceedances. The Mississippi River background levels average about 170 µg/L; the facility has stated that the intake from Buffalo creek is backwater from the Mississippi River. Other similar facilities (water treatment plants) have aluminum as a POC. The EPA has proposed revised WQS for this parameter where total organic carbon (TOC) and pH should be measured concurrently and is used in calculating the site specific limit. However, the Department plans to establish TOC and pH on a regional watershed basis unless the facility supplies site specific information. Therefore, if the facility wishes to sample and submit data for TOC in addition to the aluminum, they may submit the TOC sample results at the next permit renewal.

Iron, Total Recoverable
Previous permit limits were monitoring only; the facility reported between 126 and 880 µg/L in the last permit term. This parameter has RP; see fact sheet Part III, REASONABLE POTENTIAL. Based on the data, the facility is able to meet the new limits as long as the facility maintains historical effluent quality and the facility is required to take a sample monthly; previous sampling requirement was quarterly. This facility uses an iron flocculent in the water treatment plant process. The facility should sample more frequently if needed to meet the monthly average.

Chronic AQL: 1000 µg/L
Acute WLA: Ce = ((1.496 cfsDF + 0 cfsZID) * n/a – (0 cfsZID * 0 background)) / 1.496 cfsDF = n/a
Chronic WLA: Ce = ((1.496 cfsDF + 0 cfsMZ) * 1000 – (0 cfsMZ * 0 background)) / 1.496 cfsDF = 1000
LTAc: WLAc * LTAc multiplier = 1000 * 0.618 = 617.601 [CV: 0.44, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 617.601 * 2.435 = 1503.6 µg/L [CV: 0.44, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 617.601 * 1.396 = 862.4 µg/L [CV: 0.44, 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. The facility reported 4 mg/L in the application, therefore there is reasonable potential. Early life stages are present per 10 CSR 20-7.031(5)(B)7.C & Table B3, and salmonids are absent based on WWH designation of stream; total ammonia nitrogen criteria apply. See Part III – WASTELOAD ALLOCATIONS for more information. The facility supplied the median pH of this outfall in the application as 8.2 SU, therefore the site specific pH value is used instead of ecoregion standards. The facility will need to install treatment to meet these limits; an SOC is afforded. The below limits were calculated on a monthly basis; however, the pH data used was consistent for the whole year, therefore pH was the determining factor. Many months calculated the same result; those were grouped together for brevity.

January, February, March, October, November, December
Acute AQL WQS (CMC): (0.411/(1+10^7.204- pH[8.2]))+(58.4/(1+10^(pH[8.2]-7.204)) = 5.7 mg/L
Chronic AQL WQS (CCC): (0.0577/(1+10^7.688 – pH[8.2]))+(2.487/(1+10^pH[8.2]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[2.8]))) = 1.7 mg/L

April
Acute AQL WQS (CMC): (0.411/(1+10^7.204- pH[8.2]))+(58.4/(1+10^(pH[8.2]-7.204)) = 5.7 mg/L
Chronic AQL WQS (CCC): (0.0577/(1+10^7.688 – pH[8.2]))+(2.487/(1+10^pH[8.2]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[16.1]))) = 1.5 mg/L

May
Acute AQL WQS (CMC): (0.411/(1+10^7.204- pH[8.2]))+(58.4/(1+10^(pH[8.2]-7.204)) = 5.7 mg/L

Chronic AQL WQS (CCC): (0.0577/(1+10^7.688 – pH[8.2]))+(2.487/(1+10^pH[8.2]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[21]))) = 1.1 mg/L

June
Acute AQL WQS (CMC): (0.411/(1+10^7.204- pH[8.2]))+(58.4/(1+10^(pH[8.2]-7.204)) = 5.7 mg/L
Chronic AQL WQS (CCC): (0.0577/(1+10^7.688 – pH[8.2]))+(2.487/(1+10^pH[8.2]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[26]))) = 0.8 mg/L

July, August
Acute AQL WQS (CMC): (0.411/(1+10^7.204- pH[8.2]))+(58.4/(1+10^(pH[8.2]-7.204)) = 5.7 mg/L
Chronic AQL WQS: (0.0577/(1+10^7.688 – pH[8.2]))+(2.487/(1+10^pH[8.2]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[29.4]))) = 0.7 mg/L

September
Acute AQL WQS: (0.411/(1+10^7.204- pH[8.2]))+(58.4/(1+10^(pH[8.2]-7.204)) = 5.7 mg/L
Chronic AQL WQS: (0.0577/(1+10^7.688 – pH[8.2]))+(2.487/(1+10^pH[8.2]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[25.6]))) = 0.9 mg/L

Kjeldahl Nitrogen, Total (TKN)
Nitrogen is present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B.

Nitrate plus Nitrite
Nitrogen is present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B.

Nitrogen, Total (TN)
Submitting total nitrogen data is required. TN is a calculation using TKN + Nitrate + Nitrite. Or alternatively, a sample may be collected and analyzed directly for TN which is a grab sample. Data was collected quarterly over the last permit term where they reported from non-detect to 21 mg/L, however monthly monitoring is now required because nutrients are primary pollutants of concern.

DISINFECTION BY-PRODUCTS (DBP)

This facility uses bleach to disinfect. These four parameters are listed in Missouri's Water Quality Standards for human health protection; these are commonly known as disinfection byproducts and are regulated as such.

Common Name	Listed WQS Name	HHP Standard
Chloroform	Trichloromethane	470 µg/L
Bromoform	Tribromomethane	360 µg/L
Bromodichloromethane	Dichlorobromomethane	46 µg/L
Dibromochloromethane	Chlorodibromomethane	34 µg/L

Human health protection standards apply to all waters, not only waters assigned the drinking water use. Human health includes fish consumption. The facility reported 27.7 µg/L for chloroform in the application for renewal. Given only one parameter in this group was detected, annual monitoring is required for that single, detected, parameter. This requirement is implemented under 10 CSR 20-7.015(8)(I)1 as best professional judgment to determine if limits are necessary to protect human health.

OTHER:

Chloride
The facility shall sample and independently report the analytical value of chloride monthly. The facility reported from 121 to 904.7 mg/L in the last permit term. Given the data, the facility cannot meet the new water quality based effluent limit (WQBEL) therefore an SOC is provided; see Part III SCHEDULE OF COMPLIANCE for more information. One sample per month is required, however, the facility may take additional samples if it is necessary to determine changes in the effluent over time, or to meet the monthly average.
Acute AQL: 860 mg/L
Chronic AQL: 230 mg/L
LTAa: WLAa * LTAa multiplier = 860 * 0.376 = 323.447 [CV: 0.494, 99th %ile]
LTAc: WLAc * LTAc multiplier = 230 * 0.585 = 134.498 [CV: 0.494, 99th %ile]
use most protective LTA: 134.498
Daily Maximum: MDL = LTA * MDL multiplier = 134.498 * 2.659 = 357.6 mg/L [CV: 0.494, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 134.498 * 1.449 = 194.9 mg/L [CV: 0.494, 95th %ile, n=4]

Sulfate
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate.

Chloride Plus Sulfate
The sum of chloride and sulfate will be provided. The facility will sum the samples from the same sampling event, and report the maximum sum. Given the values of chloride reported during the last permit term, this parameter must also be evaluated. Chloride plus sulfate has a separate WQS per 10 CSR 20-7.031(5)(L) and Table A for protection of aquatic life.

Whole Effluent Toxicity (WET) Test, Chronic
Annual 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. Newly identified toxic parameters exist at this outfall. The facility has not obtained a WET test for this outfall; this is a new requirement. 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. The facility will report the TU for each species.

OUTFALL #008 – PROCESS WASTEWATER AND COOLING WASTEWATER; MAIN FACILITY OUTFALL

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL (LIMIT SET T) TEMPERATURE							
FLOW	MGD	*	*	SAME	DAILY	MONTHLY	24 HR. TOT
EFFLUENT FLOW (Q_E)	cfs	*	*	SAME	DAILY	MONTHLY	MEAS.
EFFLUENT TEMPERATURE (T_E)	°F	*	*	SAME	DAILY	MONTHLY	MEAS.
STREAM FLOW (Q_S)	cfs	*	*	SAME	DAILY	MONTHLY	MEAS.
STREAM TEMPERATURE (T_S)	°F	*	*	SAME	DAILY	MONTHLY	MEAS.
ΔT ǂ	°F	5	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} JANUARY ǂǂ	°F	45	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} JANUARY ǂǂ	°F	48	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} FEBRUARY ǂǂ	°F	45	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} FEBRUARY ǂǂ	°F	48	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} MARCH ǂǂ	°F	57	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} MARCH ǂǂ	°F	60	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} APRIL ǂǂ	°F	68	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} APRIL ǂǂ	°F	71	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} MAY ǂǂ	°F	78	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} MAY ǂǂ	°F	81	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} JUNE ǂǂ	°F	86	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} JUNE ǂǂ	°F	89	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} JULY ǂǂ	°F	88	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} JULY ǂǂ	°F	91	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} AUGUST ǂǂ	°F	88	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} AUGUST ǂǂ	°F	91	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} SEPTEMBER ǂǂ	°F	86	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} SEPTEMBER ǂǂ	°F	89	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} OCTOBER ǂǂ	°F	75	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} OCTOBER ǂǂ	°F	78	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} NOVEMBER ǂǂ	°F	65	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} NOVEMBER ǂǂ	°F	68	*	SAME	DAILY	MONTHLY	CALC.
T_{CAP} DECEMBER ǂǂ	°F	52	*	SAME	DAILY	MONTHLY	CALC.
T_{DEV} DECEMBER ǂǂ	°F	55	*	SAME	DAILY	MONTHLY	CALC.
TIME OF DEVIATION-MONTH ǂǂ	hours	*	*	NEW	DAILY	MONTHLY	CALC.
TOTAL TIME OF DEVIATION ǂǂ	hours	87.6	*	SAME	DAILY	YEARLY	CALC.
CONVENTIONAL (LIMIT SET M) MONTHLY							
OIL & GREASE	mg/L	15	10	SAME	WEEKLY ‡	MONTHLY	GRAB
pH †	SU	6.5 TO 9.0	-	SAME	CONTINUOUS	MONTHLY	CONTIN.
pH: INDIVIDUAL EXCURSION TIME †	minute	60	*	SAME	CONTINUOUS	MONTHLY	SUM
pH: TOTAL EXCURSION TIME †	hours	-	7.43	SAME	CONTINUOUS	MONTHLY	SUM
NUTRIENTS (LIMIT SET N)							
AMMONIA AS N – JAN, FEB, MAR	mg/L	128.4	48.9	INTERIM	WEEKLY ‡	MONTHLY	GRAB
AMMONIA AS N – JAN, FEB, MAR	mg/L	87.8	48.9	FINAL	WEEKLY ‡	MONTHLY	GRAB
AMMONIA AS N – APR, MAY, JUN	mg/L	128.4	51.9	INTERIM	WEEKLY ‡	MONTHLY	GRAB
AMMONIA AS N – APR, MAY, JUN	mg/L	87.8	51.9	FINAL	WEEKLY ‡	MONTHLY	GRAB
AMMONIA AS N – JUL, AUG, SEP	mg/L	128.4	51.9	INTERIM	WEEKLY ‡	MONTHLY	GRAB
AMMONIA AS N – JUL, AUG, SEP	mg/L	87.8	51.9	FINAL	WEEKLY ‡	MONTHLY	GRAB
AMMONIA AS N – OCTOBER	mg/L	128.4	48.9	INTERIM	WEEKLY ‡	MONTHLY	GRAB

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
AMMONIA AS N – OCTOBER	mg/L	87.8	48.9	FINAL	WEEKLY ⁑	MONTHLY	GRAB
AMMONIA AS N – NOV, DEC	mg/L	128.4	48.9	INTERIM	WEEKLY ⁑	MONTHLY	GRAB
AMMONIA AS N – NOV, DEC	mg/L	92.5	48.9	FINAL	WEEKLY ⁑	MONTHLY	GRAB
AMMONIA AS N – ALL, ELG	lbs/day	420	158	300.6, 141.3	WEEKLY ⁑	MONTHLY	GRAB
KJELDAHL NITROGEN, TOTAL (TKN)	mg/L	*	*	NEW	ONE/MONTH	MONTHLY	GRAB
NITRATE AS N	mg/L	*	*	SAME	WEEKLY ⁑	MONTHLY	GRAB
NITRATE AS N	lbs/day	587	218	423.4, 138.4	WEEKLY ⁑	MONTHLY	GRAB
NITRITE AS N	mg/L	*	*	QUARTER	ONE/MONTH	MONTHLY	GRAB
NITRATE PLUS NITRITE AS N	mg/L	*	*	QUARTER	ONE/MONTH	MONTHLY	GRAB
NITROGEN, TOTAL (TN) **	mg/L	*	*	QUARTER	ONE/MONTH	MONTHLY	CALC
OTHER (LIMIT SET B – BIANNUAL)							
WET TEST - ACUTE	TUa	3.3	-	SAME	2X/YEAR	BI-ANNUALLY	GRAB

* monitoring and reporting requirement only
⁑ weekly monitoring – see permit
⁂ weekday monitoring – see permit
⁝ DO is a minimum – see permit
** TN is a calculation – see permit
† report the minimum and maximum pH values; pH is not to be averaged
‡ An ML is established for TRC; see permit.
new parameter not established in previous state operating permit
interim parameter requirements prior to end of SOC
final parameter requirements at end of SOC
contin continuous monitoring requirement

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 0.3 to 0.48 MGD in the application. Some of the data input into the eDMR system is in gallons per minute (gpm).

Temperature
The Department considered thermal discharge a pollutant of concern for this facility as is required by the CWA. Previous discharge temperatures exceeded permitted limits. This facility is in Zone 1A. Compliance values have not changed since last permit issuance. This parameter must be measured on site to meet the 15 minute holding time.

Water Quality Limitations:
In accordance with 10 CSR 20-7.031(5)(D)5., water contaminant sources shall not cause or contribute to Mississippi River temperature in excess of the temperatures listed in the effluent limitations table. The facility is located between Lock and Dam No. 25 and Lock and Dam No. 26, therefore the facility is in Zone 1B. Missouri's WQS temperature criteria [10 CSR 20-7.031(5)(D)1. through (5)(D)6.] establish two main areas of compliance for all habitats. The first compliance requirement deals with the change of temperature in degrees Fahrenheit stated as delta temperature (or ΔT). The second compliance requirement deals with the result of a calculation of the receiving stream's temperature not to exceed (T_{dev}) at the edge of the thermal mixing zone.

Meanings of Equations and Variables:
Variables and calculations which may be included in this permit are described as follows. Not all variables will be used in all calculations.

- **Q_e**: effluent flow in cubic feet per second ("ft^3/sec" or cfs)

- **Q_s**: ambient up-stream stream flow in cfs. It is the Department's expectation the permittee will obtain the Q_s data from an appropriate and nearest upstream United States Geological Survey (USGS) or United States Army Corps of Engineers (USACE) gauging stations
- **T_s**: upstream in-stream temperature reported in °F
- **T_e**: the effluent temperature and reported in °F. This is a direct measure of the temperature of the effluent.
- **ΔT**: calculation of the amount of change in temperature, as compared to the upstream temperature, at the edge of the allowed thermal mixing zone
- **T_{emz}**: signifies the equation used to calculate the receiving stream's temperature at the edge of the allowed thermal mixing zone; used to determine compliance with numeric permit limitations
- **T_{cap}** and **T_{dev}**: thermal compliance points for the facility

Missouri's WQS temperature criteria for warm water habitats (WWH) [10 CSR 20-7.031(5)(D)1.] establishes thermal discharges cannot cause a change in the receiving stream's temperature (ΔT) of more than five (5) degrees and a T_{cap} of 90 °F. Missouri's WQS establishes specific T_{cap} values for discharges to the Mississippi River in [10 CSR 20-7.031(5)(D)5.] to which this facility applies. The regulation also establishes a percent, in time, deviation allowance from the established T_{cap} for the Mississippi River as well as a maximum temperature not to exceed (T_{dev}) T_{cap} +3 °F.

Both compliance requirements (ΔT and $T_{cap/dev}$) are to be established at the edge of the thermal mixing zone (designated as T_{emz}). Thermal mixing zones are established on permanent (P) streams or other streams where available. Mixing zone regulations are contained in [10 CSR 20-7.031(5)(D)6.]. Streams with no mixing considerations must meet ΔT and T_{cap} at the end of the pipe. Similar to Missouri's WQS's toxic mixing considerations which use low-flow considerations (i.e. 7Q10), the temperature regulations require the Department 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 is able to consume 100% of the heat energy being discharged. Volume of discharge (for the river and the facility) is measured in cubic feet per second (ft^3/sec, or cfs). Typically discharge is obtained from a nearby upstream United States Geological Survey (USGS) or United States Army Corps of Engineers (USACE) gauging station. 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. Additionally, the Department will only use gauging station data as a viable source of receiving stream flow. Meaning effluent flows 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 Department may also have the permittee subtract other inputs as necessary.

There are no regulatory requirements to determine a monthly average value for temperature as the regulations are written as short-term maximums. However, the Department has determined reporting monthly average for T_{cap} and ΔT to be an important measure of trends.

Compliance Determination with ΔT °F for a Warm Water Habitat:
Missouri's WQS temperature criteria [10 CSR 20-7.031(5)(D)1.] establishes point sources discharging thermal pollution to WWH streams in Missouri shall not raise or lower the temperature of the receiving stream by 5°F. Because this is a WQS, these criteria can be applied at the edge of the thermal mixing zone. In the determination of compliance with the temperature criteria of ΔT, several variables must be obtained as described below. The following calculation determines compliance with the Δ5 °F. If the ΔT is greater than 5 °F, the facility is in non-compliance. All facilities are subject to the ΔT requirement unless there is no upstream available for measuring.

Compliance Determination with Mississippi River Temperature Criteria:
Missouri WQS temperature criteria [10 CSR 20-7.031(5)(D)5.] establishes point sources discharging to the Mississippi River shall not cause or contribute to thermal pollution within the receiving stream. The methodology for the determination of compliance is similar to the T_{cap} for 90 °F established above. The fundamental difference is the variable monthly temperature cap and value to never be exceeded. Thus, the criteria are established per calendar month and per Mississippi River Zone, as follows:

MONTH	**MISSISSIPPI RIVER USGS ZONE TEMPERATURES**			
	ZONE 1A (AREA A) OR ZONE 1B (AREA B)		**ZONE 2 (AREA C)**	
	T_{cap} in °F	*Temperature Deviation* T_{dev} in °F	T_{cap} in °F	*Temperature Deviation* T_{dev} in °F
JANUARY	45	48	50	53
FEBRUARY	45	48	50	53
MARCH	57	60	60	63
APRIL	68	71	70	73
MAY	78	81	80	83
JUNE	86	89	87	90

MONTH	MISSISSIPPI RIVER USGS ZONE TEMPERATURES			
	ZONE 1A (AREA A) OR ZONE 1B (AREA B)		ZONE 2 (AREA C)	
	T_{cap} in °F	*Temperature Deviation* T_{dev} in °F	T_{cap} in °F	*Temperature Deviation* T_{dev} in °F
JULY	88	91	89	92
AUGUST	88	91	89	92
SEPTEMBER	86	89	87	90
OCTOBER	75	78	78	81
NOVEMBER	65	68	70	73
DECEMBER	52	55	57	60

Area A = USGS Zone 1A: Des Moines River to Lock and Dam No. 25.
Area B = USGS Zone 1B: Lock and Dam No. 25 to Lock and Dam No. 26.
Area C = USGS Zone 2: Lock and Dam No. 26 to the Missouri-Arkansas state line.

Compliance Determination with Mississippi River Deviation Allowance Criteria:
Compliance with deviation allowances are a two-step process established at [10 CSR 20-7.031(5)(D)5.]. First, the facility calculates the temperature at the edge of the mixing zone [T_{emz}]. If the calculated temperature is below the T_{cap}, the facility is in compliance. If the calculated temperature has exceeded the T_{cap}, then the T_{dev} limit is reviewed. See above table for temperature deviation allowances. $T_{dev} = T_{cap} + 3$ °F. For example, a facility located in Area C is discharging during the month of January, their T_{cap} limit would be 50 °F and their T_{dev} limit would be 53 °F. The T_{cap} and T_{dev} calculations are identical (T_{emz}), however, the compliance point (permit limit) is different. The T_{dev} is also called a temperature maximum and is never to be exceeded.

Secondly, if the T_{cap} has been exceeded, the facility must then determine the amount of time the T_{cap} was exceeded. Regardless if the T_{dev} is being exceeded or not, the time (in hours) of T_{cap} exceedance is still reported. The time deviation allowance, based on the USGS Zone, provides a specific aggregate of hours per year a facility can exceed their monthly T_{cap} limit. The site-specific criteria for the Mississippi River allows the permittee to exceed their applicable criteria either 1% of the year for Zone 1A and 2A; and 5% of the year for Zone 1B. It has been determined this percent exceedances allowance should be tracked in hours for a calendar year.

	MISSISSIPPI RIVER USGS ZONES		
	ZONE 1A (AREA A)	ZONE 1B (AREA B)	ZONE 2 (AREA C)
PERCENTAGE EXCEEDANCE ALLOWED	1%	5%	1%
TEMPORAL EXCEEDANCE ALLOWED	[(365)(24)(0.01)] = 87.6 hours (87 hours and 36 minutes)	[(365)(24)(0.05)] = 438 hours 0 Minutes	[(365)(24)(0.01)] = 87.6 hours (87 hours and 36 minutes)

Tracking of time used for percent time deviation allowance, can be captured and tracked via an effluent limit in MoCWIS. Any time a facility exceeds T_{cap} the time deviation allowance "clock" is running. For every episode the permittee uses their available time, the operating permit requires the permittee submit the time with their discharge monitoring report (DMR) to state they exceeded their T_{cap}. Compliance is based on the temporal allowance each year.

- $\Delta T = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e)] - T_s$
  - ΔT the change in temperature in °F at the edge of the thermal mixing zone
  - $Q_s/4$ the receiving stream flow in cfs divided by 4
  - Q_e effluent flow in cfs
  - T_s measured stream temperature
  - T_e measured temperature of effluent

- To calculate the temperature of the stream at the edge of the mixing zone, the facility will use the following equation: Designated as T_{emz} in the equation below, the facility can determine compliance with T_{dev}, T_{cap}, and percent time deviation allowance.
  $T_{emz} = [((Q_s/4)T_s + Q_eT_e) / ((Q_s/4) + Q_e))]$
  - T_{emz} the temperature of the receiving stream at the edge of the thermal mixing zone
  - $Q_s/4$ the receiving stream flow in cfs divided by 4
  - Q_e effluent flow in cfs
  - T_s measured stream temperature
  - T_e measured temperature of effluent

Temperature cap (T_{cap}) is the effluent temperature in the receiving stream at the edge of the thermal mixing zone. It may be exceeded for no more than 87.6 hours (87 hours and 36 minutes).

Temperature deviation (T_{dev}) is the maximum effluent temperature limit applicable in the receiving stream at the edge of the thermal mixing zone which may never be exceeded. MoCWIS is set up to receive one value for the thermal limitations for each month. The facility will violate the thermal limit if the value entered in MoCWIS is above the T_{dev} value for the month.

Percent Time Deviation Allowance: Missouri's Water Quality Standards allows permittees to exceed their applicable T_{cap} criteria (but not the T_{dev} criteria). The time of deviation allowance shall be tracked in hours per year <u>any</u> time their calculated temperature values exceed a specific month's daily maximum T_{cap} effluent limit. The permittee is required to monitor and report the total monthly exceedance time.

a) If T_{emz} is less than T_{cap} then the permittee records "0" hours deviation.
b) Any time T_{emz} is above T_{cap} then the facility reports the number of hours of deviation.
c) The permittee shall report each month and on January 28th for each calendar year the total number of hours the facility exceeded their temperature cap effluent limits; compliance is based on exceedances for the entire year.

A violation occurs if either:

a) The percent time deviation allowance is above 87.6 hours (87 hours and 36 minutes) for the calendar year; and/or
b) The T_{emz} value reported is above the T_{dev} limitation.

Adding Temperature Data into the eDMR System:
Te: The facility will enter the outfall temperature (without mixing) to parameter numbers 72047 (temperature, summer) and 72048 (temperature, winter), respectively for the seasons.
Ts: 52240 (temperature, background) is the stream temperature as measured
Tdev: the maximum temperature, with mixing, identified for each month is parameter 00011; location is "calculated"
ΔT is parameter 03772, calculated, with mixing

CONVENTIONAL:

<u>Oil & Grease</u>
15 mg/L daily maximum; 10 mg/L monthly average; weekly monitoring continued from previous permit using RPD. The facility reported from non-detect to 14 mg/L in the last permit term. In the application for renewal Part 7.3, the consultant asked to have this parameter removed; however, data do not support removal of this parameter because there were detections of this parameter; and the detections were above the monthly average value. 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 data. 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.
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

<u>pH</u>
6.5 to 9.0 SU*****. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units; technology limits less protective; limits continued from previous permit. Continuous sampling; monthly reporting. Compliance is based on excursion time, not actual pH limitations as the assimilative capacity of the receiving waterbody can absorb excursions of pH. The facility reported from 2.7 to 8.6 SU in the last permit term; this parameter has RP based on the data. Per antibacksliding requirements 33 USC 1313 (d)(4)(B), the WQBEL limit can not be changed because an antidegradation review was not completed. This parameter must be measured on site to meet the 15 minute holding time.

*When sampling continuously, 40 CFR 401.17 allows the facility to exceed permitted effluent limitations 7 hours and 26 minutes (equals 7.43 hours) in any one calendar month and no individual excursion shall last longer than 60 minutes when using continuous monitoring. Limits continued from previous permit. Continuous sampling required, monthly reporting.

NUTRIENTS:

Ammonia, Total as Nitrogen

Weekly sampling continued from the previous permit.

Water Quality Requirements

Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. Additionally, ammonia is a primary pollutant of concern at this type of facility. The facility supplied the median pH in the application of 8.0 SU. Early life stages are present [10 CSR 20-7.031(5)(B)7.C & Table B3], and salmonids are absent based on WWH designation of stream; total ammonia nitrogen criteria apply. Background data was obtained for the Mississippi River and was accounted for in the calculations. See Part III – WASTELOAD ALLOCATIONS for more information.

Previous permit limits were 128.4 daily maximum for the whole year, 51.9 mg/L summer monthly average, and 48.9 winter monthly average; given the pH of this facility has a consistent median of 8.0 SU, 8.0 SU is used for all equations (7.8 was used in the last permit term). New calculations based on the revised ammonia derivation memo, indicate that ammonia should be derived monthly, and by utilizing the WQS+ mixing, instead of considering the variability of the effluent. Because these new methods do not consider wasteload allocations, or multipliers, the WLA is calculated as follows. Where the WLAc is greater than the WLAa, the WLAa shall be used for daily and monthly requirements.

January through October

Acute AQL WQS (CMC): (0.411/(1+10^7.204- pH[8]))+(58.4/(1+10^(pH[8]-7.204)) = 8.4 mg/L
Chronic AQL WQS (CCC): (0.0577/(1+10^7.688 – pH[8]))+(2.487/(1+10^pH[8]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[2.8]))) = 2.4 mg/L
Acute WLA: ((0.774 cfsDF + 7.736 cfs1Q10ZID) * 8.4 CMC – (7.736 cfs1Q10ZID * 0.46991 bkg)) / 0.7736143 cfsDF = **87.8 mg/L**
Chronic WLA: ((0.774 cfsDF + 6502.25 cfs30Q10MZ) * 2.362 CCC – (6502.25 cfs30Q10MZ * 0.46991 bkg)) / 0.774 cfsDF = 15903.9 mg/L

November and December

Acute AQL WQS: (0.411/(1+10^7.204- pH[8]))+(58.4/(1+10^(pH[8]-7.204)) = 8.4 mg/L
Chronic AQL WQS: (0.0577/(1+10^7.688 – pH[8]))+(2.487/(1+10^pH[8]-7.688))*MIN(2.85,(1.45*10^0.028*(25-temp[12]))) = 2.4 mg/L
Acute WLA: ((0.774 cfsDF + 7.736 cfs1Q10ZID) * 8.4 CMC – (7.736 cfs1Q10ZID * 0.46991 bkg)) / 0.7736143 cfsDF = **92.5 mg/L**
Chronic WLA: ((0.774 cfsDF + 6502.25 cfs30Q10MZ) * 2.362 CCC – (6502.25 cfs30Q10MZ * 0.46991 bkg)) / 0.774 cfsDF = 15903.9 mg/L

Each month was calculated independently; however, many months had the same result. The daily maximum values for the respective months calculated above will be implemented in the permit in place of the previous (all year) daily maximum of 128.4 mg/L. The Department must implement the most stringent or protective applicable limit per 40 CFR 122.44(b)(1) and 10 CSR 20-7.015(9)(A)

Noting that the chronic value is above the acute value, the chronic value cannot be implemented into the permit. In these situations where the calculation for the chronic value is greater than the acute value, the acute value is typically substituted instead. Additionally, the facility did not request an antidegradation review to backslide, therefore backsliding is not permissible under 33 USC 1313 (d)(4)(B) for the chronic values. The chronic values from the last permit will be retained. Additionally, the ELG limits were considered; the minimum chronic limit is 63.0 mg/L (TBEL). Per antibackskiding requirements at 33 USC 1342(o)(1) referring to 33 USC 1313 (d)(4)(B), the WQBEL limit cannot be changed because an antidegradation review was not completed; additionally, this value cannot be changed because the Department must implement the most stringent limit per 40 CFR 122.44(b)(1) and most protective limit per 10 CSR 20-7.015(9)(A).

	Old Acute	Old Chronic	New Acute	New Chronic
January – March	128.4 mg/L	48.9 mg/L	87.8 mg/L	48.9 mg/L
April –June	128.4 mg/L	51.9 mg/L	87.8 mg/L	51.9 mg/L
July - September	128.4 mg/L	51.9 mg/L	87.8 mg/L	51.9 mg/L
October	128.4 mg/L	48.9 mg/L	87.8 mg/L	48.9 mg/L
November - December	128.4 mg/L	48.9 mg/L	92.5 mg/L	48.9 mg/L

The facility reported from 7 to 136 mg/L in the last permit term. The facility will need to provide an upgrade or will need to implement operational controls to the treatment system to meet new effluent limits therefore an SOC is provided; see Part III, Schedule of Compliance for more information. The facility should also expect lower effluent limits in the next permit because the Department is seeking to promulgate ammonia requirements to protect mussels.

Technology-Based Effluent Limit (TBEL) Requirements

The applicant provided updated manufacturing values; the increased manufacturing values led to an increase in TBEL limits in lbs/day. Because this facility is also regulated under Missouri Clean Water Law for this parameter a water quality limit in mg/L is also supplied. The facility identified 0.3 MGD as the flow for categorical wastewater.

	Manufacturing ELG		Pounds	ELG multiplier	ELG Limits pounds per day				ELG Limits Concentration mg/L	
	418	418	fertilizer	Pounds	Permit	Permit	Flow		Compare	Compare
	Daily	Monthly	Manufactured	per 1000#	Daily Limit	Monthly Limit	MGD	Multiplier	Daily Limit	Monthly Limit
ammonium nitrate	0.08	0.04	2,574,099	0.001	206	103	0.3	0.1199041	82.31	41.15
nitric acid	0.08	0.008	1,636,830	0.001	131	13	0.3	0.1199041	52.34	5.23
air equip	0.08	0.04	1,037,000	0.001	83	41	0.3	0.1199041	33.16	16.58
Total					**420**	**158**	0.3	0.1199041	167.80	62.97

The multiplier is 1/8.34; this is back-calculating the inverse of a pound of one US gallon of water.

Discharges containing nutrients from emissions control devices were submitted to the Department with the application materials and incorporated herein. The nitrogen loss from PM 2.5 and PM 10 air emissions wet scrubbers indicated these were assumed to be 100% nitrate. Total losses to the pollution control equipment were calculated by the facility and submitted under the permit renewal as 1037 pounds daily loss. The permit writer then used the standard multiplier from Part 418.43.

Less stringent limits for ELGs (technology) are permissible under the backsliding regulations found at 40 CFR 122.44(l)(1) because the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification; changes have occurred in the manufacturing process.

Kjeldahl Nitrogen, Total (TKN)
Nitrogen present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(8)(I)1 best professional judgment and per 10 CSR 20-7.015(9)(D)8.B. Previous permit did not require monitoring of TKN.

Nitrate
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. The previous permit required quarterly monitoring in mg/L and monthly monitoring for lbs/day. This permit has all nitrogen species at the monthly frequency. The facility reported from 21 to 215 mg/L; and 51 to 227 lbs/day in the last permit term. The facility identified 0.3 MGD as the flow for categorical wastewater.

	Manufacturing ELG		Pounds	ELG multiplier	ELG Limits pounds per day				ELG Limits Concentration mg/L	
			Dynamite	Pounds	Permit	Permit	Flow		Compare	Compare
	Daily	Monthly	Manufactured	per 1000#	Daily Limit	Monthly Limit	MGD	Multiplier	Daily Limit	Monthly Limit
ammonium nitrate	0.12	0.07	2,574,099	0.001	309	180	0.3	0.1199041	123.46	72.02
nitric acid	0.17	0.023	1,636,830	0.001	278	38	0.3	0.1199041	111.22	15.05
total					**587**	**218**	0.3	0.1199041	234.67	87.06

The multiplier is 1/8.34; this is back-calculating the inverse of a pound of one US gallon of water.

The applicant provided updated manufacturing values; the increased manufacturing values led to an increase in TBEL limits in lbs/day. Previous ELG Limits were 423.4 lbs/day daily maximum and 138.4 lbs/day monthly average.

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. The previous permit required a sum of nitrate plus nitrite as a quarterly requirement.

Nitrate plus Nitrite
The facility will sum the nitrate and nitrite values and report the sum monthly. Previous permit was quarterly, however, nitrogen is the primary pollutant of concern at this facility therefore more frequent sampling is warranted.

Nitrogen, Total (TN)
This permit continues reporting for total nitrogen, which is a calculation using TKN + Nitrate + Nitrite. Data was collected quarterly over the last permit term where they reported from 17 to 154 mg/L, however monthly monitoring is now required because nutrients are primary pollutants of concern.

OTHER:

Whole Effluent Toxicity (WET) Test, Acute

The facility reported Pimephales from 1 to 2.5 TUa; and Ceriodaphnia from 1 to 1.6 TUa in the last permit term. Using RPD and numeric data, there is reasonable potential to cause or contribute to toxicity in the receiving stream based on the factors listed in Part III, REASONABLE POTENTIAL, and WHOLE EFFLUENT TOXICITY (WET) TEST. The previous permit limits were 3.3 TUa in the last permit; continued. The acute test is more stringent in this instance because it tests a larger percentage of the effluent.

Pimephales is the more sensitive species for this site; the fish are more sensitive to ammonia than Ceriodaphnia. This table provides the latest two years of results of the eight tests conducted during the last permit term. The lower the LC50, the higher the toxicity. All of the data was used to determine RP.

Date	Ammonia in mg/L	DO in mg/L	pH in SU	LC50 as % effluent Pimephales	TUa Pimephales	LC50 as % effluent Ceriodaphnia	TUa Ceriodaphnia
2021-04-20	18	8.4	7.3	32.85	2.5	81.9	1.221
2021-08-31	4.7	7.9	8.0	>100	<1	>100	<1
2022-01-21	25	7.2	8.2	54.6	1.9	>100	<1
2022-08-23	13	7.2	8.2	53.16	1.9	>100	<1

For classified streams with mixing considerations, the Allowable Effluent Concentration (AEC)% is Acute AEC% = [0.465 DF_{cfs} ÷ (4.65 ZID_{7Q10} + 0.465 DF_{cfs})] x 100% = 9.1%. The dilution series is: 81.9%, 27.3%, 9.1%, 3.0%, and 1.0%. These are retained from the previous permit.

Acute AQL: 0.3 TUa
Acute WLA: Ce = ((0.464 CFSdf + 5612.25 cfsZID) * 0.3 – (5612.25 cfsZID * 0 background)) / 0.464 CFSdf = 3.3
LTAa: WLAa * LTAa multiplier = 3.3 * 0.321 = 1.06 [CV: 0.6, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 1.06 * 3.114 = 3.3 TU [CV: 0.6, 99th %ile]

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.

- ✓ Industrial permits are not being synchronized.

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 draft 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 September 29, 2023 and ended October 30, 2023.
- ✓ A commenter noted that settleable solids still appeared in outfall #003 fact sheet table; this was removed.
- ✓ The EPA noted that the 40 CFR 122.21(r) requirement should be resubmitted with each permit renewal. In response, the Department added a requirement that “The facility must re-submit the 2023 application for the 40 CFR 122.21(r) studies with the next renewal. if any part of the information has changed, the information must be updated.”
- ✓ No other comments were received.

DATE OF FACT SHEET: OCTOBER 31, 2023

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

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.

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
JET PAY CONFIRMATION NUMBER	

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

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

1. REASON FOR APPLICATION:

☑ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – 0105783, 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	
Dyno Nobel - LOMO Plant		573-754-4501	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
11025 Highway D	Louisiana	MO	63353

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
Dyno Nobel Inc.		80-732-7534	
EMAIL ADDRESS			
matt.graves@am.dynonobel.com			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
6440 South Millrock Drive	Cottonwood Heights	UT	84121

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
same as owner			
EMAIL ADDRESS			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

5. OPERATOR CERTIFICATION

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE	
Dyno Nobel Inc. - LOMO Plant	N/A	573-754-4501	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
11025 Highway D	Louisiana	MO	63353

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
Valerie Greeve	Environmental Manager	573-754-4501
E-MAIL ADDRESS		
valerie.greeve@am.dynonobel.com		

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

NAME			
See Attachment A			
ADDRESS	CITY	STATE	ZIP CODE

8. ADDITIONAL FACILITY INFORMATION

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

001 _____¼ _____¼ Sec _____ T _____ R _____ _____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____
See Attachment B

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

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

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

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

8.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
Primary SIC 2873 and NAICS 325311 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. Dyno generates small amounts of industrial sludge and domestic sludge, all of which are cleaned out shipped off-site at various frequencies. Thus, Form R is not applicable.

E. Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority? YES ☑ NO ☐
If yes, please include a list of all permits or approvals for this facility:
Environmental Permits for this facility: CAA permit from MDNR: OP2019-029

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, Buffalo Creek

G. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale. See Figures 1, 2, and 3

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

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

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

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

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

11. FEES

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

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

12. CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Sam Correnti, Site Manager - LOMO Site	573-754-4501
SIGNATURE Samuel J. Correnti Jr.	DATE SIGNED 20 JAN 2023

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

Dyno Nobel - LOMO Plant

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

MO-0105783

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.

The Dyno LOMO Plant manfuactures various concentrations of nitric acid, ammonium nitrate liquor, and ammonium nitrate prill. Process wastewater discharged from Outfall 008 (and eventually through Outfall 001) is subject to 40 CFR 418, the fertilizer manufacturing ELG.

See Attachment C for additional details.

FLOWS, TYPE, AND FREQUENCY

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

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

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW; INCLUDE ALL PROCESSES AND SUB PROCESSES AT EACH OUTFALL	3. AVERAGE FLOW AND (MAXIMUM FLOW), INCLUDE UNITS.	4. TREATMENT DESCRIPTION	5. TREATMENT CODES FROM TABLE A
003	sand filter backwashing	0.3 MGD(0.35 MGD)	lagoon settling	1U
008/001	stormwater	15 GPM	lagoon (Nitrogen Lagoon)	1U
008/001	condensate from part of storage and prill areas	15 GPM	weirbox settling/grit removal	1U/1M
008/001	cooling tower blowdown	61 GPM	weirbox settling/grit removal	1U/1M
	(Acid Plant CT, NAC Plant CT, Storage Area CT)			
008/001	boiler blowdown	10 GPM	weirbox settling/grit removal	1U/1M
	(225# WHB, 75# WHB)			
008/001	Electro dialysis reversal (EDR) unit	20 GPM	weirbox settling/grit removal	1U/1M
008/001	AN neutralizer condensate (flows into EDR)	70 GPM	weirbox settling/grit removal	
008/001	Weak Acid Plant/WNA product (flows into EDR)	55 GPM	weirbox settling/grit removal	
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 avarage)*	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 418 Subpart(s) D, E ☐ 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)*
008	2,574,099	lbs/day	ammonium nitrate production (previous 12-month total of 469,773 tons)
008	1,636,830	lbs/day	nitric acid production (previous 12-month total of 298,721 tons)
			See Attachment D for propsed production-based effluent limits

2.4 IMPROVEMENTS

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

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

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

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

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.

Sludge generation is minimal. Infrequently, various tanks and equipment are cleaned out during maintenance. Sludge is collected and shipped off site by the third-party vendor EnviroServe. Dyno has also used Clean Harbors in the past. Gravel, dirt, and debris from stormwater drainage/storm sewer are removed and stormwater BMPs clean/maintained every six months. Mud is removed from the backwash lagoon every two years. Materials from the storm sewer cleaning and the backwash lagoon are kept on site. Domestic sludge is cleaned out of the acid office septic tank and shipped off site weekly by Ted Brown's Hauling and Backhoe. Due to the nature of the sludge removal activities, Form R is not relevant and not necessary for this permit renewal application.

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)
n/a - no section 3.0 C, Table	B parameters present in the	discharges	
See Attachment E, Attachment F, and	Attachment G for discharge monitoring data of Outfall 003 and	Outfall 008.	

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.

WET testing has not been performed on discharges from Outfall 003. Semi-annual acute WET testing has been conducted in accordance with the permit. Pace Analytical Services performs the WET testing. Results of acute WET testing since the August 1, 2018 have been below the permitted limit of 3.3 TUa.

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, LLC	2231 W. Altorfer Drive, Peoria, IL 61615	800-752-6651	acute WET, ammonia, aluminum, iron, BOD, TSS, some metals

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	7.9 acres	gravel, vegetated, lagoon	Applies to both drainage areas: good housekeeping, reducing exposure,
008	45.1 acres	gravel, veg., lagoon, buildings	erosion/sediment control, maintenance of stormwater inlets/catch basins/
			ditches/oil water separator/lagoons, vehicle and equipment maintenance,
			employee SWPPP training, spill prevention and response

4.2 STORMWATER FLOWS
Provide the date of sampling with the flows, and how the flows were estimated.
Not applicable, all stormwater is captured in the filter backwash lagoon or nitrogen lagoon (no stormwater-only outfalls).

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
Sam Correnti, Site Manager - LOMO Site	573-754-4501
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
Samuel J Correnti	23 JAN 2023

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: 003, treated filter backwash from intake water treatment plant — 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)	ND (< 10.0)	ND (< 83)					1	mg/L	lbs/day
B. Chemical Oxygen Demand (COD)	ND (< 50)	ND (< 417)					1	mg/L	lbs/day
C. Total Organic Carbon (TOC)	4.2	35					1	mg/L	lbs/day
D. Total Suspended Solids (TSS)	105	876	105	604	20.53	71	49	mg/L	lbs/day
E. Ammonia as N	4	33	4	23	0.99	3.5	16	mg/L	lbs/day
F. Flow	VALUE 1		VALUE 0.69		VALUE 0.42		49	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE 80		VALUE 80		VALUE 47.63		24	°F	
H. Temperature *(summer)*	VALUE 93		VALUE 86		VALUE 72.44		25	°F	
I. pH	MINIMUM 6.90		MAXIMUM 9.60		AVERAGE Median = 8.20		98	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		904.70	7,545	904.70	5,206	400.83	1,390	16	mg/L	lbs/day
D. Chlorine, Total Residual	X		250	2.09	250	1.44	83.47	0.29	16	mg/L	lbs/day
E. Color		X									
F. Conductivity		X									
F. Cyanide, Amenable to Chlorination		X	ND (< 0.0050)	ND (< 0.04)					1	mg/L	lbs/day

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. VALUES							4. UNITS	
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS
			CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS			
Subpart 1 – Conventional and Non-Conventional Pollutants (Continued)											
G. *E. coli*		X									
H. Fluoride (16984-48-8)		X									
I. Nitrate plus Nitrate *(as N)*		X									
J. Kjeldahl, Total (as N)		X									
K. Nitrogen, Total Organic *(as N)*		X									
L. Oil and Grease		X									
M. Phenols, Total		X	ND (< 0.050)	ND (< 0.42)	ND (< 0.050)	ND (< 0.29)	ND (< 0.030)	ND (< 0.11)	2	mg/L	lbs/day
N. Phosphorus *(as P)*, Total (7723-14-0)		X									
O. Sulfate *(as SO^4)* (14808-79-8)		X									
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									
2M. Antimony, Total Recoverable (7440-36-9)		X	ND (< 0.0500)	ND (< 0.42)					1	mg/L	lbs/day
3M. Arsenic, Total Recoverable (7440-38-2)		X	ND (< 0.0500)	ND (< 0.42)					1	mg/L	lbs/day
4M. Barium, Total Recoverable (7440-39-3)		X									
5M. Beryllium, Total Recoverable (7440-41-7)		X	ND (< 0.0050)	ND (< 0.04)					1	mg/L	lbs/day
6M. Boron, Total Recoverable (7440-42-8)		X									
7M. Cadmium, Total Recoverable (7440-43-9)		X	ND (< 0.0050)	ND (< 0.04)					1	mg/L	lbs/day
8M. Chromium III Total Recoverable (16065-83-1)		X	ND (< 0.0050)	ND (< 0.04)					1	mg/L	lbs/day
9M. Chromium VI, Dissolved (18540-29-9)		X	ND (< 0.0050)	ND (< 0.04)	ND (< 0.0050)	ND (< 0.03)	ND (< 0.003)	ND (<0.009)	2	mg/L	lbs/day
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	ND (< 0.0050)	ND (< 0.04)					1	mg/L	lbs/day
12M. Iron, Total Recoverable (7439-89-6)	X		880	7.34	880	5.06	487.13	1.69	16	ug/L	lbs/day
13M. Lead, Total Recoverable (7439-92-1)		X	ND (< 0.0400)	ND (< 0.33)					1	mg/L	lbs/day
14M. Magnesium, Total Recoverable (7439-95-4)	X		25.4	212					1	mg/L	lbs/day
15M. Manganese, Total Recoverable (7439-96-5)	X		0.0198	0.17					1	mg/L	lbs/day
16M. Mercury, Total Recoverable (7439-97-6)		X	ND (< 0.0002)	ND (< 0.002)					1	mg/L	lbs/day
17M. Methylmercury (22967926)		X									
18M. Molybdenum, Total Recoverable (7439-98-7)		X	ND (< 0.0120)	ND (< 0.10)					1	mg/L	lbs/day
19M. Nickel, Total Recoverable (7440-02-0)		X	ND (< 0.0100)	ND (< 0.08)					1	mg/L	lbs/day
20M. Selenium, Total Recoverable (7782-49-2)		X	ND (< 0.0400)	ND (< 0.33)					1	mg/L	lbs/day
21M. Silver, Total Recoverable (7440-22-4)		X	ND (< 0.0050)	ND (< 0.04)					1	mg/L	lbs/day
22M. Thallium, Total Recoverable (7440-28-0)		X	ND (< 0.0400)	ND (< 0.33)					1	mg/L	lbs/day
23M. Tin, Total Recoverable (7440-31-5)		X	ND (< 0.0250)	ND (< 0.21)					1	mg/L	lbs/day
24M. Titanium, Total Recoverable (7440-32-6)		X	ND (< 0.0250)	ND (< 0.21)					1	mg/L	lbs/day
25M. Zinc, Total Recoverable (7440-66-6)		X	ND (< 0.0100)	ND (< 0.08)					1	mg/L	lbs/day
Subpart 3 – Radioactivity											
1R. Alpha Total		X									
2R. Beta Total		X									
3R. Radium Total		X									
4R. Radium 226 plus 228 Total		X									

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: 008, industrial process wastewater — 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)	ND (<10.0)	ND (<48)					1	mg/L	lbs/day
B. Chemical Oxygen Demand (COD)	ND (<50)	ND (<242)					1	mg/L	lbs/day
C. Total Organic Carbon (TOC)	11	53					1	mg/L	lbs/day
D. Total Suspended Solids (TSS)	24	116	24	82	7.5	19.5	49	mg/L	lbs/day
E. Ammonia as N	136	658	52.5	180	22.5	58	49	mg/L	lbs/day
F. Flow	VALUE 0.58		VALUE 0.41		VALUE 0.31		98	MILLIONS OF GALLONS PER DAY (MGD)	
G. Temperature *(winter)*	VALUE 73		VALUE 66		VALUE 41		24	°F	
H. Temperature *(summer)*	VALUE 108		VALUE 104		VALUE 74		25	°F	
I. pH	MINIMUM 2.7		MAXIMUM 10		AVERAGE Median = 8.0		98	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		254	1,229	254	871	85	219	49	mg/L	lbs/day
D. Chlorine, Total Residual		X									
E. Color		X									
F. Conductivity		X									
F. Cyanide, Amenable to Chlorination		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. CONCENTRATION	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									
I. Nitrate plus Nitrate *(as N)*	X		110	532	110	377	38.5	100	16	mg/L	lbs/day
J. Kjeldahl, Total (as N)		X									
K. Nitrogen, Total Organic *(as N)*		X									
L. Oil and Grease	X		14	68	3.91	13.4	1.14	2.9	49	mg/L	lbs/day
M. Phenols, Total		X	ND (<0.050)	ND (<0.24)	ND (<0.050)	ND (<0.17)	ND (<0.030)	ND (<0.08)	2	mg/L	lbs/day
N. Phosphorus *(as P)*, Total (7723-14-0)		X									
O. Sulfate *(as SO^4)* (14808-79-8)	X		307	1,485	307	1,052	152	394	49	mg/L	lbs/day
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		820	4	820	3	273	0.7	16	ug/L	lbs/day
2M. Antimony, Total Recoverable (7440-36-9)		X	ND (<0.050)	ND (<0.24)					1	mg/L	lbs/day
3M. Arsenic, Total Recoverable (7440-38-2)		X	ND (<0.050)	ND (<0.24)					1	mg/L	lbs/day
4M. Barium, Total Recoverable (7440-39-3)		X									
5M. Beryllium, Total Recoverable (7440-41-7)		X	ND (<0.0050)	ND (<0.02)					1	mg/L	lbs/day
6M. Boron, Total Recoverable (7440-42-8)		X									
7M. Cadmium, Total Recoverable (7440-43-9)		X	ND (<0.0050)	ND (<0.02)					1	mg/L	lbs/day
8M. Chromium III Total Recoverable (16065-83-1)		X	ND (<0.0050)	ND (<0.02)					1	mg/L	lbs/day
9M. Chromium VI, Dissolved (18540-29-9)	X		0.0012	0.01	0.0012	0.004	0.0031	0.01	2	mg/L	lbs/day
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		0.04	0.20					1	mg/L	lbs/day
12M. Iron, Total Recoverable (7439-89-6)		X									
13M. Lead, Total Recoverable (7439-92-1)		X	ND (<0.04)	ND (<0.19)					1	mg/L	lbs/day
14M. Magnesium, Total Recoverable (7439-95-4)	X		29.6	143					1	mg/L	lbs/day
15M. Manganese, Total Recoverable (7439-96-5)	X		0.027	0.13					1	mg/L	lbs/day
16M. Mercury, Total Recoverable (7439-97-6)		X	ND (<0.0002)	ND (<0.001)					1	mg/L	lbs/day
17M. Methylmercury (22967926)		X									
18M. Molybdenum, Total Recoverable (7439-98-7)	X		0.015	0.07					1	mg/L	lbs/day
19M. Nickel, Total Recoverable (7440-02-0)		X	ND (<0.01)	ND (<0.05)					1	mg/L	lbs/day
20M. Selenium, Total Recoverable (7782-49-2)		X	ND (<0.04)	ND (<0.19)					1	mg/L	lbs/day
21M. Silver, Total Recoverable (7440-22-4)		X	ND (<0.005)	ND (<0.02)					1	mg/L	lbs/day
22M. Thallium, Total Recoverable (7440-28-0)		X	ND (<0.04)	ND (<0.19)					1	mg/L	lbs/day
23M. Tin, Total Recoverable (7440-31-5)		X	ND (<0.025)	ND (<0.12)					1	mg/L	lbs/day
24M. Titanium, Total Recoverable (7440-32-6)		X	ND (<0.025)	ND (<0.12)					1	mg/L	lbs/day
25M. Zinc, Total Recoverable (7440-66-6)	X		0.039	0.19					1	mg/L	lbs/day
Subpart 3 – Radioactivity											
1R. Alpha Total		X									
2R. Beta Total		X									
3R. Radium Total		X									
4R. Radium 226 plus 228 Total		X									

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
Dyno Nobel - LOMO Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER
MO - 0105783

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-0105783	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. 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	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)		☐	☑	ND (< 0.050)	<0.42					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		☐	☑	ND (< 0.050)	<0.42					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		☐	☑	ND (<0.005)	<0.04					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		☐	☑	ND (<0.005)	<0.04					1	mg/L	lbs/day			
5M. Chromium III (16065-83-1)	—	☐	☑	ND (<0.005)	<0.04					1	mg/L	lbs/day			
6M. Chromium VI (18540-29-9)	—	☐	☑	ND (<0.005)	<0.04	ND (<0.005)	<0.03	ND (<0.003)	<0.009	2	mg/L	lbs/day			
7M. Copper, Total (7440-50-8)		☐	☑	ND (<0.005)	<0.04					1	mg/L	lbs/day			
8M. Lead, Total (7439-92-1)		☐	☑	ND (<0.040)	<0.33					1	mg/L	lbs/day			
9M. Magnesium Total (7439-95-4)		☑	☐	25.4	212					1	mg/L	lbs/day			
10M. Mercury, Total (7439-97-6)		☐	☑	ND (<0.0002)	<0.002					1	mg/L	lbs/day			
11M. Molybdenum Total (7439-98-7)	—	☐	☑	ND (<0.012)	<0.10					1	mg/L	lbs/day			
12M. Nickel, Total (7440-02-0)	—	☐	☑	ND (<0.010)	<0.08					1	mg/L	lbs/day			
13M. Selenium, Total (7782-49-2)	—	☐	☑	ND (<0.040)	<0.33					1	mg/L	lbs/day			
14M. Silver, Total (7440-22-4)	—	☐	☑	ND (<0.005)	<0.04					1	mg/L	lbs/day			
15M. Thallium, Total (7440-28-0)		☐	☑	ND (<0.040)	<0.33					1	mg/L	lbs/day			
16M. Tin Total (7440-31-5)	—	☐	☑	ND (<0.025)	<0.21					1	mg/L	lbs/day			
17M. Titanium Total (7440-32-6)	—	☐	☑	ND (<0.025)	<0.21					1	mg/L	lbs/day			
18M. Zinc, Total (7440-66-6)	—	☐	☑	ND (<0.010)	<0.08					1	mg/L	lbs/day			

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☐	☐	☑	ND (<0.005)	<0.04					1	mg/L	lbs/day			
20M. Phenols, Total	☐	☐	☑	ND (<0.050)	<0.25	ND (<0.050)	<0.17	ND (<0.030)	<0.11	2	mg/L	lbs/day			
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS** 2,3,7,8-TCDD screen resulted in a non-detect (ND) with a reporting limit of 50 mg/L											

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)	☐	☐	☑												
2V. Acrylonitrile (107-13-1)	☐	☐	☑												
3V. Benzene (71-43-2)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☐	☐	☑							1	ug/L	lbs/day			
5V. Bromoform (75-25-2)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
6V. Carbon Tetrachloride (56-23-5)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
7V. Chlorobenzene (108-90-7)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
8V. Chlorodibromomethane (124-48-1)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
9V. Chloroethane (75-00-3)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
10V. 2-Chloroethylvinyl Ether (110-75-8)	☐	☐	☑	ND (<50.0)	<0.42					1	ug/L	lbs/day			
11V. Chloroform (67-66-3)	☐	☐	☑	26.0	0.22					1	ug/L	lbs/day			
12V. Dichlorobromomethane (75-27-4)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
13V. Dichloro-difluoromethane (75-71-8)	☐	☐	☑												
14V. 1,1 – Dichloroethane (75-34-3)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
15V. 1,2 – Dichloroethane (107-06-2)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
16V. 1,1 – Dichloroethylene (75-35-4)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
17V. 1,3 – Dichloropropane (78-87-5)	☐	☐	☑												
18V. 1,2 –Dichloropropylene (542-75-6)	☐	☐	☑												
19V. Ethylbenzene (100-41-4)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
20V. Methyl Bromide (74-83-9)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
21V. Methyl Chloride (74-87-3)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			

CONTINUE ON PAGE 4

CONTINUED FROM THE FRONT

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0105783	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. 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)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
24V. Tetrachloroethylene (127-18-4)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
25V. Toluene (108-88-3)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☐	☐	☑	ND (<4.8)	<0.04					1	ug/L	lbs/day			
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
29V. Trichloro – ethylene (79-01-6)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
30V. Trichloro – fluoromethane (75-69-4)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
31V. Vinyl Chloride (75-01-4)	☐	☐	☑	ND (<2.0)	<0.02					1	ug/L	lbs/day			
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
2A. 2,4 – Dichloro – phenol (120-83-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
3A. 2,4 – Dimethyl – phenol (105-67-9)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☐	☐	☑	ND (<50)	<0.42					1	ug/L	lbs/day			
5A. 2,4 – Dinitro – phenol (51-28-5)	☐	☐	☑	ND (<20)	<0.17					1	ug/L	lbs/day			
6A. 2-Nitrophenol (88-75-5)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
7A. 4-Nitrophenol (100-02-7)	☐	☐	☑	ND (<20)	<0.17					1	ug/L	lbs/day			
8A. P – Chloro – M Cresol (59-50-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
9A. Pentachloro – phenol (87-86-5)	☐	☐	☑	ND (<50)	<0.42					1	ug/L	lbs/day			
10A. Phenol (108-952)	☐	☐	☑	ND (<0.05)	<0.42					1	ug/L	lbs/day			
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☐	☐	☑	ND (<20)	<0.17					1	ug/L	lbs/day			
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☐	☐	☑	ND (<50)	<0.42					1	ug/L	lbs/day			

CONTINUED FROM THE FRONT

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															
1B. Acenaphthene (83-32-9)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
2B. Acenaphtylene (208-96-8)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
3B. Anthracene (120-12-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
4B. Benzidine (92-87-5)	☐	☐	☑	ND (<80)	<0.67					1	ug/L	lbs/day			
5B. Benzo (a) Anthracene (56-55-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
6B. Benzo (a) Pyrene (50-32-8)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
7B. 3,4 – Benzofluoranthene (205-99-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
8B. Benzo (ghi) Perylene (191-24-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
9B. Benzo (k) Fluoranthene (207-08-9)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
15B. Butyl Benzyl Phthalate (85-68-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
16B. 2-Chloronaphthalene (91-58-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
18B. Chrysene (218-01-9)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
19B. Dibenzo (a.h) Anthracene (53-70-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
20B. 1,2 – Dichlorobenzene (95-50-1)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
21B. 1,3 – Dichlorobenzene (541-73-1)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			

CONTINUED FROM PAGE 5

NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0105783	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)	☐	☐	☑	ND (<5.0)	<0.04					1	ug/L	lbs/day			
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☐	☐	☑	ND (<20)	<0.17					1	ug/L	lbs/day			
24B. Diethyl Phthalate (84-66-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
25B. Dimethyl Phthalate (131-11-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
26B. Di-N-butyl Phthalate (84-74-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
27B. 2,4-Dinitrotoluene (121-14-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
28B. 2,6-Dinitrotoluene (606-20-2)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
29B. Di-N-Octyphthalate (117-84-0)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
31B. Fluoranthene (206-44-0)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
32B. Fluorene (86-73-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
33B. Hexachlorobenzene (87-68-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
34B. Hexachlorobutadiene (87-68-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
35B. Hexachloro-cyclopentadiene (77-47-4)	☐	☐	☑	ND (<20)	<0.17					1	ug/L	lbs/day			
36B. Hexachloroethane (67-72-1)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
38B. Isophorone (78-59-1)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
39B. Naphthalene (91-20-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
40B. Nitrobenzene (98-95-3)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
41B. N-Nitro-sodimethylamine (62-75-9)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			

CONTINUED FROM THE FRONT

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. 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 – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
43B. N-Nitro-sodiphenylamine (86-30-6)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
44B. Phenanthrene (85-01-8)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
45B. Pyrene (129-00-0)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
46B. 1,2,4-Tri chlorobenzene (120-82-1)	☐	☐	☑	ND (<10)	<0.08					1	ug/L	lbs/day			
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-0105783	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			✓												
(2) Beta Total			✓												
(3) Radium Total			✓												
(4) Radium 226 Total			✓												

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 ABILIITY 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?

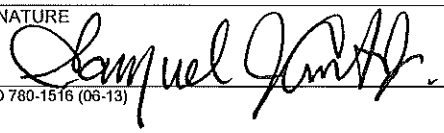
■ YES *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

☐ NO *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services, LLC	2231 W. Altorfer Drive,	800-752-6651	All single analysis parameters
	Peoria, IL 61615		

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)
Sam Correnti, Site Manager - LOMO Site	(573) 754-4501
SIGNATURE 	DATE SIGNED 20 JAN 2023

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

Dyno Nobel - LOMO Plant

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

MO - 0105783

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-0105783	008

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)	✓		✓	ND (< 0.050)	<0.24					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	✓		✓	ND (< 0.050)	<0.24					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)	✓		✓	ND (<0.005)	<0.02					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)	✓		✓	ND (<0.005)	<0.02					1	mg/L	lbs/day			
5M. Chromium III (16065-83-1)	✓		✓	ND (<0.005)	<0.02					1	mg/L	lbs/day			
6M. Chromium VI (18540-29-9)	✓	✓		0.0012	0.01	0.0012	0.004	0.0031	0.01	2	mg/L	lbs/day			
7M. Copper, Total (7440-50-8)	✓	✓		0.041	0.20					1	mg/L	lbs/day			
8M. Lead, Total (7439-92-1)	✓		✓	ND (<0.040)	<0.19					1	mg/L	lbs/day			
9M. Magnesium Total (7439-95-4)	✓	✓		29.6	143					1	mg/L	lbs/day			
10M. Mercury, Total (7439-97-6)	✓		✓	ND (<0.0002)	<0.001					1	mg/L	lbs/day			
11M. Molybdenum Total (7439-98-7)	✓	✓		0.015	0.07					1	mg/L	lbs/day			
12M. Nickel, Total (7440-02-0)	✓		✓	ND (<0.010)	<0.05					1	mg/L	lbs/day			
13M. Selenium, Total (7782-49-2)	✓		✓	ND (<0.040)	<0.19					1	mg/L	lbs/day			
14M. Silver, Total (7440-22-4)	✓		✓	ND (<0.005)	<0.02					1	mg/L	lbs/day			
15M. Thallium, Total (7440-28-0)	✓		✓	ND (<0.040)	<0.19					1	mg/L	lbs/day			
16M. Tin Total (7440-31-5)	✓		✓	ND (<0.025)	<0.12					1	mg/L	lbs/day			
17M. Titanium Total (7440-32-6)	✓		✓	ND (<0.025)	<0.12					1	mg/L	lbs/day			
18M. Zinc, Total (7440-66-6)	✓	✓		0.039	0.19					1	mg/L	lbs/day			

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☑	☐	☑	ND (<0.050)	<0.24					1	mg/L	lbs/day			
20M. Phenols, Total	☑	☐	☑	ND (<0.050)	<0.24	ND (<0.050)	<0.17	ND (<0.030)	<0.08	2	mg/L	lbs/day	n/a	n/a	n/a
DIOXIN																
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☑	☐	☑	**DESCRIBE RESULTS** 2,3,7,8-TCDD screen resulted in a non-detect (ND) with a reporting limit of 50 mg/L												

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
				A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES			A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		A. CONCENTRATION	B. MASS	(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☑		☑												
2V. Acrylonitrile (107-13-1)	☑		☑												
3V. Benzene (71-43-2)	☑		☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☑		☑							1	ug/L	lbs/day			
5V. Bromoform (75-25-2)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
6V. Carbon Tetrachloride (56-23-5)	☑		☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
7V. Chlorobenzene (108-90-7)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
8V. Chlorodibromomethane (124-48-1)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
9V. Chloroethane (75-00-3)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
10V. 2-Chloroethylvinyl Ether (110-75-8)	☑	☐	☑	ND (<50.0)	<0.24					1	ug/L	lbs/day			
11V. Chloroform (67-66-3)	☑	☑	☐	27.7	0.13					1	ug/L	lbs/day			
12V. Dichlorobromomethane (75-27-4)	☑		☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
13V. Dichloro-difluoromethane (75-71-8)	☑	☐	☑							1	ug/L	lbs/day			
14V. 1,1 – Dichloroethane (75-34-3)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
15V. 1,2 – Dichloroethane (107-06-2)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
16V. 1,1 – Dichloroethylene (75-35-4)	☑		☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
17V. 1,3 – Dichloropropane (78-87-5)	☑	☐	☑							1	ug/L	lbs/day			
18V. 1,2 –Dichloropropylene (542-75-6)	☑	☐	☑							1	ug/L	lbs/day			
19V. Ethylbenzene (100-41-4)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
20V. Methyl Bromide (74-83-9)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
21V. Methyl Chloride (74-87-3)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			

CONTINUED FROM THE FRONT

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0105783	008

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (*optional*)		
	A. TESTING RE-QUIRED	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 – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
24V. Tetrachloroethylene (127-18-4)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
25V. Toluene (108-88-3)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☑	☐	☑	ND (<4.8)	<0.02					1	ug/L	lbs/day			
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
29V. Trichloro – ethylene (79-01-6)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
30V. Trichloro – fluoromethane (75-69-4)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
31V. Vinyl Chloride (75-01-4)	☑	☐	☑	ND (<2.0)	<0.01					1	ug/L	lbs/day			
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
2A. 2,4 – Dichloro – phenol (120-83-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
3A. 2,4 – Dimethyl – phenol (105-67-9)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☑	☐	☑	ND (<50)	<0.24					1	ug/L	lbs/day			
5A. 2,4 – Dinitro – phenol (51-28-5)	☑	☐	☑	ND (<20)	<0.17					1	ug/L	lbs/day			
6A. 2-Nitrophenol (88-75-5)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
7A. 4-Nitrophenol (100-02-7)	☑	☐	☑	ND (<20)	<0.10					1	ug/L	lbs/day			
8A. P – Chloro – M Cresol (59-50-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
9A. Pentachloro – phenol (87-86-5)	☑	☐	☑	ND (<50)	<0.24					1	ug/L	lbs/day			
10A. Phenol (108-952)	☑	☐	☑	ND (<0.05)	<0.24					1	ug/L	lbs/day			
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☑	☐	☑	ND (<20)	<0.10					1	ug/L	lbs/day			
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☑	☐	☑	ND (<50)	<0.24					1	ug/L	lbs/day			

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 – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
2B. Acenaphtylene (208-96-8)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
3B. Anthracene (120-12-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
4B. Benzidine (92-87-5)	☑	☐	☑	ND (<80)	<0.39					1	ug/L	lbs/day			
5B. Benzo (a) Anthracene (56-55-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
6B. Benzo (a) Pyrene (50-32-8)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
7B. 3,4 – Benzofluoranthene (205-99-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
8B. Benzo (ghi) Perylene (191-24-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
9B. Benzo (k) Fluoranthene (207-08-9)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
15B. Butyl Benzyl Phthalate (85-68-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
16B. 2-Chloronaphthalene (91-58-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
18B. Chrysene (218-01-9)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
19B. Dibenzo (a.h) Anthracene (53-70-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
20B. 1,2 – Dichlorobenzene (95-50-1)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
21B. 1,3 – Dichlorobenzene (541-73-1)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			

CONTINUED FROM PAGE 5

NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0105783	008

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)	☑	☐	☑	ND (<5.0)	<0.02					1	ug/L	lbs/day			
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☑	☐	☑	ND (<20)	<0.10					1	ug/L	lbs/day			
24B. Diethyl Phthalate (84-66-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
25B. Dimethyl Phthalate (131-11-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
26B. Di-N-butyl Phthalate (84-74-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
27B. 2,4-Dinitrotoluene (121-14-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
28B. 2,6-Dinitrotoluene (606-20-2)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
29B. Di-N-Octyphthalate (117-84-0)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
31B. Fluoranthene (206-44-0)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
32B. Fluorene (86-73-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
33B. Hexachlorobenzene (87-68-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
34B. Hexachlorobutadiene (87-68-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
35B. Hexachloro-cyclopentadiene (77-47-4)	☑	☐	☑	ND (<20)	<0.10					1	ug/L	lbs/day			
36B. Hexachloroethane (67-72-1)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
38B. Isophorone (78-59-1)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
39B. Naphthalene (91-20-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
40B. Nitrobenzene (98-95-3)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
41B. N-Nitro-sodimethylamine (62-75-9)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			

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 – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
43B. N-Nitro-sodiphenylamine (86-30-6)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
44B. Phenanthrene (85-01-8)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
45B. Pyrene (129-00-0)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
46B. 1,2,4-Tri chlorobenzene (120-82-1)	☑	☐	☑	ND (<10)	<0.05					1	ug/L	lbs/day			
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-0105783	008

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			☑												
(2) Beta Total			☑												
(3) Radium Total			☑												
(4) Radium 226 Total			☑												

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?

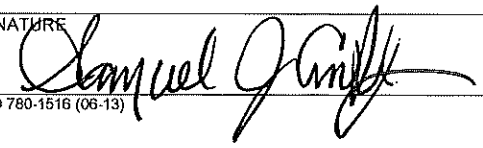
■ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

☐ NO *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
Pace Analytical Services, LLC	2231 W. Altorfer Drive,	800-752-6651	all single analysis parameters
	Peoria, IL 61615		

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)
Sam Correnti, Site Manager - LOMO Site	(573) 754-4501
SIGNATURE 	DATE SIGNED 20 JAN 2023