

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0137243

Owner: Calumet Missouri, LLC
Address: 11089 Highway D, Louisiana, MO 63353

Continuing Authority: same as above
Address: same as above

Facility Name: Calumet Missouri, LLC
Facility Address: 11089 Highway D, Louisiana, MO 63353

Legal Description: see page 2
UTM Coordinates: see page 2

Receiving Stream: see page 2
First Classified Stream and ID: see page 2
USGS Basin & Sub-watershed No.: see page 2

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

FACILITY DESCRIPTION

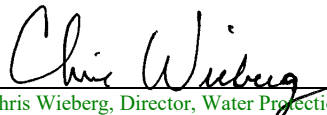
Manufactures aviation, refrigeration, and industrial synthetic lubricants; see additional information on page 2.

This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Sections 640.013, 621.250, and 644.051.6 of the Law.

August 1, 2018 July 1, 2020
Effective Date Modification Date

July 31, 2023
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001 – SIC # 2869, NAICS # 325199

Stormwater only from main portion of plant area (formerly labeled as outfall #001A) and dry weather discharges of steam condensate and cooling tower bleed if required.

Legal Description:	SE ¼ NE ¼ Sec. 29, T54N, R1W, Pike County
UTM Coordinates:	X = 669931, Y = 4365584
Receiving Stream:	Buffalo Creek (P)
First Classified Stream and ID:	Buffalo Creek (P) (0014)
USGS Basin & Sub-watershed No.:	07110004-0702
Actual average flow:	0.012 MGD

OUTFALL #002 – SIC # 2869, NAICS # 325199

Activated sludge plant used to treat industrial process wastewater and contaminated stormwater from secondary containment; also includes cooling tower bleed, and steam condensate. Sludge disposal by contract hauler.

Legal Description:	SE ¼, NE ¼, Sec 29, T54N, R1W, Pike County
UTM Coordinates (sampling point):	X = 669758, Y = 4365797
UTM Coordinates (discharge point):	X = 670470, Y = 4366608
Receiving Stream	Mississippi River
First Classified Stream and ID:	Mississippi River (P) (3699)
USGS Basin & Sub-watershed No.:	07110004-0702
Design flow:	0.564 MGD (continued from previous permit)
Process Wastewater Design Flow:	0.06 MGD (value used for technology based calculations)
Cooling tower bleed average flow:	0.005 MGD
Average overall flow:	0.029 MGD

Previous permit included outfall #002's combined discharges with Dyno Nobel. This permit identifies internal locations for permit compliance prior to comingling with Dyno Nobel's discharge. Compliance point of Outfall #001B removed. Applicable parameters moved to outfall #002. Mixing still afforded to this outfall as it discharges to the Mississippi River via a manmade conveyance.

OUTFALL #003 – SIC # 2869, NAICS # 325199

Stormwater discharge from the southern portion of the property; contact with industrial activity: materials handling and storage, including metal, cables, concrete forms, railroad ties, etc.; and secondary containment water: from powder and fatty acids storage tank area. The product and fatty acid loading and unloading activities are performed in containment areas.

Legal Description:	NE ¼, SE ¼, Sec 29, T54N, R1W, Pike County
UTM Coordinates:	X = 669759, Y = 4365472
Receiving Stream	Tributary to MUDD V1.0
First Classified Stream	8-28-13 MUDD V1.0 (C) (3960)
Second Classified Stream and ID:	Buffalo Creek (P) (0014)
USGS Basin & Sub-watershed No.:	07110004-0702
Design flow (10 Year 24 Hr. event):	1.0 MGD (5 inches; 9 acres)
Actual average stormwater flow:	dependent upon precipitation

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALLS #001 and #003 <i>Wet Weather</i> ∞	TABLE A-1 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on August 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL LIMITATIONS		BENCH- MARKS	MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE		MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		-	once/quarter ◇	24 hr. estimate measured
Precipitation	inches	*		-	once/quarter ◇	
CONVENTIONAL						
Biochemical Oxygen Demand 5-Day	mg/L	**		60	once/quarter ◇	grab ∞
Chemical Oxygen Demand	mg/L	**		120	once/quarter ◇	grab ∞
Oil & Grease	mg/L	**		10	once/quarter ◇	grab ∞
pH (Note 1a)	SU	6.5 to 9.0		-	once/quarter ◇	grab ∞
Total Suspended Solids	mg/L	**		100	once/quarter ◇	grab ∞
METALS						
Copper, Total Recoverable	µg/L	**	36	once/quarter ◇	grab ∞	
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2018</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

OUTFALL #001 Dry Weather €	TABLE A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on August 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL LIMITATIONS		BENCH-MARKS	MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE		MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*	*		once/week	24 hr. estimate €
CONVENTIONAL						
Chemical Oxygen Demand	mg/L	*	*		once/week	grab €
Chlorine/Bromine, Total Residual (Note 2b)	µg/L	17 (ML130)	8 (ML130)		once/week	grab €
Oil & Grease	mg/L	15	10		once/week	grab €
pH (Note 1a)	SU	6.5 to 9.0	6.5 to 9.0		once/week	grab €
Total Suspended Solids	mg/L	100	30		once/week	grab €
METALS						
Copper, Total Recoverable	µg/L	25.0	12.5		once/week	grab €
MONITORING REPORTS SHALL BE SUBMITTED <u>UPON DRY WEATHER DISCHARGE</u> ; RESULTS MUST BE SUBMITTED BY <u>THE 28TH DAY OF THE MONTH FOLLOWING DISCHARGE.</u>						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #002 <i>process wastewater</i>	TABLE A-3 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on August 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow - effluent	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 (Note 4)	°F	45		*	daily	calculation
T _{dev} January (Note 4)	°F	48		*	daily	calculation
T _{cap} February (Note 4)	°F	45		*	daily	calculation
T _{dev} February (Note 4)	°F	48		*	daily	calculation
T _{cap} March (Note 4)	°F	57		*	daily	calculation
T _{dev} March (Note 4)	°F	60		*	daily	calculation
T _{cap} April (Note 4)	°F	68		*	daily	calculation
T _{dev} April (Note 4)	°F	71		*	daily	calculation
T _{cap} May (Note 4)	°F	78		*	daily	calculation
T _{dev} May (Note 4)	°F	81		*	daily	calculation
T _{cap} June (Note 4)	°F	86		*	daily	calculation
T _{dev} June (Note 4)	°F	89		*	daily	calculation
T _{cap} July (Note 4)	°F	88		*	daily	calculation
T _{dev} July (Note 4)	°F	91		*	daily	calculation
T _{cap} August (Note 4)	°F	88		*	daily	calculation
T _{dev} August (Note 4)	°F	91		*	daily	calculation
T _{cap} September (Note 4)	°F	86		*	daily	calculation
T _{dev} September (Note 4)	°F	89		*	daily	calculation
T _{cap} October (Note 4)	°F	75		*	daily	calculation
T _{dev} October (Note 4)	°F	78		*	daily	calculation
T _{cap} November (Note 4)	°F	65		*	daily	calculation
T _{dev} November (Note 4)	°F	68		*	daily	calculation
T _{cap} December (Note 4)	°F	52		*	daily	calculation
T _{dev} December (Note 4)	°F	55		*	daily	calculation
Time of Deviation-Month (Note 4)	hours	*		*	daily	calculation
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALL #002 process wastewater	TABLE A-4 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on August 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
CONVENTIONAL						
Biochemical Oxygen Demand ₅	mg/L	120		45	once/month	composite Ψ
Biochemical Oxygen Demand ₅	lbs/day	60.0		22.5	once/month	composite Ψ
Chemical Oxygen Demand	mg/L	*		*	once/month	composite Ψ
Chemical Oxygen Demand	lbs/day	*		*	once/month	composite Ψ
Oil & Grease	mg/L	15		10	once/month	grab
pH (Note 1b)	SU	6.0 to 9.0		6.0 to 9.0	continuous	continuous
pH (Note 1b)	hours	1.0		7.43	continuous	calculation
Total Suspended Solids	mg/L	183		57	once/month	composite Ψ
Total Suspended Solids	lbs/day	91.6		28.5	once/month	composite Ψ
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>SEPTEMBER 28, 2018</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
CONVENTIONAL						
Chlorine/Bromine, Total Residual (Note 2a)	µg/L	*		*	once/quarter ◇	grab
METALS						
Tin – Removed at 2020 Modification	N/A	n/a		n/a	n/a	n/a
NUTRIENTS						
Ammonia as N	mg/L	*		*	once/quarter ◇	grab
Nitrogen, Total (TN)	mg/L	*		*	once/quarter ◇	grab
OTHER						
Chloride	mg/L	*		*	once/quarter ◇	grab
Sulfate	mg/L	*		*	once/quarter ◇	grab
Chlorides and Sulfates	mg/L	*		*	once/quarter ◇	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2018</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Toxicity						
Whole Effluent Toxicity, Acute See special condition #1	TU _a	*			twice/year φ	composite Ψ
MONITORING REPORTS SHALL BE SUBMITTED <u>TWICE PER YEAR</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2019</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
PHYSICAL						
Total Time of Deviation °F (Note 4)	hours	87.6			(Note 4)	calculation
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALL #002 <i>process wastewater</i>	TABLE A-5 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS							
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on August 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:								
EFFLUENT PARAMETERS	FINAL EFFLUENT LIMITATIONS						MONITORING REQUIREMENTS	
	UNITS	DAILY MAXIMUM	MONTHLY AVERAGE	UNITS	DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
§414 PARAMETERS								
Acenaphthene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Acenaphthylene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Acrylonitrile	lbs/day	0.121	0.048	µg/L	242	96	once/month	grab
Anthracene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Benzene	lbs/day	0.068	0.019	µg/L	136	37	once/month	grab
Benzo(a)anthracene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
3,4-Benzofluoranthene	lbs/day	0.031	0.012	µg/L	61	23	once/month	grab
Benzo(k)fluoranthene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Benzo(a)pyrene	lbs/day	0.031	0.012	µg/L	61	23	once/month	grab
Bis(2-ethylhexyl) phthalate	lbs/day	0.140	0.052	µg/L	279	103	once/month	grab
Carbon Tetrachloride	lbs/day	0.019	0.009	µg/L	38	18	once/month	grab
Chlorobenzene	lbs/day	0.014	0.008	µg/L	28	15	once/month	grab
Chloroethane	lbs/day	0.134	0.052	µg/L	268	104	once/month	grab
Chloroform	lbs/day	0.023	0.011	µg/L	46	21	once/month	grab
2-Chlorophenol	lbs/day	0.049	0.016	µg/L	98	31	once/month	grab
Chrysene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Di-n-butyl phthalate	lbs/day	0.029	0.014	µg/L	57	27	once/month	grab
1,2-Dichlorobenzene	lbs/day	0.082	0.039	µg/L	163	77	once/month	grab
1,3-Dichlorobenzene	lbs/day	0.022	0.016	µg/L	44	31	once/month	grab
1,4-Dichlorobenzene	lbs/day	0.014	0.008	µg/L	28	15	once/month	grab
1,1-Dichloroethane	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
1,2-Dichloroethane	lbs/day	0.106	0.034	µg/L	211	68	once/month	grab
1,1-Dichloroethylene	lbs/day	0.013	0.008	µg/L	25	16	once/month	grab
1,2-trans-Dichloroethylene	lbs/day	0.027	0.011	µg/L	54	21	once/month	grab
2,4-Dichlorophenol	lbs/day	0.056	0.020	µg/L	112	39	once/month	grab
1,2-Dichloropropane	lbs/day	0.115	0.077	µg/L	230	153	once/month	grab
1,3-Dichloropropylene	lbs/day	0.022	0.015	µg/L	44	29	once/month	grab
Diethyl phthalate	lbs/day	0.102	0.041	µg/L	203	81	once/month	grab
2,4-Dimethylphenol	lbs/day	0.018	0.009	µg/L	36	18	once/month	grab
Dimethyl phthalate	lbs/day	0.024	0.010	µg/L	47	19	once/month	grab
4,6-Dinitro-o-cresol	lbs/day	0.139	0.039	µg/L	277	78	once/month	grab
2,4-Dinitrophenol	lbs/day	0.062	0.036	µg/L	123	71	once/month	grab
2,4-Dinitrotoluene	lbs/day	0.143	0.057	µg/L	285	113	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>SEPTEMBER 28, 2018</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.								

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALL #002 <i>process wastewater</i>	TABLE A-6 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS							
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on August 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:								
EFFLUENT PARAMETERS	FINAL EFFLUENT LIMITATIONS						MONITORING REQUIREMENTS	
	UNITS	DAILY MAXIMUM	MONTHLY AVERAGE	UNITS	DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
§414 PARAMETERS								
2,6-Dinitrotoluene	lbs/day	0.321	0.128	µg/L	641	255	once/month	grab
Ethylbenzene	lbs/day	0.054	0.016	µg/L	108	32	once/month	grab
Fluoranthene	lbs/day	0.034	0.013	µg/L	68	25	once/month	grab
Fluorene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Hexachlorobenzene	lbs/day	0.014	0.008	µg/L	28	15	once/month	grab
Hexachlorobutadiene	lbs/day	0.025	0.010	µg/L	49	20	once/month	grab
Hexachloroethane	lbs/day	0.027	0.011	µg/L	54	21	once/month	grab
Methyl Chloride	lbs/day	0.095	0.043	µg/L	190	86	once/month	grab
Methylene Chloride	lbs/day	0.045	0.020	µg/L	89	40	once/month	grab
Naphthalene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Nitrobenzene	lbs/day	0.034	0.014	µg/L	68	27	once/month	grab
2-Nitrophenol	lbs/day	0.035	0.021	µg/L	69	41	once/month	grab
4-Nitrophenol	lbs/day	0.062	0.036	µg/L	124	72	once/month	grab
Phenanthrene	lbs/day	0.030	0.011	µg/L	59	22	once/month	grab
Phenol	lbs/day	0.013	0.008	µg/L	26	15	once/month	grab
Pyrene	lbs/day	0.034	0.013	µg/L	67	25	once/month	grab
Tetrachloroethylene	lbs/day	0.028	0.011	µg/L	56	22	once/month	grab
Toluene	lbs/day	0.040	0.013	µg/L	80	26	once/month	grab
Total Chromium	lbs/day	1.386	0.555	µg/L	2,770	1,110	once/month	grab
Total Copper	lbs/day	1.691	0.726	µg/L	3,380	1,450	once/month	grab
Total Cyanide	lbs/day	0.600	0.210	µg/L	1,200	420	once/month	grab
Total Lead	lbs/day	0.345	0.160	µg/L	690	320	once/month	grab
Total Nickel	lbs/day	1.992	0.846	µg/L	3,980	1,690	once/month	grab
Total Zinc	lbs/day	1.306	0.525	µg/L	2,610	1,050	once/month	grab
1,2,4-Trichlorobenzene	lbs/day	0.070	0.034	µg/L	140	68	once/month	grab
1,1,1-Trichloroethane	lbs/day	0.027	0.011	µg/L	54	21	once/month	grab
1,1,2-Trichloroethane	lbs/day	0.027	0.011	µg/L	54	21	once/month	grab
Trichloroethylene	lbs/day	0.027	0.011	µg/L	54	21	once/month	grab
Vinyl Chloride	lbs/day	0.134	0.052	µg/L	268	104	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.								

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALL #002 <i>process wastewater</i>	TABLE A-7 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on <u>July 1, 2020</u> , and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M						
CONVENTIONAL						
Turbidity	NTU	*		*	once/month	grab
METALS						
Aluminum, Total Recoverable	µg/L	*		*	once/month	grab
Titanium, Total Recoverable	µg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2020</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

* Monitoring requirement only.

** Monitoring requirement with associated benchmark.

Ψ A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

∞ Wet weather discharges: all samples shall be collected from a discharge resulting from a precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable precipitation event. If a discharge does not occur within the reporting period, report as no discharge. The total amount of precipitation should be noted from the event from which the samples were collected.

€ Dry weather discharges: The facility is required to sample dry weather discharges from outfall #001. Only at times when the facility cannot accept the steam condensate into the wastewater treatment plant due to stress on the system, the facility has the authorization to discharge steam condensate and cooling tower bleed. The facility will sample, at a minimum, weekly and report monthly if there is a discharge. If there is not a discharge, a report is not required.

Note 1 a. The facility will report the minimum and maximum values. pH is not to be averaged.

b. The facility will continuously monitor the pH of the discharge from outfall #002; the facility will report the minimum and maximum values, pH is not to be averaged. The effluent limitations are 6.0 to 9.0; if a discharge occurs below 6.0 or above 9.0, the facility will track the time of the excursion. Each individual excursion is not to exceed 1.0 hour. The facility will report all excursions and enter the greatest value in time of excursion for the daily maximum. The total time of all excursions for the month is not to exceed 7.43 hours.

Note 2 a. This parameter has a minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine/bromine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values.

b. This permit contains a Total Residual Chlorine (TRC)/Total Residual Bromine (TRB) limit. This effluent limit is below the minimum quantification level (ML) of the most sensitive EPA approved CLTRC methods which measure total residual halogens. The Department has determined the current acceptable ML is 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

quantification level does not authorize the discharge of chlorine or bromine in excess of the effluent limits stated in the permit. The permittee will enter analysis in eDMR for TRC as there is no TRC/TRB parameter available. Please see Fact Sheet Part III CHLORINE/BROMINE BEST PROFESSIONAL JUDGMENT LIMITATIONS for further information.

Note 3: $\Delta T = [((Q_s/4)T_s + Q_e T_e) / ((Q_s/4) + Q_e)] - T_s$

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

Note 4: 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.

$$T_{emz} = [((Q_s/4)T_s + Q_e T_e) / ((Q_s/4) + Q_e)]$$

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 any 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.

- If T_{emz} is less than T_{cap} then the permittee records "0" hours deviation.
- Any time T_{emz} is above T_{cap} then the facility reports the number of hours of deviation.
- 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:

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

◇ 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 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

φ Twice yearly sampling schedule:

MINIMUM BI-ANNUAL SAMPLING REQUIREMENTS			
	MONTHS	WET TEST	REPORT IS DUE
First Half of Year	January, February, March, April, May, June	Sample at least once during any month of the half year	July 28 th
Second Half of Year	July, August, September, October, November, December	Sample at least once during any month of the half year	January 28 th

B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
 - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee 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 that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The Allowable Effluent Concentration (AEC) for this facility is 10%.
 - (e) The dilution series is: 2.5%, 5%, 10%, 20%, and 40%.
 - (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 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.
2. Electronic Discharge Monitoring Report (eDMR) Submission System
 - (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
 - (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
 - (1) Any additional report required by the permit excluding bypass reporting.
After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
 - (c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
 - (1) General Permit Applications/Notices of Intent to discharge (NOIs);
 - (2) Notices of Termination (NOTs);
 - (3) No Exposure Certifications (NOEs);
 - (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
 - (5) Bypass reporting.
 - (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>.
 - (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.
3. The facility must obtain a representative sample from the outfall #003 area if discharge is occurring even if a structure has not been built.

C. SPECIAL CONDITIONS (CONTINUED)

4. The purpose of the Stormwater Pollution Prevention Plan (SWPPP) and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effectively preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.
5. The facility's SIC code(s) or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a SWPPP which must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site. The SWPPP must be reviewed and updated every five (5) years or as site conditions change (see Part III: Antidegradation Analysis and SWPPP sections in the fact sheet). The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in February 2009 (www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf). The SWPPP must include:
 - (a) The permittee must identify all industrial stormwater discharges for the plant. These discharges may not currently have outfalls identified. The permittee must identify areas where stormwater is leaving the site and include these areas in the SWPPP. The SWPPP must be submitted to the department with the application for permit renewal. The facility will identify what pollutants are present in the discharges, including but not limited to: flow, chemical oxygen demand, total suspended solids, ammonia as N, and total recoverable copper.
 - (b) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
 - (c) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
 - i. Operational deficiencies must be corrected within seven (7) calendar days.
 - ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
 - iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including the general timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
 - iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
 - v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department and EPA personnel upon request.
 - (d) A provision for designating an individual to be responsible for environmental matters.
 - (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.
6. This permit stipulates pollutant benchmarks applicable to your discharge. The benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Benchmark monitoring and visual inspections shall be used to determine the overall effectiveness of SWPPP and to assist you in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your stormwater discharge(s).

Any time a benchmark exceedance occurs a Corrective Action Report (CAR) must be completed. A CAR is a document that records the efforts undertaken by the facility to improve BMPs to meet benchmarks in future samples. CARs must be retained with the SWPPP and available to the department upon request. If the efforts taken by the facility are not sufficient and subsequent exceedances of a benchmark occur, the facility must contact the department if a benchmark value cannot be achieved. Failure to take corrective action to address a benchmark exceedance and failure to make measureable progress towards achieving the benchmarks is a permit violation.

C. SPECIAL CONDITIONS (CONTINUED)

7. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
 - (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that 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. Any spills should be noted in the SWPPP if a SWPPP is required.
 - (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property to comply with general water quality criteria, effluent limits, or benchmarks. This could include the use of straw bales, silt fences, or sediment basins, if needed.
 - (f) Ensure adequate provisions are provided to prevent surface water intrusion into the storage basin, to divert stormwater runoff around the storage basin, and to protect embankments from erosion.
8. To protect the general criteria found at 10 CSR 20-7.031(4), before releasing water accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen. If the presence of odor or sheen is indicated, the water shall be treated using an appropriate method or disposed of in accordance with legally approved methods, such as being sent to a wastewater treatment facility. Following treatment, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Table A. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP to be available on demand to DNR and EPA personnel.
9. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.
10. All outfalls and permitted features must be clearly marked in the field.

C. SPECIAL CONDITIONS (CONTINUED)

11. Changes in Discharges of Toxic Pollutant

In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

- (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (6) The notification level established by the department in accordance with 40 CFR 122.44(f).
- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/L);
 - (2) One milligram per liter (1 mg/L) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
 - (4) The level established by the Director in accordance with §122.44(f).

12. Report as no-discharge when a discharge does not occur during the report period.

13. Reporting of Non-Detects

- (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
- (b) The permittee shall not report a sample result as “non-detect” without also reporting the detection limit of the test. Reporting as “non-detect” without also including the detection limit will be considered failure to report, which is a violation of this permit.
- (c) The permittee shall report the “non-detect” result using the less than sign and the minimum detection limit (e.g. <10).
- (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
- (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
- (f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
MO-0137243
CALUMET MISSOURI, L.L.C.

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

PART I – FACILITY INFORMATION

See page one of original fact sheet. Discharge flows are not increasing with this modification.

PART II – MODIFICATION RATIONALE

This operating permit is hereby modified to reflect the addition of new synthetic lubricant manufacturing and subsequent addition of wastewater to the existing treatment process. Monitoring for turbidity, aluminum, and titanium was added; monitoring for tin was removed. No other changes were made at this time other than minor formatting corrections.

ANTIBACKSLIDING:

Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(l)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
 - During the permit renewal in 2018, the facility indicated they may be using tin as an additive in a new manufacturing process; however, the manufacturing process changed; this modification removes tin as a monitoring requirement.

ANTIDEGRADATION REVIEW:

Process water discharges with new, altered, or expanding flows, the Department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

- ✓ On March 13, 2020, the engineering section provided a letter to the facility stating "In accordance with the Missouri Antidegradation Rule and Implementation Procedure, the changes you have proposed to the facilities manufacturing processes introduce new pollutants of concern to the facility effluent making antidegradation applicable to the facility. The chemical constituents, identified to the department, of the new biodegradable oil proposed for manufacturing do not have established water quality standards or applicable effluent limit guidelines (ELGs) that would serve as the basis to perform an alternative analysis. Without having water quality standards or ELGs it is not possible to perform a structured cost analysis of alternatives. For this reason there is no need to submit an Antidegradation application, and you can move forward with an application to modify the operating permit." However, the permit writer has identified three pollutants not considered under the last permit therefore are included in this modification.

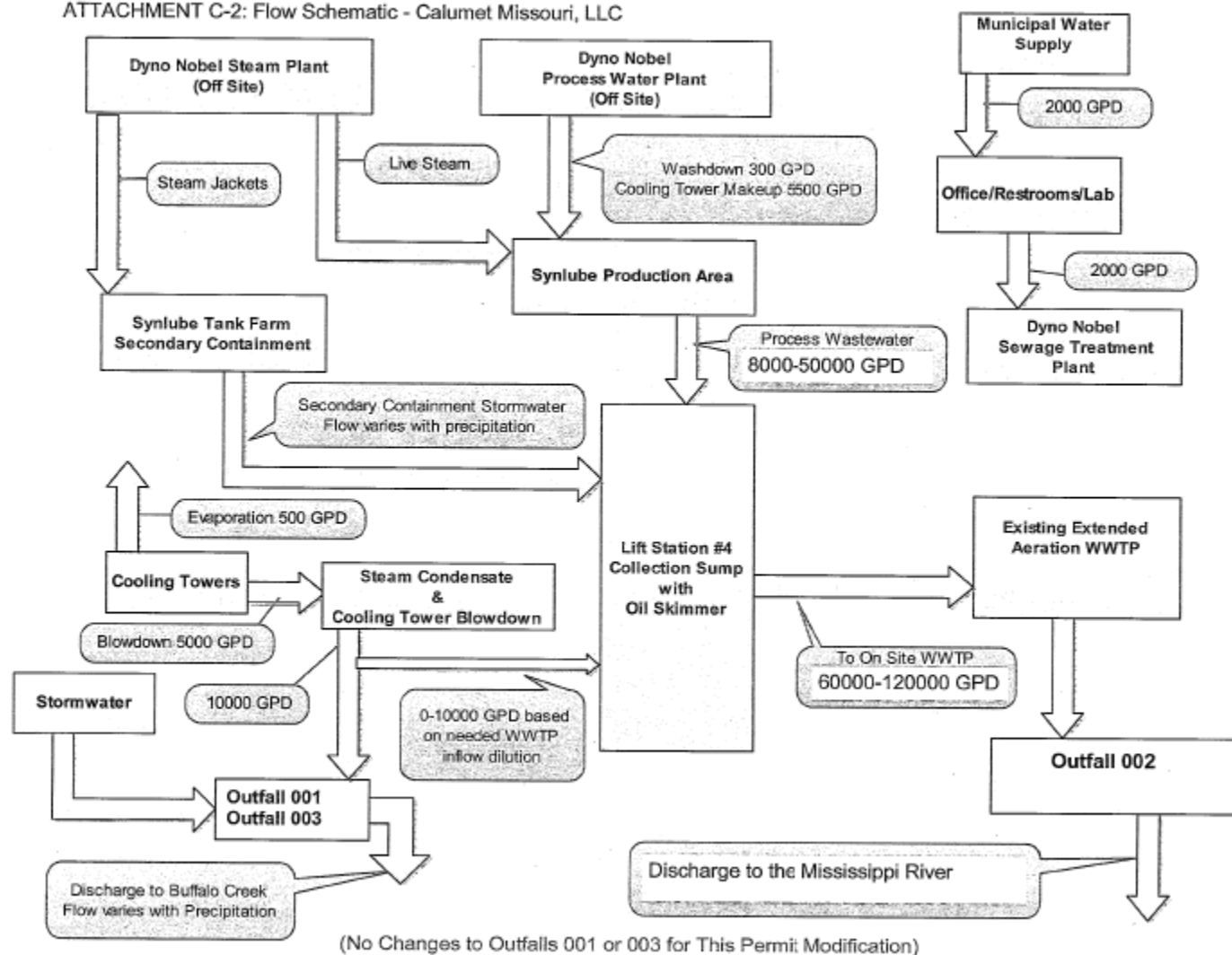
COST ANALYSIS FOR COMPLIANCE (CAFCON):

Pursuant to Section 644.145, RSMo, when incorporating a new requirement for discharges from publicly owned facilities, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned facility, the Department of Natural Resources shall make a "finding of affordability" on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits not including new requirements may be deemed affordable.

- ✓ The Department is not required to complete a cost analysis for compliance because the facility is not publically owned.

FLOW DIAGRAM:

ATTACHMENT C-2: Flow Schematic - Calumet Missouri, LLC



GENERAL CRITERIA CONSIDERATIONS:

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

WATER QUALITY STANDARD REVISION:

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

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

PART III – EFFLUENT LIMITS REVIEW AND DETERMINATIONS

EFFLUENT LIMITATIONS:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
TURBIDITY	NTU	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
TIN, TR	µg/L	REMOVED	REMOVED	REMOVED	REMOVED	REMOVED	REMOVED
TITANIUM, TR	µg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB

* monitoring and reporting requirement only
new parameter not established in previous state operating permit
TR total recoverable

CONVENTIONAL:

Biochemical Oxygen Demand 5-day (BOD₅)

Continued. The new manufactured synthetic lubricant will likely contribute to BOD₅ to the treatment system. Effluent limits are retained from the 2018 permit. Daily maximum is 120 mg/L and 16.8 lbs/day; monthly average is 45 mg/L and 6.3 lbs/day per 40 CFR 414.81. Data were reviewed for the last 18 months; data range from non-detect to 8.5 mg/L; and up to 1.4 lbs/day maximum.

Chemical Oxygen Demand (COD)

Continued. COD is also a valuable indicator parameter. Continued COD monitoring allows the permittee to identify COD increases possibly indicating incomplete chemical reactions or incomplete treatment is being discharged and may indicate a need for maintenance or improvement of the treatment system. The facility disclosed the new reaction would create approximately 5000 mg/L of COD in about 200 gallons of wastewater; only a fraction of what is actually discharged from the process wastewater outfall. Data were reviewed for the last 18 months; the data range from non-detect to 53 mg/L. Monitoring is continued to determine future compliance with Missouri's general criteria per 10 CSR 20-7.031(4) and if implementing technology limits for this pollutant may be appropriate in the future.

pH

Continued. 6.0 to 9.0 SU. Technology based limits are continued and are applicable to this outfall. pH is a fundamental water quality indicator. The new manufacturing process incorporates pH adjustment; these limitations are protective of the receiving stream. Additionally, metals leachability and ammonia availability in wastewater is dependent on pH. pH will be evaluated at the renewal but the new manufactured lubricant wastewater is not expected to be significantly different in pH from the other wastewater already occurring at the site.

Turbidity

New. Monitoring is required to assure general criteria are being met. Future data will compare turbidity measurements with solids and titanium values to assure general criteria per 10 CSR 20-7.3031(4) are being met. The Mississippi River is quite turbid naturally and discharge values will be compared to the river to assess general criteria compliance.

METALS:

Aluminum, Total Recoverable

New. Aluminum is a newly identified pollutant not considered under the 2018 renewal. Monitoring is included per the permit writer's best professional judgment. While the Mississippi River provides a significant amount of dilution, monitoring is required to assure the aluminum being used as a manufacturing additive, not included in the final product, is being retained with the solids in the treatment system and is not discharged. Numeric water quality criteria are currently 750 µg/L maximum at any time for aluminum; mixing considerations would be afforded if future data show reasonable potential.

Titanium, Total Recoverable

Titanium is identified as a catalyst in the proprietary manufacturing process. While there are no numeric water quality standards for this parameter, titanium was identified by the permittee to be filtered from the final product and disposed of with the solid waste stream. To assure the facility is maintaining appropriate controls in the wastewater treatment system, the parameter requires monitoring. Future data will be evaluated to assure best management practices are maintained and to ensure compliance with

Missouri's general water quality criteria per 10 CSR 20-7.031(4); titanium is a white powder not soluble in water; discharge of visible turbidity or unsightly color is prohibited by 10 CSR 20-7.031(4)(C).

PART IV – ADMINISTRATIVE REQUIREMENTS

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

PUBLIC NOTICE:

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

✓ The Public Notice period for this operating permit was from 5/15/2020-6/15/2020; no comments were received.

DATE OF FACT SHEET: JUNE 18, 2020

COMPLETED BY:

PAM HACKLER, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL AND MODIFICATION
OF
MO-0137243
CALUMET MISSOURI, LLC

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified for less.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)2.] a factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I. FACILITY INFORMATION

Facility Type: Industrial, Major
Facility SIC Code(s): 2869
Facility NAICS Code: 325199
Application Date: 10/06/2017
Modification Date: 09/27/2016
Expiration Date: 04/30/2018

FACILITY DESCRIPTION:

Manufactures aviation, refrigeration, and industrial synthetic lubricants; see additional information on page 2 of the permit.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.012 MGD	dependent upon precipitation	BMPs	stormwater; intermittent steam condensate
#002	0.564 MGD	0.06 MGD	aerobic digestion, clarifier	process wastewater & treated stormwater
#003	1.0 MGD	dependent upon precipitation	BMPs	stormwater

BMPs means best management practices

FACILITY PERFORMANCE HISTORY & COMMENTS:

The electronic discharge monitoring reports were reviewed for the last five years. Only four exceedances were noted, and they occurred at the previously shared outfall. Two exceedances for pH, and two exceedances for temperature. An inspection was not performed for this facility within the last five years.

Parameters for stormwater outfalls #001 and #003 were based upon data obtained from outfall #001 as no data was submitted to the department for outfall #003 because it has not been constructed yet. The permit writer considers the stormwater outfalls as sufficiently similar to group them together for this permit renewal. Outfall #003 was added during a modification in 2016 but the facility has not yet constructed the conveyance.

Outfall #002, the permittee requested a revision to the average flow for process wastewater being discharged from this outfall. The permit now reflects increase in flows from 20,000 gpd to 60,000 gpd. Since this is average actual flow and not design flow, an antidegradation review is not required. Previous permit did not correctly categorize the permit in MoCWIS where the facility is

subject to an effluent limitation guideline. The permittee is subject to 40 CFR 414, specialty organic chemicals. The SIC code for this facility is incorporated by reference.

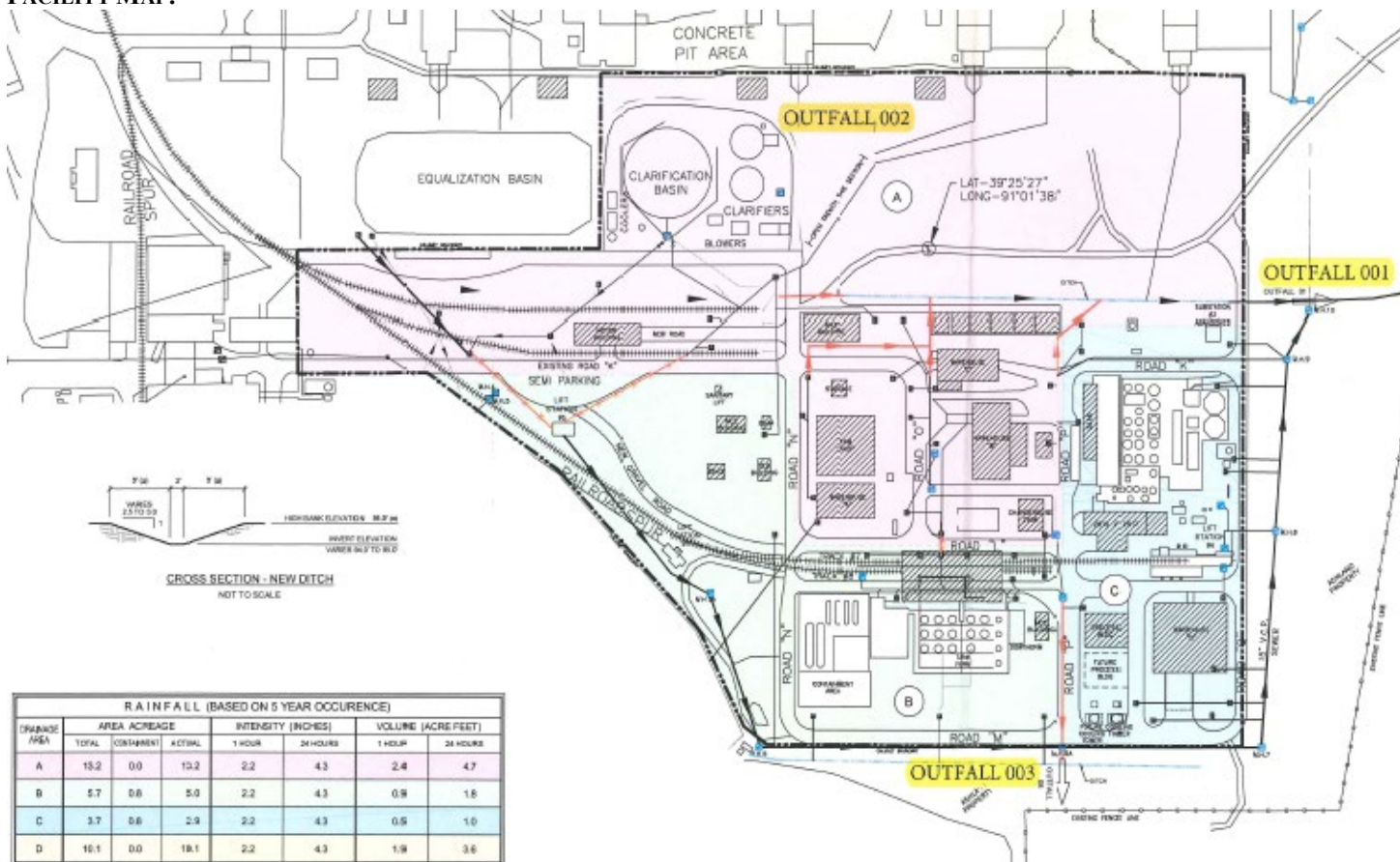
While outfall #001 was identified as stormwater only in the permit application, the facility has since discovered that cooling discharges must sometimes be routed to outfall #001 to protect the infrastructure of the wastewater treatment plant. This permit allows conditional discharges of cooling discharges. The permittee expects this discharge only be required during the very coldest times of year.

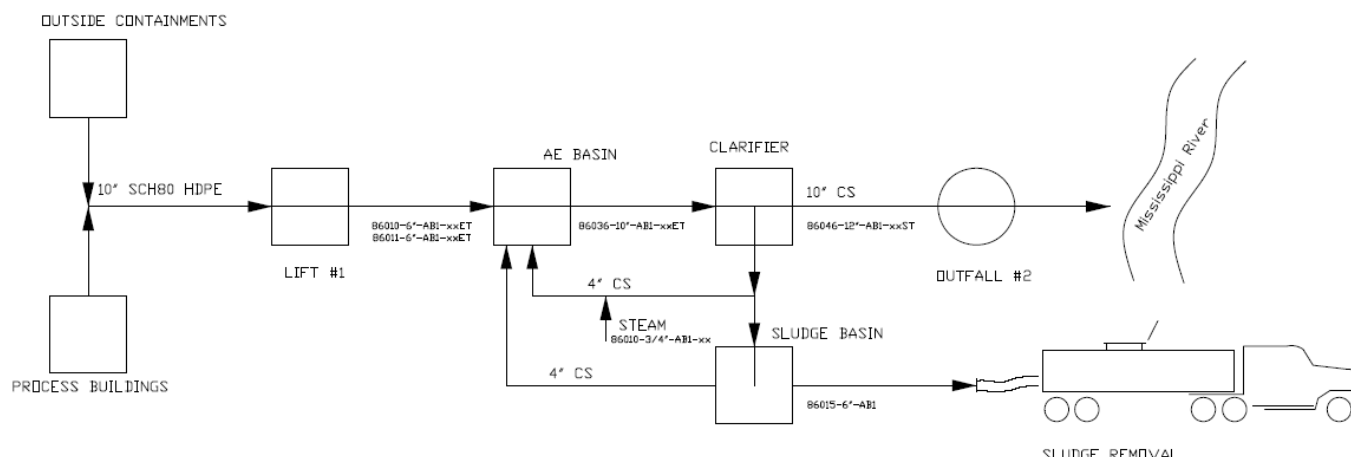
MAJOR WATER USER:

Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statutes Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). <https://dnr.mo.gov/pubs/pub2337.htm>

✓ Not applicable; the facility purchases water from Dyno Nobel.

FACILITY MAP:



WATER BALANCE DIAGRAM:**Part II. RECEIVING STREAM INFORMATION****RECEIVING WATER BODY'S WATER QUALITY:**

The receiving streams, the Mississippi and Buffalo Creek have concurrent water quality data available. Data is available at the United States Geology Survey (USGS) website.

303(d) LIST:

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

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

TOTAL MAXIMUM DAILY LOAD (TMDL):

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. <http://dnr.mo.gov/env/wpp/tmdl/>

✓ Not applicable; this facility is not associated with a TMDL.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

✓ As per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's effluent limitation table and further discussed in the derivation & discussion of limits section.

Missouri or Mississippi River: ☒
 Lake or Reservoir: ☐
 Losing: ☐
 Metropolitan No-Discharge: ☐
 Special Stream: ☐
 Subsurface Water: ☐
 All Other Waters: ☒

RECEIVING STREAMS TABLE:

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

#003	Tributary to 8-20-13 MUDD V1.0	n/a	n/a	GEN	0 mi	
	8-20-13 MUDD V1.0	C	3960	AQL (WWH), HHP, IRR, LWW, SCR, WBC-B	0.3 mi	
	Buffalo Creek (previous first classified stream)	P	0014	AQL (WWH), HHP, IRR, LWW, SCR, WBC-B	0.7 mi	

n/a not applicable

WBID = Waterbody IDentification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip

* As per 10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = Whole body contact recreation supporting swimming uses and has public access;

WBC-B = Whole body contact recreation supporting swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): GRW = Groundwater

RECEIVING STREAM LOW-FLOW VALUES:

OUTFALL	RECEIVING STREAM (P)	LOW-FLOW VALUES (CFS)		
		1Q10	7Q10	30Q10
#001	Buffalo Creek (P) default	0.1	0.1	1.0
#002	Mississippi River (P) *	36,300	37,185.71	38,769.33

* Low flow values were obtained from USGS Gaging Station #05587450 near Grafton, IL. Data were obtained from 4/1/1933 through 1/2/2018 and were calculated using a departmentally developed spreadsheet (available upon request).

DEFAULT MIXING TABLE OUTFALL #001: BUFFALO CREEK

MIXING ZONE (CFS) (CHRONIC) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) (ACUTE) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0.025	0.025	0.25	0.0025	0.0025	0.025

MIXING CONSIDERATIONS TABLE OUTFALL #002: MISSISSIPPI RIVER

MIXING ZONE (CFS) (CHRONIC) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) (ACUTE) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
9,075	9,296.4	9,692.3	8.73	8.73	8.73

ZID cannot be more than 10 times the facility design flow. Design flow is 0.564 MGD = 0.873 cfs.

THERMAL MIXING CONSIDERATIONS:

This facility has thermal discharge limitations. See outfall #002 for thermal limitations and derivation.

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements are recommended at this time. However, the permit stipulates thermal limitations which require determining the in-stream temperature and the stream flow. These measurements can be achieved by reviewing and downloading USGS data.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

- ✓ Not applicable; the facility does not discharge to a losing stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- ✓ Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
 - ✓ Material and substantial alterations or additions to the permitted facility occurred after permit issuance justify the application of a less stringent effluent limitation.
 - Several changes have occurred; Ashland-Hercules no longer discharges through outfall #001 (modification in March 2015) and the facility has determined outfall #001b no longer represents the discharges from the facility but in fact are combined discharges for this facility and Dyno Nobel. Outfall #002 is established as the main facility outfall for process water.
 - Outfall #001: WET testing was removed for the stormwater discharges as WET testing is not a reliable measure of in-stream toxicity; WET testing was also removed for dry-weather discharges as the toxic pollutants present in the discharge are controlled through numeric limitations and are expected to occur intermittently and infrequently.
 - Outfall #001 now contains separate limit sets for wet and dry weather discharges.
 - ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
 - The previous permit limits for outfall #001 were established in error, based on limits for domestic or process wastewater, however, this is usually a stormwater-only outfall. This renewal establishes limits and benchmarks appropriate for stormwater discharges. There will be no changes to industrial activities onsite or the composition of the stormwater discharge as a result of this renewal. The benchmark concentrations and required corrective actions within this permit are protective of the receiving stream's uses to be maintained. The facility is re-authorized to discharge steam condensate from outfall #001 when the treatment system has been found to be overloaded during the peak season.
 - Outfall #001 and #003 stormwater discharges: suspended solids limits for outfall #001 and monitoring for outfall #003 was replaced with benchmarks for total suspended solids.
 - ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
 - The previous permit contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality standards in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires that in instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination and establishing numeric effluent limitations for specific pollutant parameters, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined that the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality.

ANTIDEGRADATION REVIEW:

For process water discharge with new, altered, or expanding discharges, the department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

- ✓ Not applicable; the facility has determined flow from steam condensate/cooling tower bleed which was previously routed to outfall #001a is to be re-routed to outfall #001 under certain circumstances where the treatment plant cannot handle the volume of the water. As this is not a new discharge but was previously permitted, an antidegradation review is not required.

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

BENCHMARKS:

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

Because of the fleeting nature of stormwater discharges, the department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

- ✓ Applicable; this facility has stormwater-only outfalls with benchmark constraints. The benchmarks listed are consistently achieved in stormwater discharges by a variety of other industries with SWPPPs.

BIOSOLIDS & SEWAGE SLUDGE:

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

- ✓ Permittee is not authorized to land apply biosolids.

CHLORINE/BROMINE BEST PROFESSIONAL JUDGMENT LIMITATIONS:

The facility has stated they use a bromine-containing biocide (Spectrus NX1100) for cooling tower operations. Both chlorine and bromine contaminants behave nearly identically in the freshwater environment causing rapid chemical oxidation reactions with available molecules. These halogens are found in the same category of the periodic table, are highly reactive, and neither is found elementally in nature. When determining free available bromine, the analytical method is the same for both chlorine and bromine; although no approved method for bromine is found in 40 CFR 136. Detection for chlorine has interferences of other strongly oxidizing molecules and specifically lists bromine presence as interference if only chlorine is to be measured. All field tests measure chlorine, bromine, and any other oxidizing agents present such as iodate, chlorine dioxide, ozone, permanganate, hydrogen peroxide, and disinfection byproducts such as chlorite and chlorate without indemnity, and provide the summation of these parameters in the colorimetric result. Effluent limitation guidelines and Missouri Water Quality Standards do not include bromine; however, given the inherent similarity, the permit writer has determined bromine and chlorine may be considered the same pollutant therefore they are both covered under this permit. The permit writer has determined using chlorine limitations from Missouri Water Quality Standards

for total recoverable chlorine to be the best course forward at this time to provide coverage for bromine under water quality-based limitations. Part IV provides the determination of the limits.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

✓ Not applicable; the permittee/facility is not currently under Water Protection Program enforcement action.

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The facility has an associated Effluent Limit Guideline (ELG) which is applicable to the wastewater discharge at this facility. The following table shows the limits in the ELG at 40 CFR 414 as applied for SIC code #2869. Should water-quality derived effluent limits be more protective of the receiving water's quality, the WQS will be used as the limiting factor.

§414.73 (Subpart G) Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) The EPA has determined that for existing point sources whose total OCPSF production defined by §414.11 is less than or equal to five (5) million pounds of OCPSF products per year, the BPT level of treatment is the best available technology economically achievable. Accordingly, the Agency is not promulgating more stringent BAT limitations for these point sources.

(b) Except as provided in paragraph (a) of this section and in 40 CFR 125.30 through 125.32, any existing point source that uses end-of-pipe biological treatment and is subject to this subpart must achieve discharges in accordance with §414.91 of this part.

§414.81 (Subpart H) Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, and in 40 CFR 414.11(i) for point sources with production in two or more subcategories, any existing point source subject to this subpart must achieve discharges not exceeding the quantity (mass) determined by multiplying the process wastewater flow subject to this subpart times the concentration listed in the following table.

Effluent Characteristics	BPT Effluent Limitations	
	Maximum for any one day	Maximum for monthly average
BOD ₅	120 mg/L	45 mg/L
TSS	183 mg/L	57 mg/L
pH	6.0-9.0	6.0-9.0

§414.91 (Subpart I) Toxic pollutant effluent limitations and standards for direct discharge point sources that use end-of-pipe biological treatment.

(a) Any point source subject to this subpart must achieve discharges not exceeding the quantity (mass) determined by multiplying the process wastewater flow subject to this subpart times the concentrations in the following table.

Effluent characteristics	Effluent limitations BAT and NSPS ¹	
	Maximum for any one day (µg/L)	Maximum for any monthly average (µg/L)
Acenaphthene	59	22
Acenaphthylene	59	22
Acrylonitrile	242	96
Anthracene	59	22
Benzene	136	37
Benzo(a)anthracene	59	22
3,4-Benzofluoranthene	61	23
Benzo(k)fluoranthene	59	22
Benzo(a)pyrene	61	23
Bis(2-ethylhexyl) phthalate	279	103
Carbon Tetrachloride	38	18
Chlorobenzene	28	15

Effluent characteristics	Effluent limitations BAT and NSPS ¹	
	Maximum for any one day (µg/L)	Maximum for any monthly average (µg/L)
Chloroethane	268	104
Chloroform	46	21
2-Chlorophenol	98	31
Chrysene	59	22
Di-n-butyl phthalate	57	27
1,2-Dichlorobenzene	163	77
1,3-Dichlorobenzene	44	31
1,4-Dichlorobenzene	28	15
1,1-Dichloroethane	59	22
1,2-Dichloroethane	211	68
1,1-Dichloroethylene	25	16
1,2-trans-Dichloroethylene	54	21
2,4-Dichlorophenol	112	39
1,2-Dichloropropane	230	153
1,3-Dichloropropylene	44	29
Diethyl phthalate	203	81
2,4-Dimethylphenol	36	18
Dimethyl phthalate	47	19
4,6-Dinitro-o-cresol	277	78
2,4-Dinitrophenol	123	71
2,4-Dinitrotoluene	285	113
2,6-Dinitrotoluene	641	255
Ethylbenzene	108	32
Fluoranthene	68	25
Fluorene	59	22
Hexachlorobenzene	28	15
Hexachlorobutadiene	49	20
Hexachloroethane	54	21
Methyl Chloride	190	86
Methylene Chloride	89	40
Naphthalene	59	22
Nitrobenzene	68	27
2-Nitrophenol	69	41
4-Nitrophenol	124	72
Phenanthrene	59	22
Phenol	26	15
Pyrene	67	25
Tetrachloroethylene	56	22
Toluene	80	26
Total Chromium	2,770	1,110
Total Copper	3,380	1,450
Total Cyanide	1,200	420
Total Lead	690	320
Total Nickel	3,980	1,690
Total Zinc	2,610	1,050
1,2,4-Trichlorobenzene	140	68
1,1,1-Trichloroethane	54	21
1,1,2-Trichloroethane	54	21
Trichloroethylene	54	21

Effluent characteristics	Effluent limitations BAT and NSPS ¹	
	Maximum for any one day (µg/L)	Maximum for any monthly average (µg/L)
Vinyl Chloride	268	104

§414.91 -continued

(b) In the case of chromium, copper, lead, nickel, zinc, and total cyanide, the discharge quantity (mass) shall be determined by multiplying the concentrations listed in the following table for these pollutants times the flow from metal-bearing waste streams for the metals and times the flow from cyanide bearing waste streams for total cyanide. The metal-bearing waste streams and cyanide-bearing waste streams are defined as those waste streams listed in Appendix A of this part, plus any additional OCPSF process wastewater streams identified by the permitting authority on a case-by-case basis as metal or cyanide bearing based upon a determination that such streams contain significant amounts of the pollutants identified above. Any such streams designated as metal or cyanide bearing must be treated independently of other metal or cyanide bearing waste streams unless the permitting authority determines that the combination of such streams, prior to treatment, with the appendix A waste streams will result in substantial reduction of these pollutants. This determination must be based upon a review of relevant engineering, production, and sampling and analysis information.

✓ The permit writer has determined this facility is subject to an additional subpart.

Because the facility is subject to more than one subpart due to the mixing of different effluents, this permit also requires concentration-based effluent limitations. This facility discharges process wastewater, stormwater, and steam condensate; the permit writer has concluded concentration-based permit effluent limitations are required in addition to mass based limits. Concentration based limits encourage water conservation, minimize the potential for diluting process wastewaters by non-process wastewater, and encourage a more efficient use of water, and pollution prevention. Additionally, for facilities with on-site wastewater treatment systems, the combination of water-reduction technologies and practices and well-operated wastewater treatment will reduce the volume and mass of discharged wastewater pollution after treatment. "EPA strongly supports water conservation and encourages all sectors, including municipal, industrial, and agricultural, to achieve efficient water use. EPA does not intend for its regulations to present a barrier to efficient water use in any industrial sector." See final 2006 Effluent Guidelines Program Plan in 71 FR 76655, December 21, 2006.

Appendix A to Part 414—Non-Complexed Metal-Bearing Waste Streams and Cyanide-Bearing Waste Streams

(abbreviated to show only site specific requirements)

Nickel: Fatty acids, hydrogenated/tallow & coco acids + Hydrogen

✓ To comply with 414.91(b) (Subpart I) above, the permit writer has determined the facility is not required to treat the waste streams (designated as metal or cyanide bearing) be treated independently of other metal or cyanide bearing waste streams; the permit writer has determined this facility only manufactures one product therefore has determined the combination of such streams with the Appendix A waste streams prior to treatment will result in substantial reduction of these pollutants.

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-7.015(1)11, and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ This facility is not required to monitor groundwater for the water protection program.

INDUSTRIAL SLUDGE:

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

✓ Permittee is not authorized to land apply industrial sludge. Sludge is stored in the lagoon then removed by contract hauler. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from the treatment system. Standard conditions Part III is included in this permit to provide guidance to the facility if sludge management should be required.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that 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. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant [40 CFR Part 122.44(d)(1)(iii)].

✓ Applicable; an RPA was conducted on appropriate parameters and was conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request. See Wasteload Allocations (WLA) for Limits in this section.

PARAMETER	DAILY MAXIMUM	MONTHLY AVERAGE	CMC	RWC ACUTE	CCC	RWC CHRONIC	N	MAX/MIN	CV	MF	RP
Aluminum, TR	8250.00	3244.36	750.0	58.43	NA	NA	20	180/0.0015	1.0	3.57	NO
Iron, TR	19591884.26	7502344.89	NA	NA	1000.0	0.13	20	370/0.002	1.1	3.80	NO
TRC	20224.00	9807.16	19.0	0.20	10.0	0.02	50	120/0	0.6	1.76	NO

N/A Not Applicable

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

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.

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).

- ✓ Permit writers use the department's permit writer's manual (<http://dnr.mo.gov/env/wpp/permits/manual/permit-manual.htm>), the EPA's permit writer's manual (<https://www.epa.gov/npdes/npdes-permit-writers-manual>), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding: technology based effluent limitations, effluent limitation guidelines, water quality standards, stream flows and uses, and all applicable site specific information and data gathered by the permittee through discharge monitoring reports and renewal (or new) application sampling. Best professional judgment is based on the experience of the permit writer, cohorts in the department and resources at the EPA, research, and maintaining continuity of permits if necessary. For stormwater permits, the permit writer is required per 10 CSR 6.200(6)(B)2 to consider: A. application and other information supplied by the permittee; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs. Part IV provides specific decisions related to this permit.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOC's are allowed under 40 CFR 122.47 providing certain conditions are met.

- ✓ Not applicable; this permit does not contain a SOC.

SECONDARY CONTAINMENT STRUCTURES SPECIAL CONDITION:

The previous permit's special conditions required sampling of total petroleum hydrocarbons (TPH) under the decision model to discharge stormwater having a sheen in secondary containment. The special condition has been revised in all permits beginning in 2015 to include oil and grease and BTEX (benzene, toluene, ethylbenzene, and xylene) sampling of the potentially contaminated stormwater in secondary containment. This change was due to 1) no water quality standards for TPH; and 2) there are no approved methods found in 40 CFR 136 for TPH. The facility need only sample for these constituents prior to release when a sheen or petroleum odor is present.

SPILL REPORTING:

Per 10 CSR 24-3.010, any emergency involving a hazardous substance must be reported to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <http://dnr.mo.gov/env/esp/spillbill.htm>

STORMWATER PERMITTING:

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

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)4.B.]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above staff are unable to perform statistical Reasonable Potential Analysis (RPA). However, staff will use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], 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.

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

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

✓ Applicable; a SWPPP shall be developed and implemented for this facility.

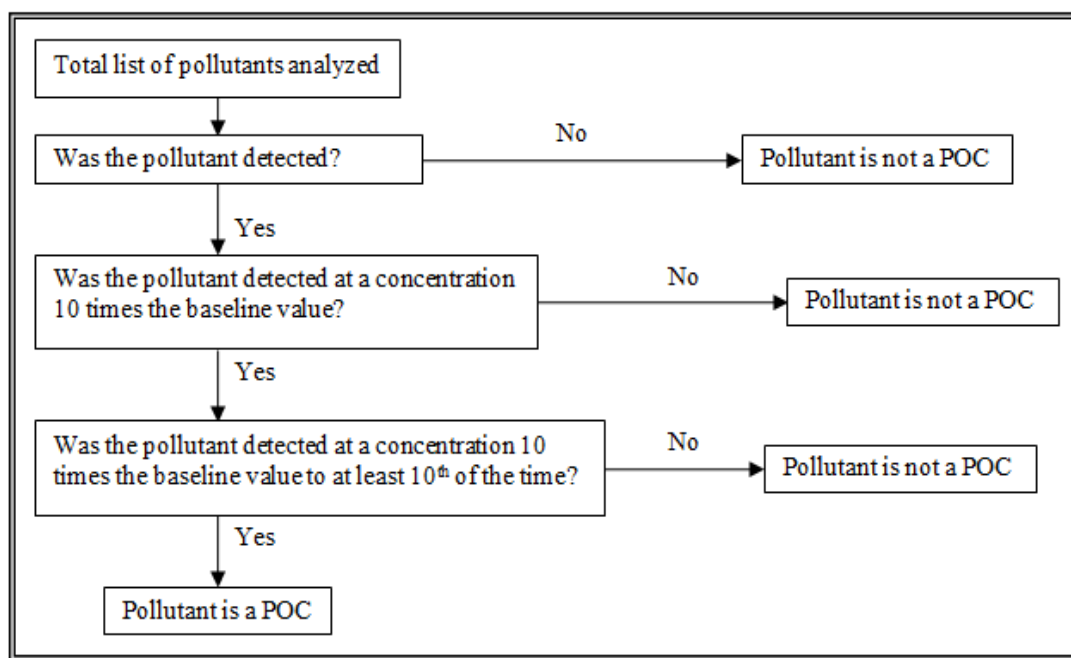
TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

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

Case-by-case TBELs are developed pursuant to CWA section 402(a)(1), which authorizes the administrator to issue a permit meeting either, 1) all applicable requirements developed under the authority of other sections of the CWA (e.g., technology-based treatment standards, water quality standards) or, 2) before taking the necessary implementing actions related to those requirements, “such conditions as the administrator determines are necessary to carry out the provisions of this Act.” The regulation at §125.3(c)(2) specifically cite this section of the CWA, stating technology-based treatment requirements may be imposed in a permit “on a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable.” Further, §125.3(c)(3) indicates “where promulgated effluent limitations guidelines only apply to certain aspects of the discharger’s operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis to carry out the provisions of the act.” When establishing case-by-case effluent limitations using best professional judgment, the permit writer should cite in the fact sheet or statement of basis both the approach used to develop the limitations, discussed below, and how the limitations carry out the intent and requirements of the CWA and the NPDES regulations.

Baselines to determine contaminants of concern are found in the *Development Document for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry – Final* (EPA 821-R-00-020; August 2000). The baselines represent the treatable concentration of model technology which would effectually treat a pollutant. Chapter 6 Table 6-1 directs the permit writer to multiply the baseline by ten to determine if the parameter is a pollutant of concern. The following table determines the parameters for which a TBEL must be considered; baseline values are retrieved from chapter six.

POC = Pollutants of Concern



When developing TBELs for industrial facilities, the permit writer must consider all applicable technology standards and requirements for all pollutants discharged above baseline level. Without applicable effluent guidelines for the discharge or pollutant, permit writers must identify any needed TBELs on a case-by-case basis, in accordance with the statutory factors specified in CWA sections

301(b)(2) and 304(b). The site-specific TBELs reflect the BPJ of the permit writer, taking into account the same statutory factors EPA would use in promulgating a national effluent guideline regulation, but they are applied to the circumstances relating to the applicant. The permit writer also should identify whether state laws or regulations govern TBELs and might require more stringent performance standards than those required by federal regulations. In some cases, a single permit could have TBELs based on effluent guidelines, best professional judgment, state law, and WQBELs based on water quality standards.

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

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

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

For BPT requirements (all pollutants)

- The age of equipment and facilities involved*
- The process(es) employed*
- The engineering aspects of the application of various types of control techniques*
- Process changes*
- Non-water quality environmental impact including energy requirements*
- The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application

For BCT requirements (conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits
- The comparison of the cost and level of reduction of such pollutants from the discharge of POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources

For BAT requirements (toxic and non-conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The cost of achieving such effluent reduction

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

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

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

VARIANCE:

Per the Missouri Clean Water Law §644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

- ✓ Not applicable; this permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving waters, then the other must be used.

- ✓ Applicable; wasteload allocations were calculated where relevant using water quality criteria or water quality model results and by applying the dilution equation below:

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

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

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

WLA MODELING:

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

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

WATER QUALITY STANDARDS:

Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, 40 CFR 122.44(d)(1) directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including state narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method to determine discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water.

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

Part IV. EFFLUENT LIMITS DETERMINATION

Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required under 40 CFR 122.45(d)(1) for continuous discharges not from a POTW.

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

- (A)** Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates putrescent wastewater would be discharged from the facility.
 - For all process water outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses; technology limitations provide these limits and are more stringent than water quality standards found in 10 CSR 20-7.031 Table A.
- (B)** Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- For outfall #003, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal or during prior sampling for DMR requirements for these outfalls indicates oil will be present in sufficient amounts to impair beneficial uses.
 - For outfalls #001 and #002, there is RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses; data provided by the permittee show RP for oil and grease.
 - For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses
- (C)** Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly color or turbidity will be present in sufficient amounts to impair beneficial uses.
 - For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates offensive odor will be present in sufficient amounts to impair beneficial uses.
- (D)** Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
- This facility has numeric effluent for specific toxic pollutants where appropriate and are discussed below in Derivation and Discussion of Limits.

- The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants that could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.

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

- The permit writer believes this is the same criteria as (D).

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

- The permit writer believes this is the same criteria as (D).

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

- For all outfalls, there is no RP for physical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates physical changes that would impair the natural biological community.
- For outfall #002, there is RP for chemical changes that would impair the natural biological community because DMR data and sampling for permit renewal show RP for aluminum and ammonia therefore limits are imposed for these parameters; limitations on WET testing provide protection for any synergistic effects discharged pollutants may incur.
- For outfalls #001 and #003, there is no RP for chemical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates chemical changes that would impair the natural biological community.
- For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates hydrologic changes that would impair the natural biological community.

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

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

PROCESS WASTEWATER: OUTFALL #002 – MAIN FACILITY OUTFALL**EFFLUENT LIMITATIONS TABLE FOR WATER QUALITY #1:**

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW (EFFLUENT)	MGD	*	*	*	ONCE/DAY	ONCE/MONTH	24 Hr. Tot
FLOW (EFFLUENT)	cfs	*	*	*	ONCE/DAY	ONCE/MONTH	MEASURED
TEMPERATURE (EFFLUENT)	°F	*	*	*	ONCE/DAY	ONCE/MONTH	MEASURED
TEMPERATURE (STREAM)	°F	*	*	*	ONCE/DAY	ONCE/MONTH	CALCULATION
TEMPERATURE (MIXED)	°F	MONTHLY LIMITS - SEE TABLE BELOW			ONCE/DAY	ONCE/MONTH	CALCULATION
TEMPERATURE (CHANGE) ΔT	°F	5	*	5, 5	ONCE/DAY	ONCE/MONTH	CALCULATION
TEMPERATURE –TIME OVER T _{cap}	hours	87.6 ANNUAL TOTAL		SAME	CONTINUOUS	ONCE/YEAR	CALCULATION
CONVENTIONAL							
CHLORINE, TOTAL RESIDUAL	µg/L	*	*	17, 8	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	15	10	15, 10	ONCE/MONTH	ONCE/MONTH	GRAB
METALS							
TIN, TR	µg/L	*	*	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
NUTRIENTS							
AMMONIA AS N	mg/L	*	*	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
NITROGEN, TOTAL N (TN)	mg/L	*	*	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER							
CHLORIDE	mg/L	*	*	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
SULFATE	mg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHLORIDE PLUS SULFATE	mg/L	*	*	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
WET TEST - ACUTE	TUa	*	-	PASS/FAIL	ONCE/YEAR	ONCE/YEAR	COMPOSITE

EFFLUENT LIMITATIONS TABLE #2:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS ¥	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
414.81 REQUIREMENTS							
BOD ₅	mg/L	120	45	*, *	ONCE/MONTH	ONCE/MONTH	COMPOSITE
BOD ₅	lbs/day	60.0	22.5	15, 5.6	ONCE/MONTH	ONCE/MONTH	COMPOSITE
pH ‡	SU	6.0 TO 9.0	6.0 TO 9.0	6.5 TO 9.0	CONTINUOUS	ONCE/MONTH	CONTINUOUS
pH –TIME EXCURSION ‡	hours	1.0	7.43	SAME	CONTINUOUS	ONCE/MONTH	CALCULATED
TSS	mg/L	183	57	*, *	ONCE/MONTH	ONCE/MONTH	COMPOSITE
TSS	lbs/day	91.6	28.5	36.4, 9.4	ONCE/MONTH	ONCE/MONTH	COMPOSITE

EFFLUENT LIMITATIONS TABLE #3:

PARAMETERS	UNIT	DAILY MAX	Monthly Avg	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
414.91 REQUIREMENTS							
Acenaphthene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Acenaphthylene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Acrylonitrile	µg/L	242	96	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Anthracene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Benzene	µg/L	136	37	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Benzo(a)anthracene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
3,4-Benzofluoranthene	µg/L	61	23	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Benzo(k)fluoranthene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Benzo(a)pyrene	µg/L	61	23	NEW	ONCE/MONTH	ONCE/MONTH	GRAB

PARAMETERS	UNIT	DAILY MAX	Monthly Avg	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
Bis(2-ethylhexyl) phthalate	µg/L	279	103	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Carbon Tetrachloride	µg/L	38	18	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Chlorobenzene	µg/L	28	15	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Chloroethane	µg/L	268	104	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Chloroform	µg/L	46	21	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2-Chlorophenol	µg/L	98	31	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Chrysene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Di-n-butyl phthalate	µg/L	57	27	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-Dichlorobenzene	µg/L	163	77	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,3-Dichlorobenzene	µg/L	44	31	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,4-Dichlorobenzene	µg/L	28	15	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,1-Dichloroethane	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-Dichloroethane	µg/L	211	68	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,1-Dichloroethylene	µg/L	25	16	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-trans-Dichloroethylene	µg/L	54	21	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dichlorophenol	µg/L	112	39	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-Dichloropropane	µg/L	230	153	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,3-Dichloropropylene	µg/L	44	29	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Diethyl phthalate	µg/L	203	81	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dimethylphenol	µg/L	36	18	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Dimethyl phthalate	µg/L	47	19	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
4,6-Dinitro-o-cresol	µg/L	277	78	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dinitrophenol	µg/L	123	71	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dinitrotoluene	µg/L	285	113	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2,6-Dinitrotoluene	µg/L	641	255	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Ethylbenzene	µg/L	108	32	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Fluoranthene	µg/L	68	25	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Fluorene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Hexachlorobenzene	µg/L	28	15	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Hexachlorobutadiene	µg/L	49	20	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Hexachloroethane	µg/L	54	21	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Methyl Chloride	µg/L	190	86	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Methylene Chloride	µg/L	89	40	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Naphthalene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Nitrobenzene	µg/L	68	27	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
2-Nitrophenol	µg/L	69	41	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
4-Nitrophenol	µg/L	124	72	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Phenanthrene	µg/L	59	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Phenol	µg/L	26	15	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Pyrene	µg/L	67	25	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Tetrachloroethylene	µg/L	56	22	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Toluene	µg/L	80	26	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Chromium, TR	µg/L	2,770	1,110	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Copper, TR	µg/L	3,380	1,450	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Cyanide, Total	µg/L	1,200	420	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Lead, TR	µg/L	690	320	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Nickel, TR	µg/L	3,980	1,690	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Zinc, TR	µg/L	2,610	1,050	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,2,4-Trichlorobenzene	µg/L	140	68	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
1,1,1-Trichloroethane	µg/L	54	21	NEW	ONCE/MONTH	ONCE/MONTH	GRAB

PARAMETERS	UNIT	DAILY MAX	Monthly Avg	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
1,1,2-Trichloroethane	µg/L	54	21	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Trichloroethylene	µg/L	54	21	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
Vinyl Chloride	µg/L	268	104	NEW	ONCE/MONTH	ONCE/MONTH	GRAB

EFFLUENT LIMITATIONS TABLE #4:

PARAMETERS	UNIT	DAILY MAX	Monthly Avg	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
414.91 REQUIREMENTS							
Acenaphthene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Acenaphthylene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Acrylonitrile	lbs/day	0.121	0.048	0.03, 0.012	ONCE/MONTH	ONCE/MONTH	GRAB
Anthracene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Benzene	lbs/day	0.068	0.019	0.017, 0.005	ONCE/MONTH	ONCE/MONTH	GRAB
Benzo(a)anthracene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
3,4-Benzofluoranthene	lbs/day	0.031	0.012	0.008, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Benzo(k)fluoranthene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Benzo(a)pyrene	lbs/day	0.031	0.012	0.008, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Bis(2-ethylhexyl) phthalate	lbs/day	0.140	0.052	0.035, 0.013	ONCE/MONTH	ONCE/MONTH	GRAB
Carbon Tetrachloride	lbs/day	0.019	0.009	0.005, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
Chlorobenzene	lbs/day	0.014	0.008	0.004, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
Chloroethane	lbs/day	0.134	0.052	0.034, 0.013	ONCE/MONTH	ONCE/MONTH	GRAB
Chloroform	lbs/day	0.023	0.011	0.006, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
2-Chlorophenol	lbs/day	0.049	0.016	0.012, 0.004	ONCE/MONTH	ONCE/MONTH	GRAB
Chrysene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Di-n-butyl phthalate	lbs/day	0.029	0.014	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-Dichlorobenzene	lbs/day	0.082	0.039	0.02, 0.01	ONCE/MONTH	ONCE/MONTH	GRAB
1,3-Dichlorobenzene	lbs/day	0.022	0.016	0.003, 0.004	ONCE/MONTH	ONCE/MONTH	GRAB
1,4-Dichlorobenzene	lbs/day	0.014	0.008	0.004, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
1,1-Dichloroethane	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-Dichloroethane	lbs/day	0.106	0.034	0.026, 0.009	ONCE/MONTH	ONCE/MONTH	GRAB
1,1-Dichloroethylene	lbs/day	0.013	0.008	0.003, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-trans-Dichloroethylene	lbs/day	0.027	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dichlorophenol	lbs/day	0.056	0.020	0.014, 0.005	ONCE/MONTH	ONCE/MONTH	GRAB
1,2-Dichloropropane	lbs/day	0.115	0.077	0.029, 0.019	ONCE/MONTH	ONCE/MONTH	GRAB
1,3-Dichloropropylene	lbs/day	0.022	0.015	0.006, 0.004	ONCE/MONTH	ONCE/MONTH	GRAB
Diethyl phthalate	lbs/day	0.102	0.041	0.025, 0.01	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dimethylphenol	lbs/day	0.018	0.009	0.014, 0.005	ONCE/MONTH	ONCE/MONTH	GRAB
Dimethyl phthalate	lbs/day	0.024	0.010	0.006, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
4,6-Dinitro-o-cresol	lbs/day	0.139	0.039	0.035, 0.01	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dinitrophenol	lbs/day	0.062	0.036	0.015, 0.009	ONCE/MONTH	ONCE/MONTH	GRAB
2,4-Dinitrotoluene	lbs/day	0.143	0.057	0.036, 0.014	ONCE/MONTH	ONCE/MONTH	GRAB
2,6-Dinitrotoluene	lbs/day	0.321	0.128	0.08, 0.032	ONCE/MONTH	ONCE/MONTH	GRAB
Ethylbenzene	lbs/day	0.054	0.016	0.014, 0.004	ONCE/MONTH	ONCE/MONTH	GRAB
Fluoranthene	lbs/day	0.034	0.013	0.009, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Fluorene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Hexachlorobenzene	lbs/day	0.014	0.008	0.004, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
Hexachlorobutadiene	lbs/day	0.025	0.010	0.006, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Hexachloroethane	lbs/day	0.027	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Methyl Chloride	lbs/day	0.095	0.043	0.024, 0.011	ONCE/MONTH	ONCE/MONTH	GRAB

PARAMETERS	UNIT	DAILY MAX	Monthly Avg	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
Methylene Chloride	lbs/day	0.045	0.020	0.011, 0.005	ONCE/MONTH	ONCE/MONTH	GRAB
Naphthalene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Nitrobenzene	lbs/day	0.034	0.014	0.009, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
2-Nitrophenol	lbs/day	0.035	0.021	0.009, 0.005	ONCE/MONTH	ONCE/MONTH	GRAB
4-Nitrophenol	lbs/day	0.062	0.036	0.016, 0.009	ONCE/MONTH	ONCE/MONTH	GRAB
Phenanthrene	lbs/day	0.030	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Phenol	lbs/day	0.013	0.008	0.003, 0.002	ONCE/MONTH	ONCE/MONTH	GRAB
Pyrene	lbs/day	0.034	0.013	0.008, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Tetrachloroethylene	lbs/day	0.028	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Toluene	lbs/day	0.040	0.013	0.01, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Chromium, TR	lbs/day	1.386	0.555	0.347, 0.139	ONCE/MONTH	ONCE/MONTH	GRAB
Copper, TR	lbs/day	1.691	0.726	0.423, 0.181	ONCE/MONTH	ONCE/MONTH	GRAB
Cyanide, Total	lbs/day	0.600	0.210	0.15, 0.053	ONCE/MONTH	ONCE/MONTH	GRAB
Lead, TR	lbs/day	0.345	0.160	0.086, 0.04	ONCE/MONTH	ONCE/MONTH	GRAB
Nickel, TR	lbs/day	1.992	0.846	0.498, 0.211	ONCE/MONTH	ONCE/MONTH	GRAB
Zinc, TR	lbs/day	1.306	0.525	0.327, 0.131	ONCE/MONTH	ONCE/MONTH	GRAB
1,2,4-Trichlorobenzene	lbs/day	0.070	0.034	0.018, 0.009	ONCE/MONTH	ONCE/MONTH	GRAB
1,1,1-Trichloroethane	lbs/day	0.027	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
1,1,2-Trichloroethane	lbs/day	0.027	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Trichloroethylene	lbs/day	0.027	0.011	0.007, 0.003	ONCE/MONTH	ONCE/MONTH	GRAB
Vinyl Chloride	lbs/day	0.134	0.052	0.034, 0.013	ONCE/MONTH	ONCE/MONTH	GRAB

* Monitoring requirement only

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

NEW Parameter not established in previous state operating permit.

¥ All previous requirements for §§ 414.71 and 414.91 were in lbs/day.

TR Total Recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD). Weekday monitoring increased to daily monitoring to comply with temperature limitation derivation procedures.

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. The conditions and names of compliance points have changed slightly although compliance values have not changed since last permit issuance.

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. 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.

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}) $T_{cap} + 3^{\circ}\text{F}$.

Both compliance requirements (ΔT and $T_{emz (cap/dev)}$) 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.

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 $^{\circ}\text{F}$
- T_e : the effluent temperature and reported in $^{\circ}\text{F}$. 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 (formerly T_{cap}); used to determine compliance with numeric permit limitations
- T_{cap} and T_{dev} : thermal compliance points for the facility (formerly T_{cap} and T_{max})

Compliance Determination with $\Delta T^{\circ}\text{F}$ 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 $\Delta 5^{\circ}\text{F}$. 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 $^{\circ}\text{F}$	Temperature Deviation T_{dev} in $^{\circ}\text{F}$	T_{cap} in $^{\circ}\text{F}$	Temperature Deviation T_{dev} in $^{\circ}\text{F}$
JANUARY	45	48	50	53
FEBRUARY	45	48	50	53
MARCH	57	60	60	63

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
APRIL	68	71	70	73
MAY	78	81	80	83
JUNE	86	89	87	90
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. See table for data entry assistance in Part V Sampling and Reporting Requirements.

CONVENTIONAL:

Chlorine, Total Residual (TRC)

Monitoring without limits. Previous permit limited this parameter at the shared outfall without mixing considerations which should have been afforded; previous permit limits were 17 µg/L daily maximum and 8 µg/L monthly average with an ML of 130. The facility reported between 5 and 100 µg/L. Quarterly monitoring needed to determine site specific reasonable potential.

Oil & Grease

15 mg/L daily maximum, 10 mg/L monthly average. Previous permit limited this parameter at the shared outfall; limits continued at site specific outfall. Conventional pollutant, in accordance with 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L monthly average (chronic standard). The daily maximum was calculated using the *Technical Support Document for Water*

Quality-Based Toxics Control (EPA/505/2-90-001). Section 5.4.2 indicates the waste load allocation can be set to the chronic standard. When the chronic standard is multiplied by 1.5, the daily maximum can be calculated. Hence, $10 * 1.5 = 15$ mg/L for the daily maximum.

ELG §414 SUBPART H; 414.81:

Biochemical Oxygen Demand 5-day (BOD₅)

Daily maximum is 120 mg/L and 16.8 lbs/day; monthly average is 45 mg/L and 6.3 lbs/day per 40 CFR 414.81. The facility reported between 6 and 190 mg/L, and 0.147 and 14.26 lbs/day. Wastewater flow is 0.016772 MGD. There are no water quality limitations for this parameter. Weekly sampling required, continued from previous permit. The previous permit limits were in pounds per day only, however, as discussed in Part III; ELG above, the permit writer has determined the facility is required to have concentration-based and mass-based limitations.

Total Suspended Solids (TSS)

Daily maximum is 183 mg/L and 25.6 lbs/day; monthly average is 57 mg/L and 8.0 lbs/day per 40 CFR 414.81. The facility reported between 0.2775 and 18.3 lbs/day. Wastewater flow is 0.016772 MGD. There are no water quality limitations for this parameter. Weekly sampling required, continued from previous permit. The previous permit limits were in pounds per day only, however, as discussed in Part III; ELG above, the permit writer has determined the facility is required to have concentration-based and mass-based limitations.

pH

6.0 to 9.0 SU. Technology based limits are applicable to this outfall. Previous permit limits were 6.5 to 9.0 with continuous monitoring however, to implement continuous monitoring with allowable excursions in a permit, the discharge must have a technology limit therefore the lower limit of 6.0 applies. While a minimum of 6.5 is more protective of receiving waters, the permit writer notes the large mixing area afforded by the Mississippi River and can assimilate the technology pH limit without undue consequences. Excursion times are limited to 7 hours and 26 minutes (7.43 hours) per month and a maximum of 60 minutes per individual excursion per 40 CFR 401.17 and must be tracked using continuous measurement.

ELG §414 SUBPART I; 414.91:

See Effluent Limitation Tables #3 and #4.

Pounds per day calculations for limitations were completed using the formula: $\text{##}\mu\text{g/L}/1000 * 8.34 * 0.06$ where 8.34 converts pounds of water and the flow of process wastewater is 0.06 MGD. The previous permit did not require reporting in $\mu\text{g/L}$; will be required henceforth to determine RP for all the ELG parameters. The specified pollutants are found in the Effluent Limitation Guideline for this facility. While the permit writer must compare ELGs to water quality standards, the permit writer has determined, since there are not enough concentration-based data available at this time (as the previous permit was annual monitoring), to determine RP. After data has been collected over a permit cycle, the subsequent renewal will evaluate each parameter as necessary to compare to reasonable potential to cause or contribute to pollution of waters of the state. A schedule of compliance is not afforded for these pollutants of concern as they are required to be met upon permit issuance per 40 CFR 401.12(b). Sampling for these parameters occurred once per year in the previous permit. However, the permit writer has determined monthly sampling is required. Determination was based on 10 CSR 20-7.015(2)(C)1. as the facility's design flow is 0.564 which is roughly 11 times the annual rate established for 0.05 MGD. For permit brevity, the ELG requirements were copied directly into the table. The previous permit limits were in pounds per day only, however, as discussed in Part III; ELG above, the permit writer has determined the facility is also required to have concentration-based limitations. The facility will use the flow for the day of sampling to determine pounds per day.

METALS:

Aluminum

Previous permit required monitoring for this parameter. There is no RP for this parameter and there is no technology limit for this parameter. Monitoring not continued.

Barium, Total Recoverable

Previous permit required monitoring for this parameter. There is no RP for this parameter and there is no technology limit for this parameter. Monitoring not continued.

Iron, Total Recoverable

The previous permit required monitoring for this parameter. There is no RP for this parameter and there is no technology limit for this parameter. Monitoring not continued.

Tin, Total Recoverable

The permittee reported a product containing tin would be used in the process. Quarterly monitoring required to determine water quality reasonable potential and the prospective need for technology based limitations in the future.

NUTRIENTS:

Ammonia, Total as Nitrogen

Quarterly monitoring required to determine reasonable potential on a site specific basis.

Nitrogen, Total N (TN)

Quarterly monitoring required to determine reasonable potential on a site specific basis.

OTHER:

Delta BHC

The previous permit required monitoring of this parameter; historically this parameter was included for the discharges from the former Ashland/Hercules (MO-0000311); this discharge is no longer present at the site. The permittee did not report this parameter present for their site. Monitoring not continued.

Sulfate/ Chloride/ Chloride plus Sulfate

Previous permit required monitoring for sulfate only. Currently, not enough data exists to determine if there is reasonable potential for this group of parameters. The EPA inspection in 2015 showed there were high sulfates in the discharge at shared outfall #001. To determine the facility's contribution of sulfate to the discharge, the permit writer is requiring continued monitoring at outfall #002. The Department needs additional information to determine reasonable potential. The permittee will sample quarterly for sulfate and chlorides and report the results to the department as chloride, sulfate, and chloride plus sulfate.

Whole Effluent Toxicity (WET) Test, Acute

Bi-annual monitoring continued from previous permit and is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream. Previous permit limits of pass/fail are not continued at this time; the permittee will now report in Toxic Units. The minutia of the tests are spelled out in special conditions. For classified permanent streams with other than default mixing considerations, the Allowable Effluent Concentration (AEC)% is continued from the previous permit at 10%. 10 CSR 20-7.015((9)(L)4.A. states the dilution series must be proportional. Each dilution was determined by multiplying or dividing 2 from the AEC and then each consecutive value. The dilution series is: 2.5%, 5%, 10%, 20%, and 40%; continued from the previous permit.

OUTFALLS #001 AND #003 – STORMWATER ONLY (WET WEATHER)**EFFLUENT LIMITATIONS TABLE:**

PARAMETERS	UNIT	DAILY MAXIMUM LIMIT	BENCH- MARK	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	24 HR. ESTIMATE
PRECIPITATION –OUTFALL #001 ONLY	inches	*	-	SAME	ONCE/QUARTER	ONCE/QUARTER	24 HR. TOTAL
CONVENTIONAL							
BOD ₅	mg/L	**	60	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
COD	mg/L	**	120	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	**	10	15, 10	ONCE/QUARTER	ONCE/QUARTER	GRAB
pH ‡	SU	6.5 TO 9.0	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
TSS	mg/L	**	100	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
METALS							
COPPER, TR	µg/L	**	36	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB

* Monitoring requirement only

** Monitoring with associated benchmark

‡ The facility will report the minimum and maximum pH values; pH is not to be averaged

NEW Parameter not established in previous operating permit

TR Total Recoverable

DERIVATION AND DISCUSSION OF LIMITS:**PHYSICAL:****Flow**

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD).

Precipitation

Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters. It is not necessary to report all days of precipitation during the quarter because of the readily available on-line data. The facility will report the data for the entire site with outfall #001 (previously was outfall #003 only; this change is to assure the data is reported since outfall #003 has not yet been built and the facility can report “no discharge” for the outfall).

CONVENTIONAL:**Biochemical Oxygen Demand 5-day (BOD₅)**

Monitoring is included using the permit writer’s best professional judgment; new parameter. There is no water quality standard for BOD₅; however, increased oxygen demand may impact instream water quality. BOD₅ is also a valuable indicator parameter. BOD₅ monitoring allows the permittee to identify increases in BOD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in BOD₅ may indicate a need for maintenance or improvement of BMPs. Additionally, a benchmark value will be implemented for this parameter. The benchmark value will be set at 60 mg/L based on half of the COD benchmark value.

Chemical Oxygen Demand (COD)

Monitoring is included using the permit writer’s best professional judgment. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of

BMPs. Additionally, a benchmark value will be implemented for this parameter. The benchmark value will be set at 120 mg/L. This value falls within the range of values implemented in other permits that have similar industrial activities.

Oil & Grease

Monitoring with a daily maximum benchmark of 10 mg/L. Previous limits on outfall #001 were 15 mg/L daily maximum and 10 mg/L monthly average; monitoring only on outfall #003. There is no RP for the stormwater at this site to cause or contribute to in-stream exceedances therefore this parameter may receive a benchmark. 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 toluene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as "oil and grease". Per 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR 20: 7.031 (4). Ten mg/L is the level at which sheen is expected to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits.

pH

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. This limitation is continued from the previous permit at both outfalls #001 and #003.

Settleable Solids

The previous permit included limits for SS at outfall #001 and monitoring at outfall #003. The permit writer has determined TSS is a better indicator of solids leaving the site in stormwater therefore TSS replaces SS.

Total Suspended Solids (TSS)

There is no water quality standard for TSS and the facility has not been monitoring this parameter at either outfall #001 or #003 but previously had limits for settleable solids. The permit writer has determined TSS is more appropriate than SS to the discharges of stormwater at this facility. Sediment discharges can negatively impact aquatic life habitat. TSS is a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS that may indicate uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. This permit establishes a benchmark for copper therefore total suspended solids should be included for monitoring. A benchmark value will be implemented for this parameter. The benchmark value will be set at 100 mg/L. This value is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

METALS:

Copper, Total Recoverable

Previous permit required monitoring for copper at outfall #001 and #001a due to the inclusion of steam condensate at that outfall. The permittee reported from 2 to 69 µg/L during the last five years. The facility reported 36 µg/L for August and September 2016, 45 µg/L for August 2013, and 69 µg/L in November 2015. It is unknown if these particular samples were obtained during a wet or dry weather event. The benchmark will be based on site-specific data; the 95th percentile of the data is 36 µg/L which will be established as the benchmark. Benchmark required at both stormwater outfalls to determine if any other steam condensate is entering the site and being entrained in stormwater.

OTHER:

Whole Effluent Toxicity (WET) Test, Acute

Previous permit conditions required WET testing of outfall #001A. However, the permit writer has determined this facility's stormwater is not subject to whole effluent toxicity testing.

OUTFALL #001- DRY WEATHER

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAXIMUM LIMIT	MONTHLY AVERAGE	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	ONCE/WEEK €	ONCE/MONTH €	24 HR. ESTIMATE
CONVENTIONAL							
COD	mg/L	*	*	NEW	ONCE/WEEK €	ONCE/MONTH €	GRAB
CHLORINE/BROMINE, TOTAL RESIDUAL Φ	µg/L	17	8	17, 8	ONCE/WEEK €	ONCE/MONTH €	GRAB
OIL & GREASE	mg/L	15	10	15, 10	ONCE/WEEK €	ONCE/MONTH €	GRAB
pH ‡	SU	6.5 TO 9.0	6.5 TO 9.0	6.5 TO 9.0	ONCE/WEEK €	ONCE/MONTH €	GRAB
TSS	mg/L	100	30	NEW	ONCE/WEEK €	ONCE/MONTH €	GRAB
METALS							
COPPER, TR	µg/L	25.0	12.5	NEW	ONCE/WEEK €	ONCE/MONTH €	GRAB

* Monitoring requirement only

** Monitoring with associated benchmark

‡ The facility will report the minimum and maximum pH values; pH is not to be averaged

NEW Parameter not established in previous operating permit

TR Total Recoverable

€ When the facility diverts cooling tower bleed/ steam condensate to this outfall sampling for the following parameters must occur weekly during discharge. Sampling must occur during times when there is no influence of precipitation,

Φ This permit contains a Total Residual Chlorine/Bromine (TRC/B) limit. See permit.

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD).

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring is included using the permit writer's best professional judgment. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs.

Chlorine/Bromine, Total Residual (TRC)

Daily maximum 17 µg/L, monthly average 8 µg/L. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background = 0 µg/L. See Part III: CHLORINE/BROMINE BEST PROFESSIONAL JUDGMENT section. During the writing of this renewal, the permittee indicated they discharged cooling tower discharges through outfall #001 and both results were 100 µg/L; below the ML established for this parameter.

Acute WLA: $C_e = 19 \mu\text{g/L}$

Chronic WLA: $C_e = 10 \mu\text{g/L}$

LTA_a: $19 (0.321) = 6.1 \mu\text{g/L}$

LTA_c: $10 (0.527) = 5.3 \mu\text{g/L}$

Use most protective number of LTA_a or LTA_c.

MDL: $5.3 (3.11) = 16.5 \mu\text{g/L}$

AML: $5.3 (1.55) = 8.2 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]

[CV = 0.6, 99th Percentile]

[CV = 0.6, 99th Percentile]

[CV = 0.6, 95th Percentile, n = 4]

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

Oil & Grease

Conventional pollutant, in accordance with 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L monthly average (chronic standard). The daily maximum was calculated using the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001). Section 5.4.2 indicates the waste load allocation can be set to the chronic standard. When the chronic standard is multiplied by 1.5, the daily maximum can be calculated. Hence, $10 * 1.5 = 15$ mg/L for the daily maximum.

pH

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. This limitation is continued from the previous permit.

Total Suspended Solids (TSS)

Limits are 100 mg/L daily maximum and 30 mg/L monthly average. Limits included using the permit writer's best professional judgment in applying 40 CFR 423.12 BPT limitations for low volume waste sources. There is no water quality standard for TSS; this parameter replaces settleable solids. TSS is a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS that may indicate uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. In order to determine appropriate effluent limitations, staff took into consideration (1) what has been used for past effluent limit determination from steam condensate discharges and (2) is there any similar ELG that can be used or should new limitations (with the potential for new pollutants) be developed. Low volume waste sources can be considered any waste source at plants with steam condensate or heating and cooling discharges but typically include: water treatment systems, cooling tower basin cleaning wastes, and recirculating house service water systems. The steam condensate system at this facility is similar enough to what is described as low volume waste sources to apply these limitations. There are no applicable ELGs for steam condensate discharges at organic chemical facilities. Because there are no available ELGs, staff must consider the use of Best Professional Judgment (BPJ) for the development of effluent limitations, as per 40 CFR Part 125.3.

METALS:

General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the stream class and uses.

Copper, Total Recoverable

25.0 µg/L daily maximum and 12.5 µg/L monthly average. The facility has amended the permit application to include discharges of steam condensate/cooling system bleed on an as-needed basis. The previous permit contained sampling and limitations for copper but did not require dry weather sampling. The permittee reported from 2 to 45 µg/L during the last five years. Most values were below 13 µg/L however the facility reported 45 µg/L for August 2013; limits required and achievable, no SOC.

Acute AQL WQS:	$e^{(0.9422 * \ln 162 - 1.7003)} * 0.960 = 21.166$	[at Hardness 162]
Chronic AQL WQS:	$e^{(0.8545 * \ln 162 - 1.7020)} * 0.960 = 13.525$	[at Hardness 162]
Acute TR WQS:	$21.163 \div 0.96 = 22.048$	[Total Recoverable Conversion]
Chronic TR WQS:	$13.525 \div 0.96 = 14.088$	[Total Recoverable Conversion]
Acute WLA:	$C_e = ((0.0186 + 0.0025) * 22.048) \div 0.0186$	$C_e = 25.012 \text{ µg/L}$
Chronic WLA:	$C_e = ((0.0186 + 0.025) * 14.088) \div 0.0186$	$C_e = 33.024 \text{ µg/L}$
LTA _a :	$25.012 (0.321) = 8.031$	[CV = 0.6, 99 th Percentile]
LTA _c :	$33.024 (0.527) = 17.418$	[CV = 0.6, 99 th Percentile]
Use most protective number of LTA _a or LTA _c .		
MDL:	$8.031 (3.11) = 25.012 = 25.0 \text{ µg/L}$	[CV = 0.6, 99 th Percentile]
AML:	$8.031 (1.55) = 12.467 = 12.5 \text{ µg/L}$	[CV = 0.6, 95 th Percentile, n = 4]

OTHER:**Whole Effluent Toxicity (WET) Test**

Previous permit conditions prior to recent permit modifications required WET testing of outfall #001a. However, the permit writer has determined the pollutants present in the discharge are controlled through effluent limitations for total residual chlorine/bromine, total recoverable copper, and total suspended solids therefore WET testing is not required 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 of the NPDES permit, using the procedures in paragraph (d)(1)(ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards.

Part V. SAMPLING AND REPORTING REQUIREMENTS:

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

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

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

SAMPLING FREQUENCY JUSTIFICATION:

Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

SAMPLING TYPE JUSTIFICATION:

Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine/bromine, free available chlorine/bromine, hexavalent chromium, dissolved oxygen, total phosphorus, and volatile organic samples.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations 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 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 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 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the department. Table A at 10 CFR 20-7.031 shows water quality standards.

Part VI. ADMINISTRATIVE REQUIREMENTS

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

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together and all expire in the same fiscal year. <http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf>. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

- ✓ If the Department issues the permit at this time, the effective period of the permit would be less than one year in length. To ensure efficient use of Department staff, reduce the Department's permitting back log and to provide better service to the permittee by avoiding another renewal application to be submitted in such a short time period this operating permit will be issued for the maximum timeframe of five years and synced with other permits in the watershed at a later date.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending.

<http://dnr.mo.gov/env/wpp/permits/pn/index.html> Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

☒ - The Public Notice period for this operating permit was from 5/25/2018 to 6/25/2018. No comments were received.

DATE OF FACT SHEET: JUNE 26, 2018

COMPLETED BY:

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

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

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

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



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- 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.
- 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 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.

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



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- 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 permittee 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.



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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.

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

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
 - a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:

 - a. A site specific permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

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

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.

 - a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
 - b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri

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

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

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

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

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

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

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

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

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

- a. Use best management practices when applying biosolids.
- b. Biosolids cannot discharge from the land application site
- c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
- d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
- e. Do not apply more than the agronomic rate of nitrogen needed.
- f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - i. PAN can be determined as follows and is in accordance with WQ426
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
- g. Buffer zones are as follows:
 - i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet if dwellings;
 - iv. 100 feet of wetlands or permanent flowing streams;
 - v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
- h. Slope limitation for application sites are as follows;
 - i. A slope 0 to 6 percent has no rate limitation
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
 - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
- i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
- k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
 - i. PAN can be determined as follows:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$

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

SECTION I – MONITORING FREQUENCY

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

TABLE 5

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

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

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

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

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

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids.

This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

Note 3: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

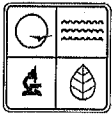
1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records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

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

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

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

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



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
**FORM A – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
UNDER MISSOURI CLEAN WATER LAW**

FOR AGENCY USE ONLY

CHECK NUMBER

DATE RECEIVED

FEE SUBMITTED

Note

PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- ☐ An operating permit and antidegradation review public notice
☐ A construction permit following an appropriate operating permit and antidegradation review public notice
☐ A construction permit and concurrent operating permit and antidegradation review public notice
☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
☐ An operating permit for a new or unpermitted facility Construction Permit # _____
☐ An operating permit renewal: permit # MO- _____ Expiration Date _____
☒ An operating permit modification: permit # MO- 0137243 Reason: See Attachment A-1

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) ☒ YES ☐ NO

2. FACILITY

NAME Calumet, Missouri, L.L.C.		TELEPHONE WITH AREA CODE (573) 754-6211	
ADDRESS (PHYSICAL) 11089 Highway D		CITY Louisiana	STATE MO
		ZIP CODE 63353	

3. OWNER

NAME Calumet Speciality Partners, L.P.		E-MAIL ADDRESS	TELEPHONE WITH AREA CODE (317) 328-5656
ADDRESS (MAILING) 2780 Waterfront Pkwy. Dr. Suite 200		CITY Indianapolis	STATE IN
		ZIP CODE 46214	

3.1 Request review of draft permit prior to public notice? ☒ YES ☐ NO

4. CONTINUING AUTHORITY

NAME Same as Above		TELEPHONE WITH AREA CODE	
ADDRESS (MAILING) Same as Above		CITY	STATE
		ZIP CODE	

5. OPERATOR

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

6. FACILITY CONTACT

NAME Mr. Michael Duffey		TITLE HSE Manager	TELEPHONE WITH AREA CODE (573) 754-6211
			FAX (573) 754-3182

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 SE 1/4 NE 1/4 Sec 29 T 54N R 1W Pike County
UTM Coordinates Easting (X): 669930 Northing (Y): 4365585
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 SE 1/4 NE 1/4 Sec 29 T 54N R 1W Pike County
UTM Coordinates Easting (X): 669750 Northing (Y): 4365797

003 SE 1/4 NE 1/4 Sec 29 T 54N R 1W Pike County
UTM Coordinates Easting (X): 669759 Northing (Y): 4365472

004 1/4 1/4 Sec T R County
UTM Coordinates Easting (X): Northing (Y):

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

001 – SIC 2869 and NAICS 32519 002 – SIC 2869 and NAICS 32519
003 – SIC 2869 and NAICS 32519 004 – SIC and NAICS

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
(Complete all forms that are applicable.)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES ☒ NO ☐
If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).
- B. Is your facility considered a "Primary Industry" under EPA guidelines: YES ☒ NO ☐
If yes, complete Forms C and D.
- C. Is application for storm water discharges only? YES ☐ NO ☒
If yes, complete EPA Form 2F.
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.
- E. Is wastewater land applied? If yes, complete Form I. YES ☐ NO ☒
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES ☐ NO ☒
If yes, complete Form R.

9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions.
(PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME J. Narramore			
ADDRESS 11292 Highway D	CITY Louisiana	STATE MO	ZIP CODE 63353
10. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.			
NAME AND OFFICIAL TITLE (TYPE OR PRINT) Stan Beisert, Plant Manager		TELEPHONE WITH AREA CODE (573) 754-6211	
SIGNATURE 		DATE SIGNED 2/25/2020	

MO 780-1479 (01-09)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- ☐ Appropriate Fees?
- ☐ Map at 1" = 2000' scale?
- ☐ Signature?
- ☐ Form C, if applicable?
- ☐ Form D, if applicable?
- ☐ Form 2F, if applicable?
- ☐ Form I (Irrigation), if applicable?
- ☐ Form R (Sludge), if applicable?

INSTRUCTIONS FOR COMPLETING FORM A
APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT

1. Check which option is applicable. **Do not check more than one item.** Construction and operating permit refer to permits issued by the Department of Natural Resources' Water Protection Program, Water Pollution Control Branch. Effective Sept. 1, 2008, a facility will be required to use **MISSOURI'S ANTIDEGRADATION RULE AND IMPLEMENTATION PROCEDURE**. For more information, this document can be reviewed at www.dnr.mo.gov/env/wpp/docs/aip-cwc-app-050708.pdf. This procedure will be applicable to new and expanded wastewater facilities and requires the proposed discharge to a water body to undergo a level of Antidegradation Review, which documents that the use of a water body's available assimilative capacity is justified.
- 1.1 An operating permit and antidegradation review public notice requires a Water Quality/Antidegradation Review Sheet to be submitted with the application (No fee required).
CONSTRUCTION PERMIT FEES
 - A. \$750 for a sewage treatment facility with a design flow of less than 500,000 gallons per day.
 - B. \$2,200 for a sewage treatment facility with a design flow of 500,000 gallons per day or more.Different application and construction fees are applicable if only sewer and/or lift stations are to be constructed.
OPERATING PERMIT FEES

If the application is for a site-specific permit re-issuance, send no fees.. You will be invoiced separately by the department.

Discharges covered by section 644.052.4 RSMo. (Primary or Categorical Facilities)
 - \$3,500 for a design flow under 1 mgd
 - \$5,000 for a design flow of 1 mgd or moreA. Discharges covered by section 644.052.5 RSMo. (Secondary or Non-Categorical Facilities).
 - \$1,500 for a design flow under 1 million gallons per day (mpg)
 - \$2,500 for a design flow of 1 mgd or more**SITE-SPECIFIC STORM WATER DISCHARGE FEES**
 - A. \$1,350 for a design flow under 1 mgd.
 - B. \$2,350 for a design flow of 1 mgd or more.**OPERATING PERMIT MODIFICATIONS**, including transfers, are subject to the following fees:
 - A. Municipals - \$200 each.
 - B. All others - 25 percent of annual fee.Note: Facility name and address changes where owner, operator and continuing authority remain the same are not considered transfers. Incomplete permit applications and/or related engineering documents will be returned by the department if they are not completed in the time frame established in a comment letter from the department to the owner. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.
2. Facility - Provide the name by which this facility is known locally. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Also include the street address or location of the facility. If the facility lacks a street name or route number, give the names of the closest intersection, highway, county road, etc.
3. Owner - Provide the legal name and address of owner.
- 3.1 Prior to submitting a permit to public notice, the department shall provide the permit applicant 10 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check YES to review the draft permit prior to public notice. Check NO to waive the process and expedite the permit.
4. Continuing Authority - Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf or contact the appropriate Department of Natural Resources Regional Office.
5. Operator - Provide the name, certificate number and telephone number of the person operating the facility.
6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.
- 7.1 An outfall is the point at which wastewater is discharged. Outfalls should be given in terms of the legal description of the facility. Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, please use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.
- 7.2 List only your primary Standard Industrial Classification, or SIC, and North American Industry Classification System code for each outfall. The SIC system was devised by the U.S. Office of Management and Budget to cover all economic activities. To find the correct SIC code, an applicant may check his or her unemployment insurance forms or contact the Missouri Division of Employment Security, 573-751-3215. The primary SIC code is that of the operation that generates the most revenue. If this information is not available, the number of employees or, secondly, production rate may be used to determine your SIC code. Additional information is on the Web for Standard Industrial Codes at www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System at www.census.gov/naics or contact the appropriate Department of Natural Resources Regional Office.
- 7.3

INSTRUCTIONS FOR COMPLETING FORM A
APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
(CONTINUED)

8. If you answer yes to A, B, C, D, E or F, then you must complete and file the supplementary form(s) indicated. A U.S. Geological Survey 1" = 2,000' scale map must be submitted with the permit application showing all outfalls, the receiving stream and the location of the downstream property owners. This type of map is available on the Web at www.dnr.mo.gov/internetmapviewer/ or from the Missouri Department of Natural Resources' Division of Geology and Land Survey in Rolla at 573-368-2125.
9. Please provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. Also, please indicate the location on the map. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way. For no discharge facilities, provide this information for the location where discharge would flow if there was one. For land application sites, include the owners of the land application sites and all adjacent landowners.
10. Signature - All applications must be signed as follows and the signature must be **original**:
 - A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
 - B. For a partnership or sole proprietorship, by a general partner or the proprietor.
 - C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

This completed form, along with the applicable permit fees, should be submitted to the appropriate Regional Office. Submittal of an incomplete application may result in the application being returned. A map of the department's regional offices with addresses and phone numbers can be viewed on the Web at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, contact the appropriate Regional Office or the Department of Natural Resources' Water Protection Program, Water Pollution Control Branch, Permits and Engineering Section at 573-751-6825.

ATTACHMENT A-1: Supporting Information for Permit Modification Request

Calumet Missouri, LLC Permit Modification Request February 2020

This submittal is being made to request a modification to an existing NPDES permit (MO-0137243). The existing permit is for three outfalls as described below:

Outfall 001 – This outfall will not be affected by this permit modification request.

Outfall 003 – This outfall will not be affected by this permit modification request. This outfall has not yet been constructed pending site grading activities.

Outfall 002 – The proposed facility operational changes associated with this Permit Modification Request will result in the following:

- No Change to the annual production capacity of the facility (Just adding a new product as part of existing capacity).
- No Change to the nature or strength of the process wastewater being treated by the on-site WWTP.
- No Change to the daily average volume of process wastewater being treated by the on-site WWTP.
- No Change to the WWTP effluent quality as reflected in the facility DMRs. Discussions with MDNR staff during a recent "Initial Consultation Meeting" addressed the proposed facility operational changes and what impact they would have on the character and volume of discharge through Outfall 002. The proposed product to be added to the facility operations is a synthetic lubricant similar to the syn-lube product currently produced at the Calumet facility. Essentially all, of the specific input raw materials that are not incorporated into the finished product will be separated as a residual solid and will be handled and disposed of by the same methods as currently utilized. Any de-minimis quantities of specific input raw materials or reaction by-products contained in the process wastewater generated will be adequately treated by the existing extended aeration WWTP. MDNR staff raised questions concerning the potential for increased discharge of Ammonia and Heat from the production of the proposed added product. Any Ammonia will be consumed by the biomass within the WWTP. The raw Calumet wastewater is deficient in nutrients and requires the routine addition of supplemental Ammonia in order to achieve optimum biological activity in the extended aeration WWTP. The temperature of the process wastewater stream from the proposed new production activity will be the same as the existing process wastewater (90-95 Degrees F). The long residence time within the WWTP would allow the effluent to reach ambient temperature at Outfall 002. It should be noted that heat addition by steam injection into the aeration basin of the WWTP is required during several months of the year in order to maintain optimal conditions for efficient biological treatment.

The Calumet facility obtains process water, cooling water, and fire system testing water from Dyno Nobel. The source of the water is either the Mississippi River or Buffalo Creek. Dyno Nobel operates a water filtration plant for treatment of the water prior to its delivery to Calumet. The Calumet fire water system is tested annually using about 10000 gallons of water.

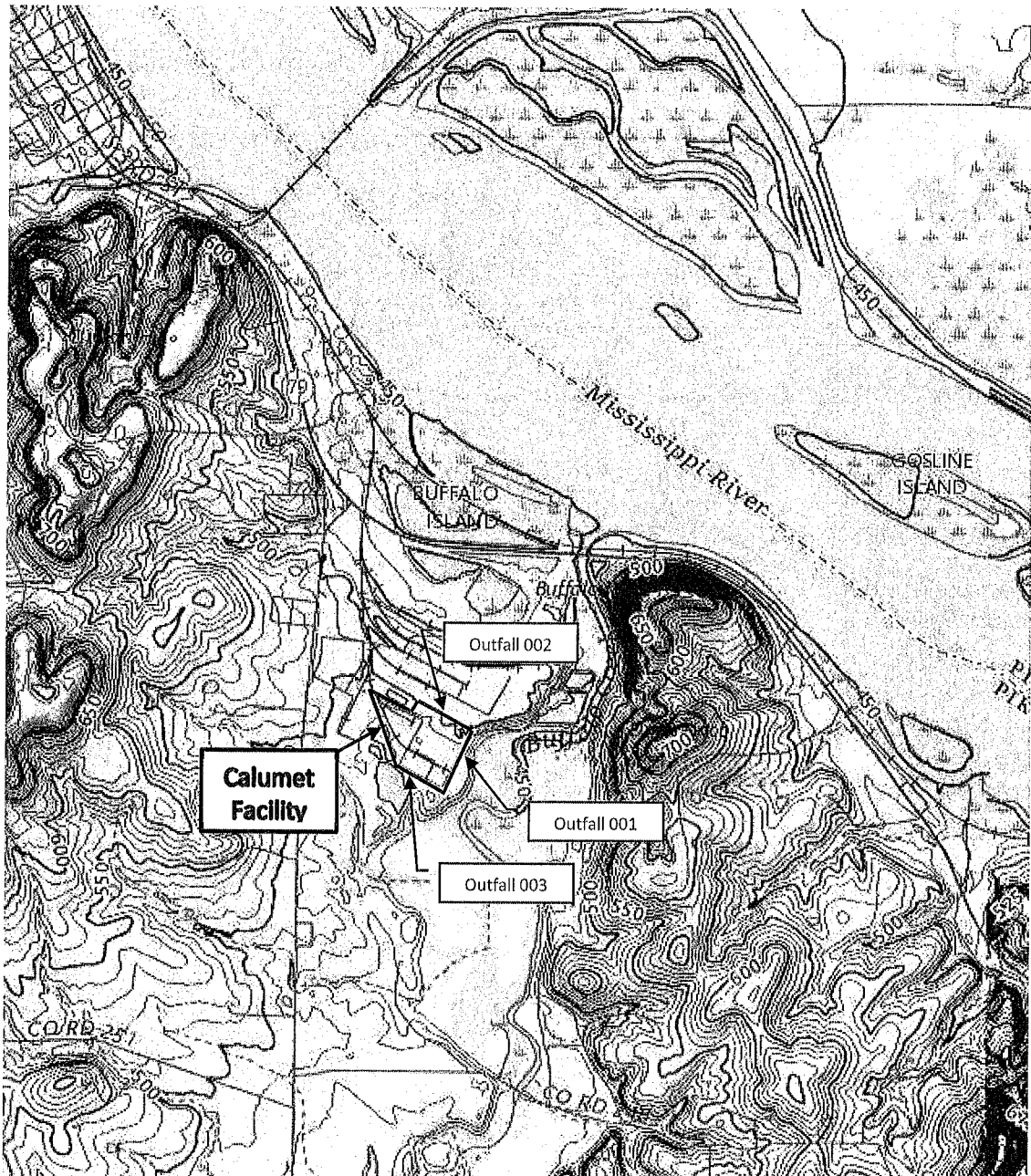
ATTACHMENT A-2: Calumet Missouri, LLC Aerial Photo

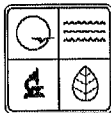
Calumet Missouri, LLC - NPDES Permit Modification Request February 2020



ATTACHMENT A-3: Topographical Map with Outfalls

Calumet Missouri, LLC - Permit Modification Request February 2020





MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
**FORM C – APPLICATION FOR DISCHARGE PERMIT –
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS & STORM WATER**

FOR AGENCY USE ONLY

CHECK NO. _____

DATE RECEIVED _____

FEE SUBMITTED _____

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

1.00 NAME OF FACILITY

Calumet, Missouri, L.L.C.

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

MO-0137243

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

NA

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 2869

B. SECOND _____

C. THIRD _____

D. FOURTH _____

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) _____ 1/4 _____ 1/4 SEC _____ T _____ R _____ (See Attachment C-1) _____ COUNTY

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)
(See Attachment C-1)

RECEIVING WATER
(See Attachment C-1)

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Manufacture of Synthetic Lubricants.
(See Attachment C-2: Flow Schematic)

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

☒ YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.) ☐ NO (GO TO 3.20)

WET Testing has been conducted on a composite of the WWTP effluent using an in-stream grab taken upstream of the discharge from Shared Outfall 001. (See Attachment C-3: WET Testing Data)

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☒ YES (LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.) ☐ NO (GO TO 3.30)

A. NAME	B. ADDRESS	C. TELEPHONE (area code and number)	D. POLLUTANTS ANALYZED (list)

3.30 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 the information is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

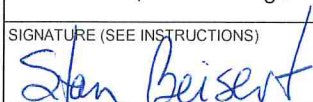
NAME AND OFFICIAL TITLE (TYPE OR PRINT)

Stan Beisert, Plant Manager

TELEPHONE NUMBER WITH AREA CODE

(573) 754-6211

SIGNATURE (SEE INSTRUCTIONS)



DATE SIGNED

2/25/2020

[illegible]

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2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

☐ YES (COMPLETE THE FOLLOWING TABLE)☒ NO (GO TO SECTION 2.50)

1. OUTFALL NUMBER (list)	2. OPERATION(S) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW				C. DURATION (in days)
				A. FLOW RATE (in mgd)		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK (specify average)	B. MONTHS PER YEAR (specify average)	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

☒ YES (COMPLETE B.)☐ NO (GO TO SECTION 2.60)

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

☐ YES (COMPLETE c.)☒ NO (GO TO SECTION 2.60)

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS 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.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS (list outfall numbers)
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	
		Applicable Effluent Limitation Guidelines (ELG) 40 CFR 414.73 G 40 CFR 414.81 H 40 CFR 414.91 I All applicable ELGs are expressed in terms of concentration or mass only, not in terms of production.	002

2.60 IMPROVEMENTS

A. ARE YOU NOW 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 THAT 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 3.00)

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

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS (OR OTHER ENVIRONMENTAL PROJECTS THAT MAY AFFECT YOUR DISCHARGES) YOU NOW HAVE UNDER WAY OR ARE YOU PLANNING. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

B. For each outfall, provide a description of

1. All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water runoff.
2. The average flow contributed by each operation.
3. The treatment received by the wastewater.

[illegible]

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet instead of completing these pages.
(Use the same format)
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.		OUTFALL NO.
		002

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.														
1. POLLUTANT		2. EFFLUENT				3. UNITS (specify if blank)			4. INTAKE (optional)			B. NO. OF ANALYSES		
		A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE					
		(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS				
A. Biochemical Oxygen Demand (BOD)		NOTE:	This	Outfall	discharges	for	discharge to	Mississippi	on-site	sewer for	conveyance	to Dyno	Nobel	
B. Chemical Oxygen Demand (COD)				Outfall 001					River.					
C. Total organic Carbon (TOC)				(See	Attachmen									
D. Total Suspended Solids (TSS)														
E. Ammonia (as N)														
F. Flow		VALUE 120000 GPD		VALUE			VALUE 60000 GPD					VALUE		
G. Temperature (winter)		VALUE 95F		VALUE			VALUE 90F				°C	VALUE		
H. Temperature (summer)		VALUE 95F		VALUE			VALUE 90F				°C	VALUE		
I. pH		MINIMUM 6.5	MAXIMUM 9.5	MINIMUM	MAXIMUM						STANDARD UNITS			

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			B. NO. OF ANALYSES
	A. BELIEVED PRESENT	B. 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		
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Bromide 24959-67-9		X	NOTE:	See	Attachment	C-4	DMR Data							
B. Chlorine Total Residual		X												
C. Color		X												
D. Fecal Coliform		X												
E. Fluoride 16984-48-8		X												
F. Nitrate— Nitrate (as N)		X												

1. POLLUTANT AND CAS NUMBER <i>(if available)</i>	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE <i>(optional)</i>		B. NO. OF ANALYSES
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	B. MAXIMUM 30 DAY VALUE <i>(if available)</i>		C. LONG TERM AVRG. VALUE <i>(if available)</i>		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		
					(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen Total Organic (as N)		X	NOTE:	See	Attachment	C-4	DMR Data							
H. Oil and Grease		X												
I. Phosphorus (as P) Total (7723-14-0)		X												
J. Sulfate (as SO ₄) (14808-79-8)		X												
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum Total (7429-90-5)		X												
O. Barium Total (7440-39-3)		X												
P. Boron Total (7440-42-8)		X												
Q. Cobalt Total (7440-48-4)		X												
R. Iron Total (7439-89-6)		X												
S. Magnesium Total (7439-95-4)		X												
T. Molybdenum Total (7439-98-7)		X												
U. Manganese Total (7439-96-5)		X												
V. Tin Total (7440-31-5)		X												
W. Titanium Total (7440-32-6)		X												

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BELIEVED PRESENT	B. 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						
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)		X	Note:	See	Attachment	C-4	DMR Data							
2M. Beryllium, Total (7440-41-7)		X												
3M. Magnesium, Total (7439-95-4)		X												
4M. Molybdenum, Total (7439-98-7)		X												
5M. Tin, Total (7440-31-5)		X												
6M. Titanium, Total (7440-32-6)		X												
7M. Mercury, Total (7439-97-6)		X												
8M. Selenium, Total (7782-49-2)		X												
9M. Thallium, Total (7440-28-0)		X												
10M. Phenols, Total		X												
RADIOACTIVITY														
(1) Alpha Total		X												
(2) Beta Total		X												
(3) Radium Total		X												
(4) Radium 226 Total		X												

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM C – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS.

All blanks must be filled in when the application is submitted to the appropriate regional office (see map). The form must be signed as indicated.

This application is to be completed only for wastewater facilities with a discharge. Include any facility with possibility of discharge, even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, then sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility – By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

2.00 List in descending order of significance the four digit Standard Industrial Classification (SIC) codes that best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words.

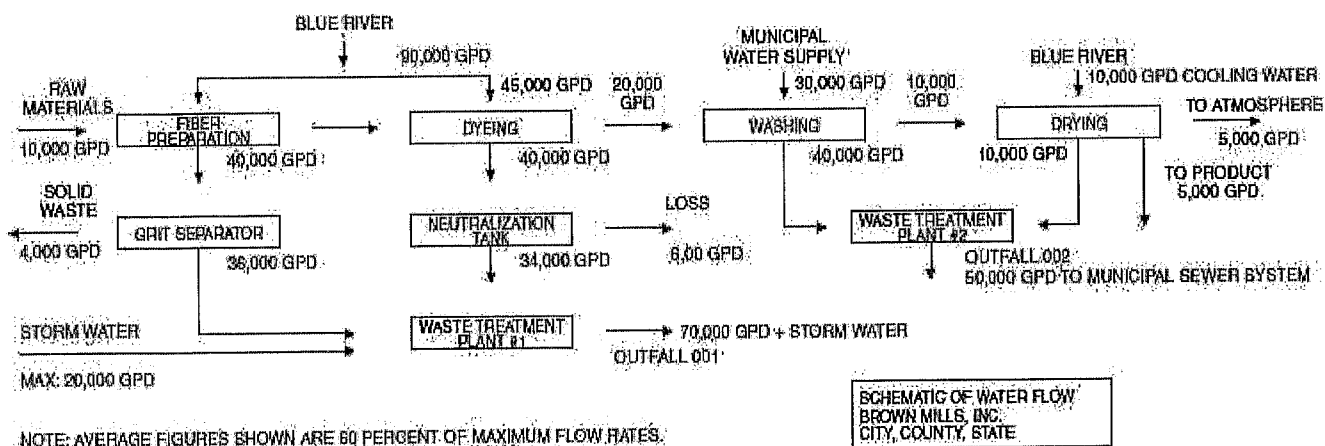
SIC code numbers are descriptions that may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, that is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, contact the Missouri Department of Natural Resources Regional office in your area (see map).

2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant, location or sufficient information so that it may be located by the Missouri Clean Water Commission staff.

2.20 Receiving Water – the name of the stream to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

2.30 Self-explanatory.

2.40 A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and storm water runoff. You may group similar operations into a single unit labeled to correspond to the more detailed listing. The water balance should show average and maximum flows. Show all significant losses of water to products, atmosphere, discharge and public sewer systems. You should use actual measurements whenever available; otherwise, use your best estimate. An example of any acceptable line drawing appears below.



B. List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or a distillation tower"). You may estimate the flow contributed by each source if no data is available, and for storm water, you may use any reasonable measure of duration, volume or frequency. For each treatment unit, indicate its size, flow rate and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table A to fill in column 3B for each treatment unit. Insert "XX" into column 3B if no code corresponds to a treatment unit you list.

TABLE A – CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

1-A	Ammonia Stripping	1-M	Grit Removal
1-B	Dialysis	1-N	Microstraining
1-C	Diatomaceous Earth Filtration	1-O	Mixing
1-D	Distillation	1-P	Moving Bed Filters
1-E	Electrodialysis	1-Q	Multimedia Filtration
1-F	Evaporation	1-R	Rapid Sand Filtration
1-G	Flocculation	1-S	Reverse Osmosis (Hyperfiltration)
1-H	Flotation	1-T	Screening
1-I	Foam Fractionation	1-U	Sedimentation (Settling)
1-J	Freezing	1-V	Slow Sand Filtration
1-K	Gas-Phase Separation	1-W	Solvent Extraction
1-L	Grinding (Comminutors)	1-X	Sorption

CHEMICAL TREATMENT PROCESSES

2-A	Carbon Absorption	2-G	Disinfection (Ozone)
2-B	Chemical Oxidation	2-H	Disinfection (Other)
2-C	Chemical Precipitation	2-I	Electrochemical Treatment
2-D	Coagulation	2-J	Ion Exchange
2-E	Dechlorination	2-K	Neutralization
2-F	Disinfection (Chlorine)	2-L	Reduction

BIOLOGICAL TREATMENT PROCESSES

3-A	Activated Sludge	3-E	Pre-Aeration
3-B	Aerated Lagoons	3-F	Spray Irrigation/Land Application
3-C	Anaerobic Treatment	3-G	Stabilization Ponds
3-D	Nitrification-Denitrification	3-H	Trickling Filtration

OTHER PROCESSES

4-A	Discharge to Surface Water	4-C	Reuse/Recycle of Treated Effluent
4-B	Ocean Discharge Through Outfall	4-D	Underground Injection

SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A	Aerobic Digestion	5-M	Heat Drying
5-B	Anaerobic Digestion	5-N	Heat Treatment
5-C	Belt Filtration	5-O	Incineration
5-D	Centrifugation	5-P	Land Application
5-E	Chemical Conditioning	5-Q	Landfill
5-F	Chlorine Treatment	5-R	Pressure Filtration
5-G	Composting	5-S	Pyrolysis
5-H	Drying Beds	5-T	Sludge Lagoons
5-I	Elutriation	5-U	Vacuum Filtration
5-J	Flotation Thickening	5-V	Vibration
5-K	Freezing	5-W	Web Oxidation
5-L	Gravity Thickening		

2.40 C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Maximum Daily" columns. Report the average of all daily values measures during days when discharge occurred within the last year in the "Long Term Average" columns.

2.50 A. All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by BPT, BCT, or BAT guidelines. If you are unsure whether you are covered by a promulgated effluent guideline, check with your Missouri Department of Natural Resources' Regional Office. You must check yes if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check no.

B. An effluent guideline is expressed in terms of production (or other measure of operation) if the limitations are expressed as mass of pollutant per operational parameter; for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked yes to item B. The production information requested here is necessary to apply effluent guidelines to your facility and you may not claim it as confidential. However, you do not have to indicate how the reported information was calculated.

Report quantities in the units of measurement used in the applicable effluent guideline. The figures provided must be a measure of actual operation over a one month period, such as the production for the highest month during the last twelve months, or the monthly average production for the highest year of the last five years, or other reasonable measure of actual operation, but may not be based on design capacity or on predictions of future increases in operation.

2.60 A. If you check yes to this question, complete all parts of the chart, or attach a copy of any previous submission you have made containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

3.00 These items require you to collect and report data on the pollutants discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

GENERAL INSTRUCTIONS. Part A requires you to report at least one analysis for each pollutant. Part B requires you to mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2A or 2B, Part B) based on your best estimate, and test for those which you believe to be present. Part C requires you to list any of a group of pollutants which you believe to be present, with a brief explanation of why you believe it to be present. (See specific instructions on the form and below Parts A through C).

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as a concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper. (Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Part B).

CONCENTRATION

ppm	 parts per million
mg/L	 milligrams per liter
ppb	 parts per billion
ug/L	 micrograms per liter

MASS

lbs	 pounds
ton	 tons (English tons)
mg	 Milligrams
g	 grams
kg	 kilograms
T	 tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "number of analyses" columns (columns 2A and 2B, Part A, and columns 3A and 3D, Part B). The Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a complete sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" columns (column 2C, Part A, and column 3C, Part B), and the total number of daily values under the "Number of Analyses" columns (column 2D, Part A, and column 3D, Part B). Also, determine the average of all daily values taken during each calendar month, and report the highest average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Values" columns (column 2B, Part A, and column 3B, Part B).

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLE. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. A combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the Intake columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)
2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)
3. When applicable, a demonstration of the extent to which the pollutants in the intake vary physically, chemically, or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

- 3.00 Part A must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Missouri Department of Natural Resources may waive the requirements to test for one or more of these pollutants, upon a determination that testing for the pollutant(s) is not appropriate for your effluent.

Use composite samples for all pollutants in this part, except use grab samples for pH and temperature. See discussion in instructions above for definitions of the columns in Part A. The "Long Term Average Values" column (column 2C) and "Maximum 30 Day Values" column (column 2B) are not compulsory but should be filled out if data is available.

- 3.00 Part B must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff.

Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease and fecal coliform. The Long Term Average Values column (column 3C) and Maximum 30 Day Values column (column 3B) are not compulsory but should be filled out if data is available.

- 3.00 List any pollutants in Table B that you believe to be present and explain why you believe them to be present in part C. No analysis is required, but you have analytical, you must report it.

TABLE B – TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

TOXIC POLLUTANT	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Asbestos	Dichlorvos	Nalad
	Diethylamine	Napthenic acid
HAZARDOUS SUBSTANCES	Dimethylamine	Nitrotoluene
	Dintrobenzene	Parathion
Acetaldehyde	Diquat	Phenolsulfonate
Allyl alcohol	Disulfoton	Phosgene
Allyl chloride	Diuron	Propargite
Amyl acetate	Epichlorohydrin	Propylene oxide
Aniline	Ethion	Pyrethrins
Benzonitrile	Ethylene diamine	Quinoline
Benzyl chloride	Ethylene dibromide	Resorcinol
Butyl acetate	Formaldehyde	Strontium
Butylamine	Furfural	Strychnine
Captan	Guthion	Styrene

TABLE B – (continued)

HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Carbaryl	Isoprene	2, 4, 5-T (2,4,5-Trichloro- phenoxyacetic acid)
Carbofuran	Isopropanolamine	TDE (Tetrachlorodiphenyl ethane)
Carbon disulfide	Kelthane	2, 4, 5-TP (2-(2,4,5-Trichloro- phenoxy) propanoic acid)
Chlorpyrifos	Kepone	Trichlorofon
Coumaphos	Malathion	Triethanolamine
Cresol	Mercaptodimethur	Triethaylamine
Crotonaldehyde	Methoxychlor	Uranium
2,4-D (2,4-Dichloro- Phenoxyacetic acid)	Methyl mercaptan	Vanadium
Diazinon	Methyl parathion	Vinyl acetate
Dicamba	Mevinphos	Xylene
Dichlobenil	Mexacarbate	Xylenol
2,2-Dichloropropionic acid	Monethyl amine	Zirconium
	Monomethyl amine	

3.10 Self-explanatory. Additional information may be requested by the Missouri Department of Natural Resources.

3.20 Self-explanatory.

3.30 The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application . . . shall upon conviction, be punished by a fine of no more \$10,000 or by imprisonment for not more than six months, or both.

All applications must be signed as follows and the signature must be original.

- A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
- B. For a partnership or sole proprietorship, by a general partner or the proprietor.
- C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

ATTACHMENT C-1: Outfall & Receiving Water Descriptions

Calumet Missouri, LLC Permit Modification Request February 2020

Outfall 001

Receives non-contaminated stormwater, and occasional discharges of steam condensate and cooling tower bleed if required to relieve stress on the WWTP during periods of high precipitation. Outfall 001 discharges to Buffalo Creek. (Outfall 001 is not impacted by this Permit Modification Request.)

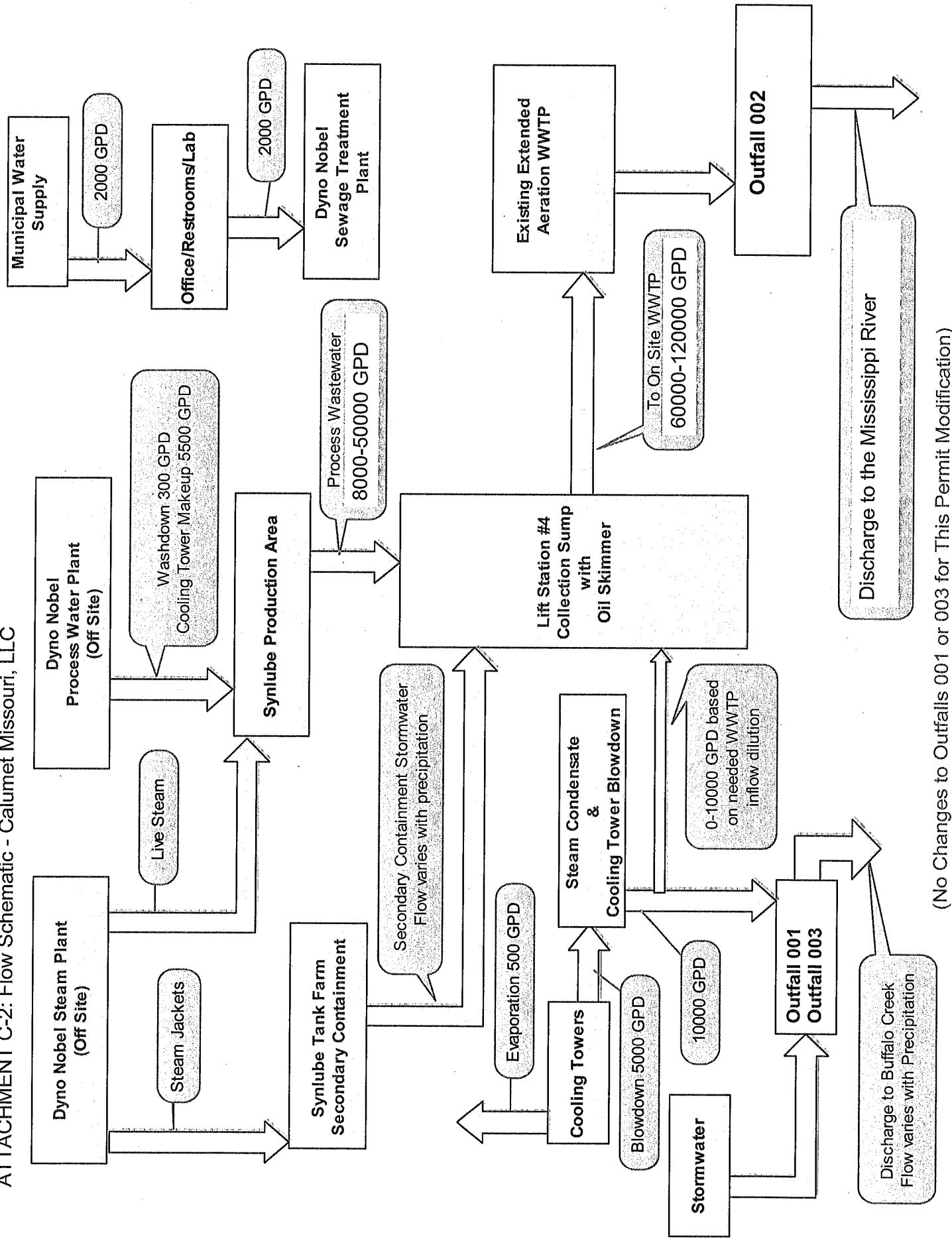
Outfall 002

Receives process wastewater streams, contaminated stormwater from secondary containment, and discharges of steam condensate and cooling tower bleed except when diverted to Outfall 001 to relieve stress on the WWTP during periods of high precipitation. Outfall 002 discharges to the Mississippi River through shared outfall with Dyno Nobel.

Outfall 003

Receives non-contaminated stormwater from southern portion of the facility site. Outfall 003 will discharge to Buffalo Creek after it has been constructed. Outfall construction is pending completion of site grading modifications. (Outfall 003 is not impacted by this Permit Modification Request.)

ATTACHMENT C-2: Flow Schematic - Calumet Missouri, LLC



ATTACHMENT C-3: Outfall 002 WET Data (October, 2019)

Calumet Missouri, LLC Permit Modification Request February 2020



PDC Laboratories, Inc.

PROFESSIONAL • DEPENDABLE • COMMITTED

October 24, 2019

Mike Duffey
Calumet Missouri, LLC
11089 Highway D
Louisiana, MO 63353

RE: WETT Multiple

Dear Mike Duffey:

Please find enclosed the analytical results for the **2** sample(s) the laboratory received on **10/16/19 10:10 am** and logged in under work order **9103304**. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of PDC Laboratories, Inc.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

PDC Laboratories, Inc. appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lgrant@pdclab.com.

Sincerely,

Chad Cooper
Laboratory Supervisor
(417) 864-8924
ccooper@pdclab.com





ANALYTICAL RESULTS

Sample: 9103304-01
Name: Effluent Composite
Matrix: Waste Water - Composite

Sampled: 10/15/19 09:10
Received: 10/16/19 10:10
PO #: 4500188426

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
General Chemistry - SPMO									
Chlorine - Total Residual	< 0.10	mg/L	H	10/18/19 11:30	1	0.10	10/18/19 11:30	CIH	SM 4500-Cl G*
Conductivity	550	umhos/cm		10/16/19 15:00	1	0.10	10/16/19 15:00	CIH	SM 2510B
Dissolved Oxygen	8.8	mg/L	H	10/16/19 15:00	1	1.0	10/16/19 15:00	CIH	SM 4500-O G*
pH	7.6	pH Units	H	10/16/19 15:00	1		10/16/19 15:00	CIH	SM 4500-H B - SW 9040
Temperature at pH measurement	24	°C		10/16/19 15:45	1		10/16/19 15:45	CIH	SM 4500 H B*
General Chemistry - STL									
Alkalinity - total as CaCO ₃	42	mg/L		10/23/19 10:20	1	20	10/23/19 15:27	SCI	SM 2320B*
Nutrients - SPMO									
Ammonia-N	< 0.10	mg/L		10/18/19 13:00	1	0.10	10/18/19 13:00	CIH	EPA 350.1 - QC 10-107-06-1-I & J*
Total Metals - STL									
Hardness	200	mg/L		10/21/19 09:44	1	0.24	10/22/19 10:17	JMW1	SM 2340B
Calcium	65	mg/L		10/21/19 09:44	1	0.095	10/22/19 10:17	JMW1	EPA 200.7
Magnesium	10	mg/L		10/21/19 09:44	1	0.050	10/22/19 10:17	JMW1	EPA 200.7
WETT - SPMO									
Ceriodaphnia Dubia TUa	< 1.0	units		10/16/19 15:45	1	1.0	10/16/19 15:45	CIH	EPA 2000.0/2002.0*
Pimephales Promelas TUa	< 1.0	units		10/16/19 15:45	1	1.0	10/16/19 15:45	CIH	EPA 2000.0/2002.0*



ANALYTICAL RESULTS

Sample: 9103304-02
Name: Upstream Grab
Matrix: Surface Water - Grab

Sampled: 10/15/19 09:25
Received: 10/16/19 10:10
PO #: 4500188426

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
General Chemistry - SPMO									
Chlorine - Total Residual	< 0.10	mg/L	H	10/18/19 11:30	1	0.10	10/18/19 11:30	CIH	SM 4500-Cl G*
Conductivity	440	umhos/cm		10/16/19 15:00	1	0.10	10/16/19 15:00	CIH	SM 2510B
Dissolved Oxygen	8.9	mg/L	H	10/16/19 15:00	1	1.0	10/16/19 15:00	CIH	SM 4500-O G*
pH	7.8	pH Units	H	10/16/19 15:00	1		10/16/19 15:00	CIH	SM 4500-H B - SW 9040
Temperature at pH measurement	24	°C		10/16/19 15:45	1		10/16/19 15:45	CIH	SM 4500 H B*
Nutrients - SPMO									
Ammonia-N	< 0.10	mg/L		10/18/19 13:00	1	0.10	10/18/19 13:00	CIH	EPA 350.1 - QC 10-107-06-1-I & J*



NOTES

Specific method revisions used for analysis are available upon request.

* Not a TNI accredited analyte

Memos

Report of Acute Toxicity Testing

Reference Toxicity Test:

PDC Laboratories, INC. conducts a monthly reference toxicant test to demonstrate and obtain consistent, precise results for permit compliance purposes. This demonstration is to ensure satisfactory laboratory performance. The most recent reference test results are as follows:

Date Initiated: October 8, 2019

Date Concluded: October 10, 2019

Reference Toxicant: Potassium Chloride (KCl)

Lot Number: 18A195207

Expiration: N/A

Standards ID: SPMO6-22A

Moderately Hard Synthetic Water: 3-11CC1

Prepared: September 27, 2019

Expiration: October 11, 2019

Analyst: CIH

Pimephales promelas: 48 hour Acute Test - LC50 = 678.6 mg/L

SPMO %CV = 15.72 %

National Limits (75th Percentile) = 17.9% CV

National Control Limit (90th Percentile) = 33% CV

Ceriodaphnia dubia: 48 hour Acute Test - LC50 = 617.4 mg/L

SPMO %CV = 24.96 %

National Limits (75th Percentile) = 29%CV

National Control Limit (90th Percentile) = 34%CV

Literature Cited:

- 1.) APHA. 1992. Standard methods for the examination of water and wastewater, 18th Ed. American Public Health Association, Washington, D.C.
- 2.) USEPA. 2002. Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms, 5th ed. EPA-821-R-02-012
- 3.) USEPA 2000. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2). June 2000. EPA 833-R-00-003



Certifications

CHI - McHenry, IL - 4314 W Crystal Lake Road A, McHenry, IL 60050

TNI Accreditation for Drinking Water, Wastewater, Fields of Testing through IL EPA Lab No. 100279

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPIL - Springfield, IL - 1210 Capitol Airport Drive, Springfield, IL 62707

TNI Accreditation through IL EPA Lab No. 100323

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - St. Louis, MO - 3278 N Highway 67, Florissant, MO 63033

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

TNI Accreditation for Wastewater, Hazardous, and Solid Waste Analysis through IL EPA No. 200080

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Missouri Department of Natural Resources

Microbiological Laboratory Service for Drinking Water

Qualifiers

H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.

Certified by: Chad Cooper, Laboratory Supervisor



Multiple Dilution WET Test
 Sample # 9103304
 Client Calumet
Client Permit # M0-0131243PP Hatch 100919MHSF 3-12ACZCD Hatch 101019Board/Shelf 006/4

Cup	Conc.	Initial	24 hour	48 hour	Set Times		
P1	0	10	10	10	Start Date/Time: <u>10-16-19 / 1545</u>		
P2	5	10	10	10	Date	Time	Analyst
P3	10	10	10	10	0 Hour	<u>10-16-19</u>	<u>1545</u> <u>CIH</u>
P4	20	10	10	10	24 Hour	<u>1557</u> <u>10-17-19</u>	<u>NSW</u>
P5	888	10	10	10	48 Hour	<u>10-18-19</u>	<u>1450</u> <u>CIH</u>
P6	40	10	10	10	End Date/Time: <u>10-18-19 / 1450</u>		
P7	888	10	10	10	Results		
P8	2.5	10	10	10	<i>Pimephales promelas</i>		
P9	10	10	10	10	48 Hour Result	Date	Analyst
P10	20	10	10	10	LC 50	<u>> 40</u>	<u>10-18-19</u> <u>CIH</u>
P11	0	10	10	10	TU _a	<u>< 2.5</u>	<u>10-18-19</u> <u>CIH</u>
P12	2.5	10	10	10	<i>Ceriodaphnia Dubia</i>		
P13 *	40	10	10	10	48 Hour Result	Date	Analyst
P14 *	5	10	10	10	LC 50	<u>> 40</u>	<u>10-18-19</u> <u>CIH</u>
C1	20	5	5	5	TU _a	<u>< 2.5</u>	<u>10-18-19</u> <u>CIH</u>
C2	0	5	5	5	Date		
C3	888	5	5	5	Filtered (Y / N):	<u>Y</u>	<u>10-16-19</u> <u>CIH</u>
C4	20	5	5	5	Light Check:	<u>-</u>	<u>-</u>
C5	888	5	5	5	PP Fry Age:	<u>7 days</u>	<u>10-16-19</u> <u>CIH</u>
C6	40	5	5	5	CD Neonates Age:	<u>< 24 hrs</u>	<u>10-16-19</u> <u>CIH</u>
C7	40	5	5	5	Comments: PP fry were set in 200 ml of conc. w/in a		
C8	2.5	5	5	5	250 ml cup .CD were set in 15 ml of conc. w/in a 30 ml cup		
C9	2.5	5	5	5			
C10	888	5	4	4			
C11	0	5	5	5			
C12	5	5	5	5			
C13	10	5	5	5			
C14	5	5	4	4			
C15	5	5	5	5			
C16	888	5	8 ^{CIH}	4			
C17	0	5	5	5			
C18	5	5	5	5			
C19	20	5	5	5	Analyst Signature: <u>[Signature]</u>		
C20	2.5	5	5	5	Date: <u>10-21-19</u>		
C21	2.5	5	5	5	Read and		
C22	40	5	5	4	Understood By: <u>[Signature]</u>		
C23	20	5	5	5	Date: <u>10-22-19</u>		
C24	10	5	5	5			
C25 *	10	5	5	5	Logbook: <u>3</u> Report #: <u>85</u>		
C26 *	40	5	5	5			
C27 *	10	5	5	5			
C28 *	0	5	5	5			

* These cups only used when upstream samples are provided.

Routine Chemistries

Client Permit # M0-0137243

Sample # 9103304

Client Calumet

PR Hatch 100919

CD Hatch 101017

MHSF 3-12AC2

Board/Shelf 008

Calibration data									
pH	Initial	Date	Time	Analyst	DO (mg/L)	Date	Time	Analyst	% Sat
4.00	4.01	10-14-19	1230	CH	4.01	10-16-19	1245	CH	100
7.00	7.00				7.00				
10.00	10.01				10.01				
Curve	97.9				97.9				
Initial/Received									
Cup #	067	12	14	9	10	13	1	6	
Concentration	MHSF	2.5%	5%	10%	20%	40%	*Upstream	40%	
pH (EPA 150.1)	7.68	7.74	7.74	7.73	7.71	7.62	7.75	7.61	CH
DO (mg/L) (SM 5010)	8.12	8.76	8.97	8.99	8.94	8.79	8.92	8.72	CH
DO (mg/L) Received									
Conductivity (µmhos) (SM 2510B)			316			550 (55.6)		440	CH
Chlorine (mg/L)	Method	Effluent	Upstream *	Date	Time	Batch	Time	Batch	Analyst
	4500Cl-G	0	0.04	10-18-19	1130	8924243	1500	8924386	CH
Q-Hour									
Temperature (°C)	Fathead Minow	24.2				24.1	10-16-19	1545	CH
1-Hour									
Test	MHSF	40%	Upstream *	Date	Time	Batch	Time	Batch	Analyst
DO (mg/L)	17.58	8.25	8.59	10-16-19	1645	8924386	1500	8924386	CH
Temperature (°C)	Fathead Minow	24.0				23.7	10-16-19	1645	CH
24-Hour									
Test	MHSF	2.5%	5%	10%	20%	40%	*Upstream	Date	Time
DO (mg/L)	6.76	6.69	6.77	6.88	6.73	6.82	7.33	10-17-19	1530
Temperature (°C)	Fathead Minow	24.9				23.9	10-17-19	1530	NSW
48-Hour									
Test	MHSF	2.5%	5%	10%	20%	40%	*Upstream	Date	Time
pH	7.51	7.49	8.04	7.96	7.92	7.86	8.09	10-18-19	1450
DO (mg/L)	7.02	6.83	6.89	6.81	6.77	6.84	7.10	10-18-19	1450
Temperature (°C)	Fathead Minow	25.2				25.0	10-18-19	1450	CH
Conductivity (µmhos)	MHSF	317				544 (53)	439	10-18-19	1450
Comments: H qualifier added to DO, pH, pCl due to sample hold time.									

Analyst Signature: *Carly Hufnagel*

Date: 10-21-19

Read and Understood By: *[Signature]*

Date: 10-22-19

* Upstream only performed if supplied by the client

PDC LABORATORIES, INC.
1805 W. SUNSET
SPRINGFIELD, MO 65807

PHONE # 417-864-8924
FAX # 417-864-7081

State where samples collected MOX.X.C.C. Templates: W.L.F. Test Calumet No. doc

SUBCONTRACT ORDER
Transfer Chain of Custody

PDC Laboratories, Inc.

9103304

SENDING LABORATORY

PDC Laboratories, Inc.
1805 West Sunset Street
Springfield, MO 65807
(417) 864-8924

RECEIVING LABORATORY

PDC Laboratories, Inc. - St Louis
3278 N Highway 67
Florissant, MO 63033
(314) 432-0550

Sample: 9103304-01
Name: Effluent Composite

Sampled: 10/15/19 09:10
Matrix: Waste Water
Preservative: Cool <6

Analysis	Due	Expires	Comments
04-Alk	10/25/19 16:00	10/29/19 09:10	
04-Ca 200.7 WWTot	10/25/19 16:00	04/12/20 09:10	
04-Mg 200.7 WWTot	10/25/19 16:00	04/12/20 09:10	

Please email results to Chad Cooper at ccooper@pdclab.com

Date Shipped: 10-16-19 Total # of Containers: 2 Sample Origin (State): MO PO #: —

Turn-Around Time Requested ☒ NORMAL ☐ RUSH Date Results Needed: —

<u>Kawa</u> Relinquished By	<u>1500</u> <u>10-16-19</u> Date/Time	<u>Joe Clark</u> Received By	<u>10/17/19</u> Date/Time	Sample Temperature Upon Receipt <u>41</u> °C
				Sample(s) Received on Ice <u>Y</u> or N
				Proper Bottles Received in Good Condition <u>Y</u> or N
				Bottles Filled with Adequate Volume <u>Y</u> or N
				Samples Received Within Hold Time <u>Y</u> or N
				Date/Time Taken From Sample Bottle <u>Y</u> or N

ATTACHMENT C-4: Outfall 002 DMR Data (October, November & December, 2019)

Calumet Missouri, LLC Permit Modification Request February 2020

Facility Name	Calumet Missouri LLC												
Permit Number	MO-0137243												
County	Pike												
Facility Type	Stormwater												
Current Address:	11089 Highway D Louisiana, MO 63553												
Owner	☐ Billing ☐ Billing ☐												
Address Change For:	☐ Owner ☐ Billing ☐												
REPORTING PERIOD:	January	February	March	April	May	June	July	August	September	October	November	December	Year
CHECK BOX IF NO DISCHARGE OCCURS DURING REPORT PERIOD	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	2019
SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.0(9)(C)	HSE Manager												
PHONE NUMBER E-MAIL ADDRESS (Optional)	573-754-6211 mike.duffey@clint.com												

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall #002		Permit Limitations				Monitoring Requirement	
Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Frequency	Sample Type	Due Date
Flow	MGD	*		*	daily	24 hr. total	The 28th day following the end of the month
BOD	mg/L	120		45	once/month	composite	
BOD	lbs/day	60		22.5	once/month	composite	
COD	mg/L	*		*	once/month	composite	
COD	lbs/day	*		*	once/month	composite	
Oil & Grease	mg/L	15		10	once/month	grab	
pH	SU	6.0 to 9.0		6.0 to 9.0	continuous	continuous	
pH	hours	1		7.43	continuous	calculation	
TSS	mg/L	183		57	once/month	composite	
TSS	lbs/day	91.6		28.5	once/month	composite	

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY.

IF A VIOLATION OCCURRED, PLEASE ATTACH THE FOLLOWING: AN EXPLANATION OF POSSIBLE CAUSE, EXACT DATE OF NON-COMPLIANCE, DATE ANTICIPATED TO RETURN TO COMPLIANCE, AND WHAT STEPS YOUR OPERATION WILL TAKE TO PREVENT A REOCCURRENCE OF THE VIOLATION.

* Monitoring requirement only

*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

DMR SAMPLING SUMMARY

Outfall #002					NO DISCHARGE		
Parameter	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Retained		
Flow	0.009	0.062	0.034	0.023			
BOD	2.6	2.6	2.6	2.6			
BOD	2.85	2.85	2.85	2.85			
COD	40	40	40	40			
COD	5.7	5.7	5.7	5.7			
Oil & Grease	2.14	2.14	2.14	2.14			
pH	6.8	7.5	0.6	7.2			
pH							
TSS	2.4	2.4	2.4	2.4			
TSS	2.57	2.57	2.57	2.57			

THIS DMR EXPIRES ON:
July 31, 2023



MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR WASTEWATER AND/OR STORM WATER DISCHARGES

RETURN FORM TO: Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552

Facility Name	Calumet Missouri LLC
Permit Number	MO-0137243
County	Pike
Facility Type	Stormwater

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall #002, continued		Permit Limitations			Monitoring Requirement		
Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Frequency	Sample Type	Due Date
Effluent Flow (Qe)	cfs	*		*	once/day	calculation	The 28th of the following month
Effluent Temp (Te)	°F	*		*	once/day	calculation	
Stream Flow (Qs)	cfs	*		*	once/day	calculation	
Stream Temp (Ts)	°F	*		*	once/day	calculation	
ΔT	°F	5		*	once/day	calculation	
T (cap)	°F	See permit		*	once/day	calculation	
T (dev)	°F	See permit		*	once/day	calculation	
Time of Dev	hours	*		*	once/day	calculation	

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY.

IF A VIOLATION OCCURRED, PLEASE ATTACH THE FOLLOWING: AN EXPLANATION OF POSSIBLE CAUSE, EXACT DATE OF NON-COMPLIANCE, DATE ANTICIPATED TO RETURN TO COMPLIANCE, AND WHAT STEPS YOUR OPERATION WILL TAKE TO PREVENT A REOCCURRENCE OF THE VIOLATION.

* Monitoring requirement only

DMR SAMPLING SUMMARY

Outfall #002, continued					NO DISCHARGE	
Parameter	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Exceedance	
Effluent Flow (Qe)	0.013	0.095	0.053	0.035		
Effluent Temp (Te)	60	80	73	65		
Stream Flow (Qs)	235840	289325	288300	265268.55		
Stream Temp (Ts)	47	72	70	58		
ΔT	0.0000	0.0000	0.0000	0.0000		
T (cap)	47	72	70	58		
T (dev)	47	72		58		
Time of Dev						

THIS DMR EXPIRES ON:
July 31, 2023



Facility Name	Calumet Missouri LLC
Permit Number	MO-0137243
County	Pike

Data Page 1 of	2
Month:	10
Year:	2019

Outfall #002	STORM WATER										The permittee shall retain records of all monitoring information for a period of at least three (3) years from the date of the sample, measurement, report or application in accordance with Standard Conditions Part I, Section A, #7 - Records Retention.
DATE	Flow MGD	BOD mg/L	BOD lbs/day	COD mg/L	COD lbs/day	Oil & Grease mg/L	pH SU	pH hours	TSS mg/L	TSS lbs/day	
1	0.017	6	0.85	40	5.7	1.4	6.8	0	4	0.57	For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: (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.
2	0.016						6.9	0			
3	0.012						7.0	0			
4	0.011						7.0	0			
5	0.038						6.9	0			
6	0.029						7.0	0			
7	0.009						7.1	0			
8	0.011						7.1	0			
9	0.017						7.0	0			
10	0.041						7.0	0			
11	0.015						7.1	0			
12	0.011						7.2	0			
13	0.011						7.2	0			
14	0.029						7.3	0			
15	0.019						7.3	0			
16	0.017						7.3	0			
17	0.018						7.4	0			
18	0.018						7.5	0			
19	0.014						7.5	0			
20	0.015						7.4	0			
21	0.045						7.5	0			
22	0.013						7.5	0			
23	0.022						7.5	0			
24	0.022						7.5	0			
25	0.024						7.4	0			
26	0.036						7.4	0			
27	0.017						7.5	0			
28	0.024						7.4	0			
29	0.029						7.3	0			
30	0.062						7.3	0			
31	0.039						7.4	0			
TOTAL	0.701	6	0.85	40	5.7	1.4	7.24.6		4	0.57	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 this permit 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 both.
DAILY MINIMUM	0.009	6	0.85	40	5.7	1.4	6.8		4	0.57	
DAILY MAXIMUM	0.062	6	0.85	40	5.7	1.4	7.5		4	0.57	
WEEKLY AVERAGE	0.034	6	0.85	40	5.7	1.4	7.6				
MONTHLY AVERAGE	0.023	6	0.85	40	5.7	1.4	7.2				



Facility Name	Calumet Missouri LLC
Permit Number	MO-0137243
County	Pike

Data Page 2 of	2
Month	10
Year	2019

Outfall #002, continued		STORM WATER								The permittee shall retain records of all monitoring information for a period of at least three (3) years from the date of the sample, measurement, report or application in accordance with Standard Conditions Part I, Section A, #7 - Records Retention.
DATE	Effluent Flow (Qe) cfs	Effluent Temp (Te) °F	Stream Flow (Qs) cfs	Stream Temp (Ts) °F	ΔT °F	T (cap) °F	T (dev) °F	Time of Dev hours		
1	0.027	80	250090	70	0.0000	70	70	0		For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: (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.
2	0.024	75	255150	71	0.0000	71	71	0		
3	0.019	69	250030	72	0.0000	72	72	0		
4	0.018	69	253635	70	0.0000	70	70	0		
5	0.058	72	251930	68	0.0000	68	68	0		
6	0.045	67	252235	66	0.0000	66	66	0		
7	0.013	65	259770	65	0.0000	65	65	0		
8	0.017	66	267715	64	0.0000	64	64	0		
9	0.026	70	274350	63	0.0000	63	63	0		
10	0.064	67	280705	62	0.0000	62	62	0		
11	0.024	61	284980	61	0.0000	61	61	0		
12	0.017	61	285325	59	0.0000	59	59	0		
13	0.018	61	286350	57	0.0000	57	57	0		
14	0.045	66	289325	56	0.0000	56	56	0		
15	0.029	62	288725	56	0.0000	56	56	0		
16	0.026	62	288425	55	0.0000	55	55	0		
17	0.028	63	288500	55	0.0000	55	55	0		
18	0.027	64	288750	54	0.0000	54	54	0		
19	0.021	65	288025	54	0.0000	54	54	0		
20	0.023	66	286700	53	0.0000	53	53	0		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 this permit 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 both.
21	0.069	61	272415	54	0.0000	54	54	0		
22	0.020	60	267800	53	0.0000	53	53	0		
23	0.034	61	262340	53	0.0000	53	53	0		
24	0.033	62	256565	53	0.0000	53	53	0		
25	0.037	64	250820	52	0.0000	52	52	0		
26	0.056	66	246275	51	0.0000	51	51	0		
27	0.026	65	242600	51	0.0000	51	51	0		
28	0.037	65	238925	50	0.0000	50	50	0		
29	0.046	66	235840	50	0.0000	50	50	0		
30	0.095	65	237560	49	0.0000	49	49	0		
31	0.060	63	241470	47	0.0000	47	47	0		
TOTAL	1.084	2029	8223325	1794	0.0002	1794	1794			
DAILY MINIMUM	0.013	60	235840	47	0.0000	47	47			
DAILY MAXIMUM	0.095	80	289325	72	0.0000	72	72			
WEEKLY AVERAGE	0.053	73	288300	70	0.0000	70				
MONTHLY AVERAGE	0.035	65	265268.55	58	0.0000	58	58			



ANALYTICAL RESULTS

Sample: 9100136-01
Name: 002
Matrix: Waste Water - Composite

Sampled: 10/01/19 08:15
Received: 10/01/19 11:40
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
General Chemistry - STL									
BOD	< 6.0	mg/L	B3	10/02/19 08:32	1	6.0	10/07/19 12:06	BCH	SM 5210B
COD	40	mg/L		10/08/19 08:12	1	5.0	10/08/19 18:17	BCH	SM 5220D
Solids - total suspended solids (TSS)	< 4.0	mg/L		10/02/19 08:43	1	4.0	10/02/19 10:09	SJP	SM 2540D

Sample: 9100136-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 10/01/19 08:15
Received: 10/01/19 11:40
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
General Chemistry - PIA									
Phenolics	< 0.0050	mg/L		10/09/19 07:00	1	0.0050	10/10/19 13:40	PMN	EPA 420.4
General Chemistry - STL									
Cyanide	< 0.0050	mg/L		10/08/19 13:04	1	0.0050	10/09/19 11:52	SCI	SM 4500-CN C E
Oil & Grease - total	< 1.4	mg/L		10/04/19 11:16	1.029866	5.1	10/04/19 11:16	JS	EPA 1664

Semivolatile Organics - STL

1,2,4-Trichlorobenzene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
2,4-Dichlorophenol	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
2,4-Dimethylphenol	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
2,4-Dinitrophenol	< 20.0	ug/L		10/01/19 13:10	1	20.0	10/02/19 15:00	MAK	EPA 825
2,4-Dinitrotoluene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
2,6-Dinitrotoluene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
2-Chlorophenol	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
2-Nitrophenol	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
4,6-Dinitro-2-methylphenol	< 50.0	ug/L		10/01/19 13:10	1	50.0	10/02/19 15:00	MAK	EPA 825
4-Nitrophenol	< 20.0	ug/L	Xb	10/01/19 13:10	1	20.0	10/02/19 15:00	MAK	EPA 825
Acenaphthene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
Acenaphthylene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
Anthracene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
Benzo(a)anthracene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825
Benzo(a)pyrene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 825



ANALYTICAL RESULTS

Sample: 9100136-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 10/01/19 08:15
Received: 10/01/19 11:40
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
3,4-Benzofluoranthene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Benzo(k)fluoranthene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Bis(2-ethylhexyl) phthalate	< 10.0	ug/L	Xb	10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Chrysene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Diethyl phthalate	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Dimethyl phthalate	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Di-n-butyl phthalate	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Fluoranthene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Fluorene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Hexachlorobenzene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Hexachlorobutadiene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Hexachloroethane	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Naphthalene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Nitrobenzene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Phenanthrene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Phenol	< 10.0	ug/L	X	10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625
Pyrene	< 10.0	ug/L		10/01/19 13:10	1	10.0	10/02/19 15:00	MAK	EPA 625

Total Metals - STL

Chromium	< 0.0020	mg/L		10/02/19 15:22	1	0.0020	10/03/19 10:41	JMW1	EPA 200.7
Copper	0.0036	mg/L		10/02/19 15:22	1	0.0020	10/03/19 10:41	JMW1	EPA 200.7
Lead	< 0.010	mg/L		10/02/19 15:22	1	0.010	10/03/19 10:41	JMW1	EPA 200.7
Nickel	0.0067	mg/L		10/02/19 15:22	1	0.0020	10/03/19 10:41	JMW1	EPA 200.7
Zinc	0.048	mg/L		10/02/19 15:22	1	0.010	10/03/19 10:41	JMW1	EPA 200.7

Volatile Organics - PIA

1,1,1-Trichloroethane	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,1,2,2-Tetrachloroethane	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,1,2-Trichloroethane	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,1-Dichloroethane	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,1-Dichloroethene	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
m,p-Xylene	< 10	ug/L		10/07/19 06:55	1	10	10/07/19 17:59	JJI	EPA 624*
o-Xylene	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624*
Xylenes- Total	< 15	ug/L		10/07/19 06:55	1	15	10/07/19 17:59	JJI	EPA 624*
1,2-Dichlorobenzene	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,2-Dichloroethane	< 5.0	ug/L		10/07/19 06:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,3-Dichloropropene - Total	< 15	ug/L		10/07/19 06:55	1	15	10/07/19 17:59	JJI	EPA 624*



ANALYTICAL RESULTS

Sample: 9100136-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 10/01/19 08:15
Received: 10/01/19 11:40
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
1,2-Dichloropropane	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,3-Dichlorobenzene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
1,4-Dichlorobenzene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
trans-1,2-Dichloroethene	< 20	ug/L		10/07/19 08:55	1	20	10/07/19 17:59	JJI	EPA 624*
Acrolein	< 50	ug/L		10/07/19 08:55	1	50	10/07/19 17:59	JJI	EPA 624
Acrylonitrile	< 50	ug/L		10/07/19 08:55	1	50	10/07/19 17:59	JJI	EPA 624
Benzene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Bromodichloromethane	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Bromoform	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Bromomethane	< 10	ug/L		10/07/19 08:55	1	10	10/07/19 17:59	JJI	EPA 624
Carbon tetrachloride	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Chlorobenzene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Chloroethane	< 10	ug/L		10/07/19 08:55	1	10	10/07/19 17:59	JJI	EPA 624
Chloroform	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Chloromethane	< 10	ug/L		10/07/19 08:55	1	10	10/07/19 17:59	JJI	EPA 624
Dibromochloromethane	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
trans-1,2-Dichloroethene	< 20	ug/L		10/07/19 08:55	1	20	10/07/19 17:59	JJI	EPA 624
Ethylbenzene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Methylene chloride	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Tetrachloroethene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Toluene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Trichloroethene	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624
Vinyl chloride	< 5.0	ug/L		10/07/19 08:55	1	5.0	10/07/19 17:59	JJI	EPA 624

	Gal/day	mgd	pH
10/1/2019	17,222	0.017	6.8
10/2/2019	15,759	0.016	6.9
10/3/2019	11,993	0.012	7.0
10/4/2019	11,418	0.011	7.0
10/5/2019	37,738	0.038	6.9
10/6/2019	28,851	0.029	7.0
10/7/2019	8,561	0.009	7.1
10/8/2019	10,803	0.011	7.1
10/9/2019	16,745	0.017	7.0
10/10/2019	41,410	0.041	7.0
10/11/2019	15,394	0.015	7.1
10/12/2019	11,255	0.011	7.2
10/13/2019	11,326	0.011	7.2
10/14/2019	29,309	0.029	7.3
10/15/2019	19,028	0.019	7.3
10/16/2019	16,727	0.017	7.3
10/17/2019	18,381	0.018	7.4
10/18/2019	17,569	0.018	7.5
10/19/2019	13,777	0.014	7.5
10/20/2019	14,825	0.015	7.4
10/21/2019	44,766	0.045	7.5
10/22/2019	13,053	0.013	7.5
10/23/2019	21,912	0.022	7.5
10/24/2019	21,636	0.022	7.5
10/25/2019	24,172	0.024	7.4
10/26/2019	36,330	0.036	7.4
10/27/2019	16,918	0.017	7.5
10/28/2019	24,165	0.024	7.4
10/29/2019	29,471	0.029	7.3
10/30/2019	61,548	0.062	7.3
10/31/2019	38,536	0.039	7.4

	A	B	C	D	E	F	G	H	I	J	K
1	Discharge and Stream Flow and Temperature: Calculated delta Temperature and Mixing Zone Edge Temperature										
2	Date	Effluent Vol. Flow	Effluent Temp.	Stream Flow, Pnt. 1	Stream Flow, Pnt. 2	Stream Flow, Avg.	Stream Temp.		ΔT	T _{end}	
3		cfs	°F	cfs	cfs	cfs	°F		°F	°F	
1318	Monday, September 30, 2019	0.02658	79	222,840	259,000	240,970	71		0.00	71	
1319	Tuesday, October 1, 2019	0.02665	80	230,180	270,000	250,090	70		0.00	70	
1320	Wednesday, October 2, 2019	0.02438	75	228,300	282,000	255,150	71		0.00	71	
1321	Thursday, October 3, 2019	0.01856	69	217,060	283,000	250,030	72		0.00	72	
1322	Friday, October 4, 2019	0.01767	69	224,270	283,000	253,635	70		0.00	70	
1323	Saturday, October 5, 2019	0.05839	72	219,860	284,000	251,930	68		0.00	68	
1324	Sunday, October 6, 2019	0.04464	67	221,470	283,000	252,235	66		0.00	66	
1325	Monday, October 7, 2019	0.01325	65	232,540	287,000	259,770	65		0.00	65	
1326	Tuesday, October 8, 2019	0.01671	66	242,430	293,000	267,715	64		0.00	64	
1327	Wednesday, October 9, 2019	0.02591	70	249,700	299,000	274,350	63		0.00	63	
1328	Thursday, October 10, 2019	0.06407	67	255,410	306,000	280,705	62		0.00	62	
1329	Friday, October 11, 2019	0.02382	61	256,960	313,000	284,980	61		0.00	61	
1330	Saturday, October 12, 2019	0.01741	61	257,650	313,000	285,325	59		0.00	59	
1331	Sunday, October 13, 2019	0.01752	61	257,700	315,000	286,350	57		0.00	57	
1332	Monday, October 14, 2019	0.04535	66	257,650	321,000	289,325	56		0.00	56	
1333	Tuesday, October 15, 2019	0.02944	62	258,450	319,000	288,725	56		0.00	56	
1334	Wednesday, October 16, 2019	0.02588	62	260,850	316,000	288,425	55		0.00	55	
1335	Thursday, October 17, 2019	0.02844	63	262,000	315,000	288,500	55		0.00	55	
1336	Friday, October 18, 2019	0.02718	64	262,500	315,000	288,750	54		0.00	54	
1337	Saturday, October 19, 2019	0.02132	65	262,050	314,000	288,025	54		0.00	54	
1338	Sunday, October 20, 2019	0.02294	66	260,400	313,000	286,700	53		0.00	53	
1339	Monday, October 21, 2019	0.06926	61	257,830	287,000	272,415	54		0.00	54	
1340	Tuesday, October 22, 2019	0.02020	60	251,600	284,000	267,800	53		0.00	53	
1341	Wednesday, October 23, 2019	0.03390	61	244,680	280,000	262,340	53		0.00	53	
1342	Thursday, October 24, 2019	0.03348	62	239,130	274,000	256,565	53		0.00	53	
1343	Friday, October 25, 2019	0.03740	64	233,640	268,000	250,820	52		0.00	52	
1344	Saturday, October 26, 2019	0.05621	66	229,550	263,000	246,275	51		0.00	51	
1345	Sunday, October 27, 2019	0.02618	65	227,200	258,000	242,600	51		0.00	51	
1346	Monday, October 28, 2019	0.03739	65	224,850	253,000	238,925	50		0.00	50	
1347	Tuesday, October 29, 2019	0.04560	66	223,680	248,000	235,840	50		0.00	50	
1348	Wednesday, October 30, 2019	0.09523	65	224,120	251,000	237,560	49		0.00	49	
1349	Thursday, October 31, 2019	0.05962	63	225,940	257,000	241,470	47		0.00	47	

Facility Name	Calumet Missouri LLC												Current Address				Owner ☐ Billing ☐				Address Change For: Owner ☐ Billing ☐											
Permit Number	MO-0137243												11089 Highway D																			
County	Pike												Louisiana, MO 63553																			
Facility Type	Stormwater																															
REPORTING PERIOD:																THIS REPORT COVERS THE PERIOD OF: Place an "X" in the box beneath the appropriate month(s)																
CHECK BOX IF NO DISCHARGE OCCURS DURING REPORT PERIOD																January	February	March	April	May	June	July	August	September	October	November	December	Year				
SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL IN ACCORDANCE WITH 10 CSR 20-6.010(2)(C)																☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	2019			
																DATE				PHONE NUMBER E-MAIL ADDRESS (Optional)												
																HSE Manager				573-754-6211				mike.duffey@clmt.com								

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall #002		Permit Limitations				Monitoring Requirement			
Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Frequency	Sample Type	Due Date		
Flow	MGD	*		*	daily	24 hr. total	The 28th day following the end of the month		
BOD	mg/L	120		45	once/month	composite			
BOD	lbs/day	60		22.5	once/month	composite			
COD	mg/L	*		*	once/month	composite			
COD	lbs/day	*		*	once/month	composite			
Oil & Grease	mg/L	15		10	once/month	grab			
pH	SU	6.0 to 9.0		6.0 to 9.0	continuous	continuous			
pH	hours	1		7.43	continuous	calculation			
TSS	mg/L	183		57	once/month	composite			
TSS	lbs/day	91.6		28.5	once/month	composite			

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY.

IF A VIOLATION OCCURRED, PLEASE ATTACH THE FOLLOWING: AN EXPLANATION OF POSSIBLE CAUSE, EXACT DATE OF NON-COMPLIANCE, DATE ANTICIPATED TO RETURN TO COMPLIANCE, AND WHAT STEPS YOUR OPERATION WILL TAKE TO PREVENT A REOCCURRENCE OF THE VIOLATION.

* Monitoring requirement only

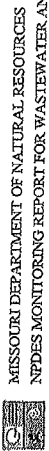
*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

DMR SAMPLING SUMMARY

Outfall #002		NO DISCHARGE				Percent Runoff
Parameter	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average		
Flow	0.016	0.051	0.030	0.026		
BOD	6	6	6	6		
BOD	1	1	1	1		
COD	34	34	34	34		
COD	5.4	5.4	5.4	5.4		
Oil & Grease	1.4	1.4	1.4	1.4		
pH	7.4	8.1	0.6	7.8		
pH						
TSS	4	4		4		
TSS	0.6	0.6		0.6		

THIS DMR EXPIRES ON:
July 31, 2023

DMR Page 1 of 2



RETURN FORM TO: Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall #002, continued		Permit Limitations			Monitoring Requirement		
Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Frequency	Sample Type	Due Date
Effluent Flow (Qe)	cfs	*		*	once/day	calculation	
Effluent Temp (Te)	°F	*		*	once/day	calculation	
Stream Flow (Qs)	cfs	*		*	once/day	calculation	
Stream Temp (Ts)	°F	*		*	once/day	calculation	
ΔT	°F	5		*	once/day	calculation	
T (cap)	°F	See permit		*	once/day	calculation	
T (dev)	°F	See permit		*	once/day	calculation	The 28th of the following month
Time of Dev	hours	*		*	once/day	calculation	

IF A VIOLATION OCCURRED, PLEASE ATTACH THE FOLLOWING: AN EXPLANATION OF POSSIBLE CAUSE, EXACT DATE OF NON-COMPLIANCE, DATE ANTICIPATED TO RETURN TO COMPLIANCE, AND WHAT STEPS YOUR OPERATION WILL TAKE TO PREVENT A REOCCURRENCE OF THE VIOLATION.

... TO PREVENT A REOCCURRENCE OF THE VIOLATION.

DMR SAMPLING SUMMARY

Outfall #002, continued			NO DISCHARGE			☐
Parameter	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal	
Effluent Flow (Qe)	0.024	0.079	0.046	0.040		
Effluent Temp (Te)	53	68	65	63		
Stream Flow (Qs)	134075	241970	240950	184488.83		
Stream Temp (Ts)	35	46	46	40		
ΔT	0.0000	0.0000	0.0000	0.0000		
T (cap)	35	46	46	40		
T (dev)	35	46		40		
Time of Dev						

July 31, 2023



Facility Name	Calumet Missouri LLC
Permit Number	MO-0137243
County	Pike

Data Page 1 of	2
Month:	11
Year:	2019

Outfall #002	STORM WATER										The permittee shall retain records of all monitoring information for a period of at least three (3) years from the date of the sample, measurement, report or application in accordance with Standard Conditions Part I, Section A, #7 - Records Retention.
DATE	Flow MGD	BOD mg/L	BOD lbs/day	COD mg/L	COD lbs/day	Oil & Grease mg/L	pH SU	pH hours	TSS mg/L	TSS lbs/day	
1	0.026						7.4				For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: (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.
2	0.020						7.5				
3	0.024						7.5				
4	0.019						7.6				
5	0.019	< 6	< 1	34	5.4	< 1.4	7.5	0	< 4	< 0.6	
6	0.026						7.6				
7	0.020						7.6				
8	0.022						7.6				
9	0.024						7.7				
10	0.016						7.7				
11	0.026						7.8				
12	0.022						7.7				
13	0.032						7.7				
14	0.027						7.8				
15	0.025						7.9				
16	0.026						7.8				
17	0.030						7.9				
18	0.025						7.9				
19	0.022						7.9				
20	0.030						7.8				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 this permit 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 both.
21	0.031						7.9				
22	0.030						7.9				
23	0.031						8.0				
24	0.024						8.0				
25	0.025						8.0				
26	0.021						8.1				
27	0.023						8.1				
28	0.028						8.0				
29	0.037						8.0				
30	0.051						8.1				
31											
TOTAL	0.782	< 6	< 1	34	5.4	1.4	233.8		4	0.6	
DAILY MINIMUM	0.016	< 6	< 1	34	5.4	< 1.4	7.4		< 4	< 0.6	
DAILY MAXIMUM	0.051	< 6	< 1	34	5.4	< 1.4	8.1		< 4	< 0.6	
WEEKLY AVERAGE	0.030	< 6	< 1	34	5.4	1.4	8.0				
MONTHLY AVERAGE	0.026	< 6	< 1	34	5.4	1.4	7.8		4	0.6	

	Gal/day	mgd	pH
11/1/2019	26,323	0.026	7.4
11/2/2019	20,082	0.020	7.5
11/3/2019	23,557	0.024	7.5
11/4/2019	18,881	0.019	7.6
11/5/2019	19,177	0.019	7.5
11/6/2019	25,755	0.026	7.6
11/7/2019	19,536	0.020	7.6
11/8/2019	21,969	0.022	7.6
11/9/2019	23,833	0.024	7.7
11/10/2019	15,789	0.016	7.7
11/11/2019	25,648	0.026	7.8
11/12/2019	21,649	0.022	7.7
11/13/2019	31,811	0.032	7.7
11/14/2019	26,893	0.027	7.8
11/15/2019	25,317	0.025	7.9
11/16/2019	26,033	0.026	7.8
11/17/2019	30,065	0.030	7.9
11/18/2019	25,275	0.025	7.9
11/19/2019	22,018	0.022	7.9
11/20/2019	30,071	0.030	7.8
11/21/2019	31,426	0.031	7.9
11/22/2019	30,254	0.030	7.9
11/23/2019	30,587	0.031	8.0
11/24/2019	24,380	0.024	8.0
11/25/2019	25,220	0.025	8.0
11/26/2019	21,271	0.021	8.1
11/27/2019	22,887	0.023	8.1
11/28/2019	27,794	0.028	8.0
11/29/2019	36,902	0.037	8.0
11/30/2019	51,121	0.051	8.1

Gal/day mgd

pH

	A	B	C	D	E	F	G	H	I	J	K
1	Discharge and Stream Flow and Temperature: Calculated delta Temperature and Mixing Zone Edge Temperature										
2	Date	Effluent Vol. Flow	Effluent Temp.	Stream Flow, Pnt. 1	Stream Flow, Pnt. 2	Stream Flow, Avg.	Stream Temp.		ΔT	T _{mix}	
3		cfs	°F	cfs	cfs	cfs	°F		°F	°F	
1350	Friday, November 1, 2019	0.04073	64	222,940	261,000	241,970	46		0.00	46	
1351	Saturday, November 2, 2019	0.03107	63	219,860	260,000	239,930	45		0.00	45	
1352	Sunday, November 3, 2019	0.03645	65	216,640	258,000	237,320	45		0.00	45	
1353	Monday, November 4, 2019	0.02921	63	212,510	255,000	233,755	45		0.00	45	
1354	Tuesday, November 5, 2019	0.02967	66	209,830	253,000	231,415	44		0.00	44	
1355	Wednesday, November 6, 2019	0.03985	61	207,020	251,000	229,010	45		0.00	45	
1356	Thursday, November 7, 2019	0.03023	62	203,440	248,000	225,720	45		0.00	45	
1357	Friday, November 8, 2019	0.03399	62	198,600	244,000	221,300	44		0.00	44	
1358	Saturday, November 9, 2019	0.03688	66	192,720	241,000	216,860	42		0.00	42	
1359	Sunday, November 10, 2019	0.02443	61	187,100	237,000	212,050	42		0.00	42	
1360	Monday, November 11, 2019	0.03968	53	180,870	231,000	205,935	42		0.00	42	
1361	Tuesday, November 12, 2019	0.03350	57	175,240	224,000	199,620	40		0.00	40	
1362	Wednesday, November 13, 2019	0.04922	61	169,800	218,000	193,900	38		0.00	38	
1363	Thursday, November 14, 2019	0.04161	60	165,980	213,000	189,490	36		0.00	36	
1364	Friday, November 15, 2019	0.03917	61	161,370	205,000	183,185	36		0.00	36	
1365	Saturday, November 16, 2019	0.04028	65	154,360	176,000	165,180	35		0.00	35	
1366	Sunday, November 17, 2019	0.04652	64	148,150	120,000	134,075	35		0.00	35	
1367	Monday, November 18, 2019	0.03911	66	142,670	160,000	151,335	36		0.00	36	
1368	Tuesday, November 19, 2019	0.03407	64	134,390	144,000	139,195	36		0.00	36	
1369	Wednesday, November 20, 2019	0.04653	68	130,720	153,000	141,860	37		0.00	37	
1370	Thursday, November 21, 2019	0.04862	63	131,260	167,000	149,130	38		0.00	38	
1371	Friday, November 22, 2019	0.04681	64	131,800	174,000	152,900	38		0.00	38	
1372	Saturday, November 23, 2019	0.04733	63	131,800	184,000	157,900	39		0.00	39	
1373	Sunday, November 24, 2019	0.03772	65	126,910	167,000	146,955	38		0.00	38	
1374	Monday, November 25, 2019	0.03902	65	127,720	177,000	152,360	39		0.00	39	
1375	Tuesday, November 26, 2019	0.03291	61	131,400	170,000	150,700	39		0.00	39	
1376	Wednesday, November 27, 2019	0.03541	61	132,600	170,000	151,300	40		0.00	40	
1377	Thursday, November 28, 2019	0.04300	64	130,310	168,000	149,155	40		0.00	40	
1378	Friday, November 29, 2019	0.05710	67	135,340	180,000	157,670	40		0.00	40	
1379	Saturday, November 30, 2019	0.07910	64	144,980	202,000	173,490	39		0.00	39	



ANALYTICAL RESULTS

Sample: 9110448-01
Name: 002 comp
Matrix: Waste Water - Composite

Sampled: 11/05/19 08:30
Received: 11/05/19 11:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>General Chemistry - PIA</u>									
COD	34	mg/L		11/11/19 08:06	1	6.0	11/11/19 08:06	KCC	SM 5220D
<u>General Chemistry - STL</u>									
BOD	< 6.0	mg/L		11/06/19 08:03	1	6.0	11/06/19 08:03	SCI	SM 5210B
Solids - total suspended solids (TSS)	< 4.0	mg/L		11/06/19 08:06	1	4.0	11/07/19 11:48	SJP	SM 2540D

Sample: 9110448-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 11/05/19 08:35
Received: 11/05/19 11:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>General Chemistry - PIA</u>									
Phenolics ✓	0.010	mg/L		11/07/19 06:57	1	0.0050	11/07/19 13:45	PMN	EPA 420.4
<u>General Chemistry - STL</u>									
Cyanide ✓	< 0.0050	mg/L		11/05/19 09:31	1	0.0050	11/05/19 17:21	SCI	SM 4500-CN C E
Oil & Grease - total	< 1.4	mg/L		11/08/19 07:48	1.01833	5.1	11/08/19 07:48	KAM	EPA 1664
<u>Semivolatile Organics - PIA</u>									
Phenol ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
2-Chlorophenol ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Hexachloroethane ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Nitrobenzene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
2-Nitrophenol ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
2,4-Dimethylphenol ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
2,4-Dichlorophenol ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
1,2,4-Trichlorobenzene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Naphthalene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Hexachlorobutadiene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Dimethyl phthalate ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
2,6-Dinitrotoluene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Acenaphthylene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825
Acenaphthene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 825



ANALYTICAL RESULTS

Sample: 9110448-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 11/05/19 08:35
Received: 11/05/19 11:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
2,4-Dinitrophenol	< 20	ug/L		11/08/19 13:07	1	20	11/11/19 17:28	CRS	EPA 625
4-Nitrophenol ✓	< 20	ug/L		11/08/19 13:07	1	20	11/11/19 17:28	CRS	EPA 625
2,4-Dinitrotoluene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Diethyl phthalate ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Fluorene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
4,6-Dinitro-2-methylphenol ✓	< 50	ug/L		11/08/19 13:07	1	50	11/11/19 17:28	CRS	EPA 625
N-Nitrosodiphenylamine	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
1,2-Diphenylhydrazine	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625*
Hexachlorobenzene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Phenanthrene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Anthracene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Di-n-butyl phthalate ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Fluoranthene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Pyrene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Benzo(a)anthracene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Chrysene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Bis(2-ethylhexyl) phthalate ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
3,4-Benzofluoranthene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Benzo(k)fluoranthene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625
Benzo(a)pyrene ✓	< 10	ug/L		11/08/19 13:07	1	10	11/11/19 17:28	CRS	EPA 625

Total Metals - STL

Chromium ✓	< 0.0020	mg/L		11/06/19 10:15	1	0.0020	11/06/19 16:04	JMW1	EPA 200.7
Copper ✓	0.0023	mg/L		11/06/19 10:15	1	0.0020	11/06/19 16:04	JMW1	EPA 200.7
Lead ✓	< 0.010	mg/L		11/06/19 10:15	1	0.010	11/06/19 16:04	JMW1	EPA 200.7
Nickel ✓	0.0043	mg/L		11/06/19 10:15	1	0.0020	11/06/19 16:04	JMW1	EPA 200.7
Zinc ✓	0.016	mg/L		11/06/19 10:15	1	0.010	11/06/19 16:04	JMW1	EPA 200.7

Volatile Organics - PIA

1,1,1-Trichloroethane ✓	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
1,1,2-Trichloroethane ✓	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
1,1-Dichloroethane ✓	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
1,1-Dichloroethylene ✓	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
m,p-Xylene	< 10	ug/L		11/11/19 08:52	1	10	11/11/19 16:56	JJI	EPA 624*
o-Xylene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624*
Xylenes- Total	< 15	ug/L		11/11/19 08:52	1	15	11/11/19 16:56	JJI	EPA 624*
1,2-Dichlorobenzene ✓	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624



ANALYTICAL RESULTS

Sample: 9110448-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 11/05/19 08:35
Received: 11/05/19 11:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
1,2-Dichloroethane	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
1,2-Dichloropropane	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
1,3-Dichlorobenzene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
1,4-Dichlorobenzene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
trans-1,2-Dichloroethene	< 20	ug/L		11/11/19 08:52	1	20	11/11/19 16:56	JJI	EPA 624*
Acrylonitrile	< 50	ug/L		11/11/19 08:52	1	50	11/11/19 16:56	JJI	EPA 624
Benzene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Carbon tetrachloride	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
cis-1,3-Dichloropropylene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Chlorobenzene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Chloroethane	< 10	ug/L		11/11/19 08:52	1	10	11/11/19 16:56	JJI	EPA 624
Chloroform	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Methyl chloride	< 10	ug/L		11/11/19 08:52	1	10	11/11/19 16:56	JJI	EPA 624
Dichloroethylene, trans-1,2-	< 20	ug/L		11/11/19 08:52	1	20	11/11/19 16:56	JJI	EPA 624
Ethylbenzene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Methylene chloride	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Tetrachloroethene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Toluene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Trichloroethylene	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624
Vinyl chloride	< 5.0	ug/L		11/11/19 08:52	1	5.0	11/11/19 16:56	JJI	EPA 624

Sample: 9110448-02RE1
Name: 002
Matrix: Waste Water - Grab

Sampled: 11/05/19 08:35
Received: 11/05/19 11:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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General Chemistry - PIA

Phenolics	0.010	mg/L		11/12/19 15:35	1	0.0050	11/14/19 14:23	PMN	EPA 420.4
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Facility Name	Calumet Missouri LLC												Current Address:	Owner	Billing	Address Change For: Owner	Billing
Permit Number	MO-0137243												11089 Highway D				
County	Pike												Louisiana, MO 63353				
Facility Type	Stormwater																
REPORTING PERIOD:	January	February	March	April	May	June	July	August	September	October	November	December	Year				
CHECK BOX IF NO DISCHARGE OCCURS DURING REPORT PERIOD	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	2019				
SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL IN ACCORDANCE WITH 10 CSR 20-6.01(2)(C)	HSE Manager												PHONE NUMBER E-MAIL ADDRESS (Optional)				
													573-754-6211 nlike.duffey@clint.com				

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall #002		Permit Limitations					Monitoring Requirement		
Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Frequency	Sample Type	Due Date		
Flow	MGD	*		*	daily	24 hr. total	The 28th day following the end of the month		
BOD	mg/L	120		45	once/month	composite			
BOD	lbs/day	60		22.5	once/month	composite			
COD	mg/L	*		*	once/month	composite			
COD	lbs/day	*		*	once/month	composite			
Oil & Grease	mg/L	15		10	once/month	grab			
pH	SU	6.0 to 9.0		6.0 to 9.0	continuous	continuous			
pH	hours	1		7.43	continuous	calculation			
TSS	mg/L	183		57	once/month	composite			
TSS	lbs/day	91.6		28.5	once/month	composite			

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY.

IF A VIOLATION OCCURRED, PLEASE ATTACH THE FOLLOWING: AN EXPLANATION OF POSSIBLE CAUSE, EXACT DATE OF NON-COMPLIANCE, DATE ANTICIPATED TO RETURN TO COMPLIANCE, AND WHAT STEPS YOUR OPERATION WILL TAKE TO PREVENT A REOCCURRENCE OF THE VIOLATION.

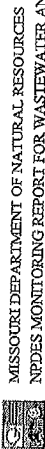
* Monitoring requirement only

*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

DMR SAMPLING SUMMARY

Outfall #002		NO DISCHARGE					Percent Removal
Parameter	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average			
Flow	10612	62863	51745	21964			
BOD	4.4	4.4	4.4	4.4			
BOD	0.43	0.43	0.43	0.43			
COD	41	41	41	41			
COD	4.4	4.4	4.4	4.4			
Oil & Grease	3.1	3.1	3.1	3.1			
pH	8.1	8.4	0.6	8.2			
pH							
TSS	5.2	5.2		5.2			
TSS	0.56	0.56		0.56			

THIS DMR EXPIRES ON:
July 31, 2023



RETURN FORM TO: Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY.

* Monitoring requirement only

EDMR SAMPLING SUMMARY

THIS DMR EXPIRES ON:
July 31, 2023



Facility Name	Calumet Missouri LLC
Permit Number	MO-0137243
County	Pike

Data Page 2 of 2	
Month	12
Year	2019

Outfall #002, continued	STORM WATER										The permittee shall retain records of all monitoring information for a period of at least three (3) years from the date of the sample, measurement, report or application in accordance with Standard Conditions Part I, Section A, #7 - Records Retention.
	Effluent Flow (Qe)	Effluent Temp (Te)	Stream Flow (Qs)	Stream Temp (Ts)	ΔT	T (cap)	T (dev)	Time of Dev			
DATE	cfs	°F	cfs	°F	°F	°F	°F	hours			
1	0.034	60	187680	40	0.0000	40	40	0			For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: (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.
2	0.019	59	183895	39	0.0000	39	39	0			
3	0.028	63	170400	38	0.0000	38	38	0			
4	0.020	61	161285	38	0.0000	38	38	0			
5	0.028	58	167250	38	0.0000	38	38	0			
6	0.017	61	171195	39	0.0000	39	39	0			
7	0.042	63	167750	38	0.0000	38	38	0			
8	0.026	64	168110	38	0.0000	38	38	0			
9	0.026	59	164195	38	0.0000	38	38	0			
10	0.034	58	160435	37	0.0000	37	37	0			
11	0.038	60	156260	37	0.0000	37	37	0			
12	0.029	61	149770	35	0.0000	35	35	0			
13	0.016	60	141750	35	0.0000	35	35	0			
14	0.027	59	135375	35	0.0000	35	35	0			
15	0.038	59	124710	34	0.0000	34	34	0			
16	0.040	58	114980	33	0.0000	33	33	0			
17	0.034	58	103669.5	32	0.0000	32	32	0			
18	0.034	58	97670	32	0.0000	32	32	0			
19	0.030	61	84458.5	32	0.0000	32	32	0			
20	0.022	61	93653	32	0.0000	32	32	0			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 this permit 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 both.
21	0.028	62	104190	32	0.0000	32	32	0			
22	0.024	61	108667	32	0.0000	32	32	0			
23	0.041	65	112060	33	0.0000	33	33	0			
24	0.031	65	124440	33	0.0000	33	33	0			
25	0.030	67	120960	34	0.0000	34	34	0			
26	0.022	63	117340	35	0.0000	35	35	0			
27	0.025	65	119340	37	0.0000	37	37	0			
28	0.031	65	133780	37	0.0000	37	37	0			
29	0.091	63	143160	39	0.0001	39	39	0			
30	0.097	60	166300	40	0.0000	40	40	0			
31	0.052	60	173730	39	0.0000	39	39	0			
TOTAL	1.053	1895	4328458	1111	0.0008	1111	1111	0			
DAILY MINIMUM	0.016	58	84459	32	0.0000	32	32	0			
DAILY MAXIMUM	0.097	67	187680	40	0.0001	40	40	0			
WEEKLY AVERAGE	0.080	64	172779	39	0.0000	39		0			
MONTHLY AVERAGE	0.034	61	139628	36	0.0000	36	36	0			



Facility Name	Calumet Missouri LLC
Permit Number	MO-0137243
County	Pike

Data Page 1 of	2
Month:	12
Year:	2019

Outfall #002	STORM WATER										The permittee shall retain records of all monitoring information for a period of at least three (3) years from the date of the sample, measurement, report or application in accordance with Standard Conditions Part I, Section A, #7 - Records Retention.
DATE	Flow MGD	BOD mg/L	BOD lbs/day	COD mg/L	COD lbs/day	Oil & Grease mg/L	pH SU	pH hours	TSS mg/L	TSS lbs/day	
1	22130						8.1	0			For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: (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.
2	12214						8.2	0			
3	18048						8.2	0			
4	12819	< 4	< 0.43	41	4.4	< 3.1	8.2	0	5.2	0.56	
5	18231						8.2	0			
6	10736						8.2	0			
7	26946						8.2	0			
8	16690						8.2	0			
9	16821						8.2	0			
10	21839						8.2	0			
11	24831						8.2	0			
12	18835						8.2	0			
13	10612						8.3	0			
14	17683						8.3	0			
15	24283						8.2	0			
16	25801						8.2	0			
17	22250						8.2	0			
18	22236						8.2	0			
19	19110						8.2	0			
20	13926						8.2	0			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 this permit 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 both.
21	17812						8.2	0			
22	15562						8.2	0			
23	26253						8.2	0			
24	20229						8.2	0			
25	19174						8.2	0			
26	14527						8.2	0			
27	16272						8.2	0			
28	19770						8.3	0			
29	58667						8.2	0			
30	62863						8.4	0			
31	33704						8.4	0			
TOTAL	680874	< 4	< 0.43	41	4.4	3.1	8.3		5.2	0.56	
DAILY MINIMUM	10612	< 4	< 0.43	41	4.4	< 3.1	8.1		5.2	0.56	
DAILY MAXIMUM	62863	< 4	< 0.43	41	4.4	< 3.1	8.4		5.2	0.56	
WEEKLY AVERAGE	51745	< 4	< 0.43	41	4.4	3.1	8.3				
MONTHLY AVERAGE	21964	< 4	< 0.43	41	4.4	3.1	8.2		5.2	0.56	

	Gal/day	mgd	pH
12/1/2019	22,130	0.022	8.1
12/2/2019	12,214	0.012	8.2
12/3/2019	18,048	0.018	8.2
12/4/2019	12,819	0.013	8.2
12/5/2019	18,231	0.018	8.2
12/6/2019	10,736	0.011	8.2
12/7/2019	26,946	0.027	8.2
12/8/2019	16,690	0.017	8.2
12/9/2019	16,821	0.017	8.2
12/10/2019	21,839	0.022	8.2
12/11/2019	24,831	0.025	8.2
12/12/2019	18,835	0.019	8.2
12/13/2019	10,612	0.011	8.3
12/14/2019	17,683	0.018	8.3
12/15/2019	24,283	0.024	8.2
12/16/2019	25,801	0.026	8.2
12/17/2019	22,250	0.022	8.2
12/18/2019	22,236	0.022	8.2
12/19/2019	19,110	0.019	8.2
12/20/2019	13,926	0.014	8.2
12/21/2019	17,812	0.018	8.2
12/22/2019	15,562	0.016	8.2
12/23/2019	26,253	0.026	8.2
12/24/2019	20,229	0.020	8.2
12/25/2019	19,174	0.019	8.2
12/26/2019	14,527	0.015	8.2
12/27/2019	16,272	0.016	8.2
12/28/2019	19,770	0.020	8.3
12/29/2019	58,667	0.059	8.2
12/30/2019	62,863	0.063	8.4
12/31/2019	33,704	0.034	8.4

Gal/day mgd

pH

	A	B	C	D	E	F	G	H	I	J	K
1	Discharge and Stream Flow and Temperature: Calculated delta Temperature and Mixing Zone Edge Temperature										
2	Date	Effluent Vol. Flow	Effluent Temp.	Stream Flow, Pnt. 1	Stream Flow, Pnt. 2	Stream Flow, Avg.	Stream Temp.		ΔT	T _{emz}	
3		cfs	°F	cfs	cfs	cfs	°F		°F	°F	
1379	Saturday, November 30, 2019	0.07910	64	144,980	202,000	173,490	39		0.00	39	
1380	Sunday, December 1, 2019	0.03424	60	157,360	218,000	187,680	40		0.00	40	
1381	Monday, December 2, 2019	0.01890	59	154,790	213,000	183,895	39		0.00	39	
1382	Tuesday, December 3, 2019	0.02792	63	148,800	192,000	170,400	38		0.00	38	
1383	Wednesday, December 4, 2019	0.01983	61	144,570	178,000	161,285	38		0.00	38	
1384	Thursday, December 5, 2019	0.02821	58	146,500	188,000	167,250	38		0.00	38	
1385	Friday, December 6, 2019	0.01661	61	145,390	197,000	171,195	39		0.00	39	
1386	Saturday, December 7, 2019	0.04169	63	146,500	189,000	167,750	38		0.00	38	
1387	Sunday, December 8, 2019	0.02582	64	146,220	190,000	168,110	38		0.00	38	
1388	Monday, December 9, 2019	0.02603	59	145,390	183,000	164,195	38		0.00	38	
1389	Tuesday, December 10, 2019	0.03379	58	139,870	181,000	160,435	37		0.00	37	
1390	Wednesday, December 11, 2019	0.03842	60	134,520	178,000	156,260	37		0.00	37	
1391	Thursday, December 12, 2019	0.02914	61	128,540	171,000	149,770	35		0.00	35	
1392	Friday, December 13, 2019	0.01642	60	121,500	162,000	141,750	35		0.00	35	
1393	Saturday, December 14, 2019	0.02736	59	115,750	153,000	135,375	35		0.00	35	
1394	Sunday, December 15, 2019	0.03757	59	108,420	141,000	124,710	34		0.00	34	
1395	Monday, December 16, 2019	0.03992	58	103,960	126,000	114,980	33		0.00	33	
1396	Tuesday, December 17, 2019	0.03443	58	93,339	114,000	103,670	32		0.00	32	
1397	Wednesday, December 18, 2019	0.03440	58	82,340	113,000	97,670	32		0.00	32	
1398	Thursday, December 19, 2019	0.02957	61	70,117	98,800	84,459	32		0.00	32	
1399	Friday, December 20, 2019	0.02155	61	76,306	111,000	93,653	32		0.00	32	
1400	Saturday, December 21, 2019	0.02756	62	91,380	117,000	104,190	32		0.00	32	
1401	Sunday, December 22, 2019	0.02408	61	92,334	125,000	108,667	32		0.00	32	
1402	Monday, December 23, 2019	0.04062	65	100,120	124,000	112,060	33		0.00	33	
1403	Tuesday, December 24, 2019	0.03130	65	107,880	141,000	124,440	33		0.00	33	
1404	Wednesday, December 25, 2019	0.02967	67	106,920	135,000	120,960	34		0.00	34	
1405	Thursday, December 26, 2019	0.02248	63	108,680	126,000	117,340	35		0.00	35	
1406	Friday, December 27, 2019	0.02518	65	110,680	128,000	119,340	37		0.00	37	
1407	Saturday, December 28, 2019	0.03059	65	120,560	147,000	133,780	37		0.00	37	
1408	Sunday, December 29, 2019	0.09077	63	124,320	162,000	143,160	39		0.00	39	
1409	Monday, December 30, 2019	0.09726	60	143,600	189,000	166,300	40		0.00	40	
1410	Tuesday, December 31, 2019	0.05215	60	143,460	204,000	173,730	39		0.00	39	



ANALYTICAL RESULTS

Sample: 9120626-01
Name: 002
Matrix: Waste Water - Composite

Sampled: 12/04/19 08:15
Received: 12/04/19 12:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
General Chemistry - PIA									
BOD	< 4.0	mg/L		12/05/19 16:13	1	4.0	12/05/19 16:13	KCC/CR D/CJ	SM 6210B
COD	41	mg/L		12/10/19 07:42	1	6.0	12/10/19 07:42	KCC	SM 6220D
Solids - total suspended solids (TSS)	5.2	mg/L		12/06/19 09:49	1	4.0	12/06/19 15:10	CPC	SM 2540D

Sample: 9120626-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 12/04/19 08:15
Received: 12/04/19 12:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
General Chemistry - PIA									
Cyanide ✓	< 0.0050	mg/L		12/09/19 06:28	1	0.0050	12/10/19 11:21	PMN	EPA 335.4
Oil & Grease - total	< 3.1	mg/L		12/11/19 07:32	1.332978	6.7	12/11/19 13:28	JEG	EPA 1664
Phenolics ✓	< 0.0050	mg/L		12/11/19 07:55	1	0.0050	12/12/19 09:21	PMN	EPA 420.4

Semivolatile Organics - PIA

Phenol ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
2-Chlorophenol ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Hexachloroethane ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Nitrobenzene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
2-Nitrophenol ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
2,4-Dimethylphenol ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
2,4-Dichlorophenol ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
1,2,4-Trichlorobenzene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Naphthalene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Hexachlorobutadiene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Dimethyl phthalate ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
2,6-Dinitrotoluene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Acenaphthylene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Acenaphthene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
2,4-Dinitrophenol ✓	< 20	ug/L		12/09/19 08:11	1	20	12/09/19 22:47	CRS	EPA 625
4-Nitrophenol ✓	< 20	ug/L		12/09/19 08:11	1	20	12/09/19 22:47	CRS	EPA 625
2,4-Dinitrotoluene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625



ANALYTICAL RESULTS

Sample: 9120626-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 12/04/19 08:15
Received: 12/04/19 12:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Diethyl phthalate ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Fluorene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
4,6-Dinitro-2-methylphenol ✓	< 50	ug/L		12/09/19 08:11	1	50	12/09/19 22:47	CRS	EPA 625
N-Nitrosodiphenylamine	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
1,2-Diphenylhydrazine	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625*
Hexachlorobenzene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Phenanthrene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Anthracene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Di-n-butyl phthalate ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Fluoranthene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Pyrene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Benzo(a)anthracene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Chrysene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Bis(2-ethylhexyl) phthalate ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
3,4-Benzofluoranthene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Benzo(k)fluoranthene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625
Benzo(a)pyrene ✓	< 10	ug/L		12/09/19 08:11	1	10	12/09/19 22:47	CRS	EPA 625

Total Metals - PIA

Chromium ✓	< 0.0050	mg/L		12/09/19 08:15	1	0.0050	12/10/19 14:24	ZSA	EPA 200.7
Copper ✓	< 0.030	mg/L		12/09/19 08:15	1	0.030	12/10/19 14:24	ZSA	EPA 200.7
Lead ✓	< 0.010	mg/L		12/09/19 08:15	1	0.010	12/10/19 14:24	ZSA	EPA 200.7
Nickel ✓	< 0.010	mg/L		12/09/19 08:15	1	0.010	12/10/19 14:24	ZSA	EPA 200.7
Zinc ✓	0.10	mg/L		12/09/19 08:15	1	0.010	12/10/19 14:24	ZSA	EPA 200.7

Volatile Organics - PIA

1,1,1-Trichloroethane ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
1,1,2-Trichloroethane ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
1,1-Dichloroethane ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
1,1-Dichloroethylene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
m,p-Xylene	< 10	ug/L		12/09/19 13:19	1	10	12/09/19 22:25	JJI/AEIH	EPA 624*
o-Xylene	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624*
Xylenes- Total	< 15	ug/L		12/09/19 13:19	1	15	12/09/19 22:25	JJI/AEIH	EPA 624*
1,2-Dichlorobenzene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
1,2-Dichloroethane ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
1,2-Dichloropropane ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
1,3-Dichlorobenzene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624

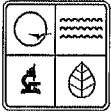


ANALYTICAL RESULTS

Sample: 9120826-02
Name: 002
Matrix: Waste Water - Grab

Sampled: 12/04/19 08:15
Received: 12/04/19 12:30
PO #: 4500188462

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
1,4-Dichlorobenzene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
trans-1,2-Dichloroethene	< 20	ug/L		12/09/19 13:19	1	20	12/09/19 22:25	JJI/AEIH	EPA 624*
Acrylonitrile ✓	< 50	ug/L		12/09/19 13:19	1	50	12/09/19 22:25	JJI/AEIH	EPA 624
Benzene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Carbon tetrachloride ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
cis-1,3-Dichloropropylene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Chlorobenzene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Chloroethane ✓	< 10	ug/L		12/09/19 13:19	1	10	12/09/19 22:25	JJI/AEIH	EPA 624
Chloroform ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Methyl chloride ✓	< 10	ug/L		12/09/19 13:19	1	10	12/09/19 22:25	JJI/AEIH	EPA 624
Dichloroethylene, trans-1,2- ✓	< 20	ug/L		12/09/19 13:19	1	20	12/09/19 22:25	JJI/AEIH	EPA 624
Ethylbenzene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Methylene chloride ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Tetrachloroethene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Toluene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Trichloroethylene ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624
Vinyl chloride ✓	< 5.0	ug/L		12/09/19 13:19	1	5.0	12/09/19 22:25	JJI/AEIH	EPA 624



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

Calumet, Missouri, L.L.C.

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

MO - 0137243

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

TABLE II	
NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0137243	002

OUTFALL NUMBER	002
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OUTFALL NUMBER	002
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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.

PAGE 2

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)		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	
GC/MS FRACTION - VOLATILE COMPOUNDS													
1V. Acrolein (107-02-8)	☒		---	(SEE ATTAC	HED	LAB	TEST	DATA	IN	ATTACH	MENT	D-1)	
2V. Acrylonitrile (107-13-1)	☒		---										
3V. Benzene (71-43-2)	☒		---										
4V. Bis (Chloromethyl) Ether (542-88-1)	☒		L										
5V. Bromoform (75-25-2)	☒		---										
6V. Carbon Tetrachloride (56-23-5)	☒		U										
7V. Chlorobenzene (108-90-7)	☒		---										
8V. Chlorodibromomethane (124-48-1)	☒		---										
9V. Chloroethane (75-00-3)	☒												
10V. 2-Chloroethylvinyl Ether (110-75-8)	☒		L										
11V. Chloroform (67-66-3)	☒		L										
12V. Dichlorobromomethane (75-27-4)	☒		---										
13V. Dichloro- difluoromethane (75-71-8)	☒		L										
14V. 1,1 - Dichloroethane (75-34-3)	☒		---										
15V. 1,2 - Dichloroethane (107-06-2)	☒		---										
16V. 1,1 - Dichloroethylene (75-35-4)	☒		L										
17V. 1,2 - Dichloropropane (78-87-5)	☒		L										
18V. 1,2 - Dichloropropylene (542-75-6)	☒		L										
19V. Ethylbenzene (100-41-4)	☒		L										
20V. Methyl Bromide (74-83-9)	☒		---										
21V. Methyl Chloride (74-87-3)	☒		---										

CONTINUED FROM THE FRONT

NPDES # (IF ASSIGNED)
MO-0137243OUTFALL NUMBER
002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT								4. UNITS		5. INTAKE (optional)		
	A. TESTING RE-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)	☒	☐	☐	(SEE ATTAC	HED	LAB	TEST	DATA	IN	ATTACH	MENT	D-1)				
23V. 1,1,2,2 - Tetra- chloroethane (79-34-5)	☒	☐	☐													
24V. Tetrachloroethylene (127-18-4)	☒	☐	☐													
25V. Toluene (106-88-3)	☒	☐	☐													
26V. 1,2 - Trans Dichloroethylene (156-60-5)	☒	☐	☐													
27V. 1,1,1 - Trl- chloroethane (71-55-6)	☒	☐	☐													
28V. 1,1,2 - Trl- chloroethane (79-00-5)	☒	☐	☐													
29V. Trichloro - ethylene (79-01-6)	☒	☐	☐													
30V. Trichloro - fluoromethane (75-69-4)	☒	☐	☐													
31V. Vinyl Chloride (75-01-4)	☒	☐	☐													

GC/MS FRACTION - ACID COMPOUNDS

1A. 2 - Chlorophenol (95-57-8)	☒	☐	☐													
2A. 2,4 - Dichloro- phenol (120-83-2)	☒	☐	☐													
3A. 2,4 - Dimethyl- phenol (105-67-9)	☒	☐	☐													
4A. 4,6 - Dinitro - O- Cresol (534-82-1)	☒	☐	☐													
5A. 2,4 - Dinitro - phenol (51-28-5)	☒	☐	☐													
6A. 2-Nitrophenol (38-75-5)	☒	☐	☐													
7A. 4-Nitrophenol (100-02-7)	☒	☐	☐													
8A. P - Chloro - M Cresol (59-50-7)	☒	☐	☐													
9A. Pentachloro - phenol (87-86-5)	☒	☐	☐													
10A. Phenol (108-95-2)	☒	☐	☐													
11A. 2,4,6 - Trichloro- phenol (88-06-2)	☒	☐	☐													

MO 780-1516 (02-12)

PAGE 4

CONTINUE ON PAGE 5

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN- TRATION	B. MASS	
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS													
1B. Acenaphthene (83-32-9)	☒	☐	☐	(SEE ATTAC	HED	LAB	TEST	DATA	IN	ATTACH	MENT	D-1)	
2B. Acenaphthylene (208-96-8)	☒	☐	☐										
3B. Anthracene (120-12-7)	☒	☐	☐										
4B. Benzidine (92-87-5)	☒	☐	☐										
5B. Benzo (a) Anthracene (56-55-3)	☒	☐	☐										
6B. Benzo (a) Pyrene (50-32-8)	☒	☐	☐										
7B. 3,4 - Benzofluoranthene (205-99-2)	☒	☐	☐										
8B. Benzo (ghi) Perylene (191-24-2)	☒	☐	☐										
9B. Benzo (k) Fluoranthene (207-08-9)	☒	☐	☐										
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☒	☐	☐										
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☒	☐	☐										
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☒	☐	☐										
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☒	☐	☐										
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☒	☐	☐										
15B. Butyl Benzyl Phthalate (85-68-7)	☒	☐	☐										
16B. 2-Chloronaphthalene (91-58-7)	☒	☐	☐										
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☒	☐	☐										
18B. Chrysene (218-01-9)	☒	☐	☐										
19B. Dibenz (a,h) Anthracene (53-70-3)	☒	☐	☐										
20B. 1,2 - Dichlorobenzene (95-50-1)	☒	☐	☐										
21B. 1,3 - Dichlorobenzene (541-73-1)	☒	☐	☐										

NPDES # (IF ASSIGNED)
MO-0137243OUTFALL NUMBER
002

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	ATTACH	MENT	D_I)	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)	☒	☐	☐	(SEE ATTAC	HED	LAB	TEST	DATA	IN									
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☒	☐	☐															
24B. Diethyl Phthalate (84-66-2)	☒	☐	☐															
25B. Dimethyl Phthalate (131-11-3)	☒	☐	☐															
26B. Di-N-butyl Phthalate (84-74-2)	☒	☐	☐															
27B. 2,4-Dinitrotoluene (121-14-2)	☒	☐	☐															
28B. 2,6-Dinitrotoluene (606-20-2)	☒	☐	☐															
29B. Di-N-Octyl Phthalate (117-84-0)	☒	☐	☐															
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	☒	☐	☐															
31B. Fluoranthene (206-44-0)	☒	☐	☐															
32B. Fluorene (86-73-7)	☒	☐	☐															
33B. Hexachlorobenzene (87-68-3)	☒	☐	☐															
34B. Hexachlorobutadiene (87-68-3)	☒	☐	☐															
35B. Hexachloro-cyclopentadiene (77-47-4)	☒	☐	☐															
36B. Hexachloroethane (67-72-1)	☒	☐	☐															
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☒	☐	☐															
38B. Isophorone (78-59-1)	☒	☐	☐															
39B. Naphthalene (91-20-3)	☒	☐	☐															
40B. Nitrobenzene (98-95-3)	☒	☐	☐															
41B. N-Nitro-sodiumethylaniline (62-75-9)	☒	☐	☐															

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)		2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)							
		A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE	(1) CONCENTRATION	(2) MASS	B. NO OF ANALYSES	
					(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS								
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)																		
42B. N-Nitroso		☒	☐	☐	(SEE ATTAC													
N-Propylamine (621-64-7)																		
43B. N-Nitro-		☒	☐	☐														
sodiphenylamine (86-30-6)																		
44B. Phenanthrene		☒	☐	☐														
(85-01-8)																		
45B. Pyrene		☒	☐	☐														
(129-00-0)																		
46B. 1,2,4-Tri		☒	☐	☐														
chlorobenzene (120-82-1)																		
GC/MS FRACTION - PESTICIDES																		
1P. Aldrin		☒	☐	☐														
(309-00-2)																		
2P. α-BHC		☒	☐	☐														
(319-84-6)																		
3P. β-BHC		☒	☐	☐														
(319-84-6)																		
4P. γ-BHC		☒	☐	☐														
(58-89-9)																		
5P. δ-BHC		☒	☐	☐														
(319-86-8)																		
6P. Chlordane		☒	☐	☐														
(57-74-9)																		
7P. 4,4'-DDT		☒	☐	☐														
(50-29-3)																		
8P. 4,4'-DDE		☒	☐	☐														
(72-55-9)																		
9P. 4,4'-DDD		☒	☐	☐														
(72-54-8)																		
10P. Dieldrin		☒	☐	☐														
(60-57-1)																		
11P. α-Endosulfan		☒	☐	☐														
(115-29-7)																		
12P. β-Endosulfan		☒	☐	☐														
(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)																		

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

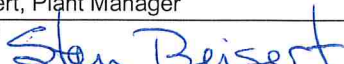
WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☒ 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 NUMBER WITH AREA CODE	D. POLLUTANTS ANALYZED (list)
PDC Laboratories, Inc.	1805 W. Sunset	(417) 864-8924	DMRs, PP, WET
	Springfield, MO 65807		

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) Stan Beisert, Plant Manager	TELEPHONE NUMBER WITH AREA CODE (573) 754-6211
SIGNATURE 	DATE SIGNED 2/25/2020

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM D – PRIMARY INDUSTRIES

All blanks must be filled in when the applications is submitted to the appropriate Regional Office (see map). The form **must be signed** as indicated.

This application is to be completed only for wastewater facilities from which there is a discharge. Include any facility that it is possible to discharge from even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, the sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility – By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

1.30 GENERAL INSTRUCTIONS. For some pollutants, you may be required to mark "X" in the "Testing Required" column (column 2-A) and test (sample and analyze) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all others, you must mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2-B or 2-C) based on your best estimate, and test for those which you believe to be present.

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff). If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out Table II if the separate sheets contain all the required information in a format which is consistent with Table II in spacing and in identification of pollutants and columns. (For example, the data system used in your GC/MS analysis may be able to print data in the proper format). Use the following abbreviations in the columns headed "Units". (column 4)

CONCENTRATION M

ppm.....parts per million
mg/l.....milligrams per liter
ppb.....parts per billion
µg/l.....micrograms per liter

ASS

lbs.....pounds
ton.....tons (English tons)
mg.....milligrams
g.....grams
kg.....kilograms
T.....tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "Number of Analyses" columns (columns 3-A and 3-D). Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" column (column 3-C), and the total number of daily values under the "Number of Analyses" columns (column 3-D). Also, determine the average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Value" column (column 3-B)

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes that contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLES. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. For the purposes of this application, A combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)
2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)
3. When applicable, a demonstration of the extent to which the pollutant in the intake vary physically, chemically or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

SPECIFIC INSTRUCTIONS. Table A lists the 34 "primary" industry categories in the left-hand column. For each outfall, if any of your processes that contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (column 2-A) and test for: A. All of the toxic metals, cyanide and total phenols; and B. The organic toxic pollutants contained in the gas chromatography/mass spectrometry (GC/MS) fractions indicated in Table A as applicable to your category, unless you qualify as a small business (see below). The organic toxic pollutants are listed by GC/MS fractions in Table II in 1.30. For example, the Organic Chemicals Industry has an "X" in all four

fractions; therefore, applicants in this category must test for all organic toxic pollutants in 1.30. If you are applying for a permit for a privately owned treatment works, determine your testing requirements on the basis of the industry categories of your contributors. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category (for example, for deciding whether an effluent guideline is applicable) before your permit is issued.

TABLE A – TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY

GC/MS INDUSTRY CATEGORY	VOLATILE A	CID B	FRACTION	
			ASE/NEUTRAL	PESTICIDE
Adhesives and sealants	X	X	X	-
Aluminum forming	X	X	X	-
Auto and other laundries	X	X	X	X
Battery manufacturing	X	-	X	-
Coal mining	X	X	X	X
Coil coating	X	X	X	-
Copper forming	X	X	X	-
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	-
Explosives manufacturing	X	X	X	-
Foundries	X	X	X	-
Gum and wood chemicals	X	X	X	X
Inorganic chemicals manufacturing	X	X	X	-
Iron and steel manufacturing	X	X	X	-
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	-
Nonferrous metals manufacturing	X	X	X	X
Ore Mining	X	X	X	X
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations	X	X	X	-
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials mfg.	X	X	X	X
Plastic processing	X	-	-	-
Porcelain enameling	X	-	X	X
Printing and publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	X
Rubber processing	X	X	X	-
Soap and detergent manufacturing	X	X	X	-
Stream electric power plants	X	X	X	-
Textile mills	X	X	X	X
Timber products	X	X	X	X

1 The pollutants in each fraction are listed in Item 1.30

X = Testing required

- = Testing not required

For all other cases (nonprocess wastewater outfalls and nonrequired GC/MS fractions), you must mark "X" in either the "Believed Present" column (column 2-B) or the "Believed Absent" column (column 2-C) for each pollutant, and test for those you believe present (those marked "X" in column 2-B). If you qualify as a small business (see below) you are exempt from testing for the organic toxic pollutants, listed in Table II. For pollutants in intake water, see discussion above. The "Long Term Average Values" column (column 5-2) are not compulsory but should be filled out if data is available.

Use composite samples for all pollutants in this part, except use grab samples for total phenols and cyanide.

You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

1. 2,4,5-trichlorophenoxy acetic acid (2,4,5-T);
2. 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP);
3. 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon);
4. O,O-dimethyl O-(2,4,5-trichlorophenyl) phosphorothioate (Ronnell);
5. Hexachlorophene (HCP).

If you mark "Testing Required" or "Believe Present," you must perform a screening analysis for dioxins, using gas chromatography with an electron capture detector. A TCDD standard for quantification is not required. Describe the results of this analysis in the space provided; for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The permitting authority may require you to perform a quantitative analysis if you report a positive result.

The Effluent Guidelines Division of EPA has collected and analyzed samples from some plants for the pollutants listed in Part C in the course of its BAT guidelines development program. If your effluents were sampled and analyzed as part of this program in the last three years, you may use this data to answer provided that the Missouri Department of Natural Resources approves, and provided that no process change or change in raw materials or operating practices has occurred since the samples were taken that would make the analyses unrepresentative of your current discharge.

SMALL BUSINESS EXEMPTION. If you qualify as a "small business" you are exempt from the reporting requirements for the organic toxic pollutants, listed in Table II. If your facility is a coal mine, and if your probable total annual production is less than 100,000 tons per year, you may submit past production data or estimated future production (such as a schedule of estimated total production under 30 CFR Section 795.14(c)) instead of conducting analysis for the organic toxic pollutants. If your facility is not a coal mine, and if your gross total annual sales for the most recent three years average less than \$100,000 per year, in second quarter 1980 dollars, you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants.

The production or sales data must be for the facility that is the source of the discharge. The data should not be limited to production or sales for the process or processes which contribute to the discharge, unless those are the only processes at your facility. For sales data, in situations involving intra-corporate transfers of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national produce price deflator (second quarter of 1980 = 100). This index is available in "National Income and Product Accounts of the United States" (Department of Commerce, Bureau of Economic Analysis).

- 2.00 A. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts. Under NPDES regulations your permit will contain limits to control all pollutants you report in answer to this question, as well as all pollutants reported in item 1.30 to 2.00 B at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to Missouri Department of Natural Resources if you, in the future, begin or expect that you will begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which you did not report here. Your permit may be modified at that time if necessary to control that pollutant.
- B. For this item, consider only those variations which may result in concentrations of pollutants in effluents which may exceed two times the maximum values you reported in 1.30. These variations may be part of your routine operations or part of your regular cleaning cycles.

Under NPDES regulations your permit will contain limits to control any pollutant you report in answer to this question at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to the Missouri Department of Natural Resources if you know or have reason to believe that any activity has occurred or will occur which would make your discharge of any toxic pollutant five times the maximum values reported in 1.30 or in this item, and your permit may be modified at that time if necessary to control the pollutant.

Do not consider variations which are the result of bypasses or upsets. Increased levels of pollutants that are discharged as a result of bypasses or upsets are regulated separately under NPDES regulations.

C. Examples of the types of variations to be described here include:

Changes in raw or intermediate materials;
Changes in process equipment or materials;
Changes in product lines;
Significant chemical reactions between pollutants in waste streams; and
Significant variation in removal efficiencies of pollution control equipment.

You may indicate other types of variations as well, except those which are the result of bypasses or upsets. Missouri Department of Natural Resources may require you to further investigate or document variations you report here.

Base your prediction of expected levels of these pollutants upon your knowledge of your processes, raw materials, past and projected product ranges, etc., or upon any testing conducted upon your effluents that indicates the range of variability that can be expected in your effluent over the next five years.

EXAMPLE: Outfall 001 discharges water used to clean six 500 gallon tanks. These tanks are used for formulation of dispersions of synthetic resins in water (adhesives). Use of toxic pollutants that can be expected in the next five years is:

1. Copper acetate inhibitor, ½ lb. per tank;
2. Dibutyl phthalate, 50 lbs. per tank;
3. Toulene, 5 lbs. per tank; and
4. Antimony oxide, 1 lb. per tank.

Based on normal cleaning an average of 1 percent and a maximum of 3 percent of the contents of each tank is collected and discharged once every two weeks in the 150 gallons of water used for cleaning. Treatment (pH adjustment, flocculation, filtration) removes 85 percent of metals and 50 percent of organic compounds.

3.00 Self-explanatory.

4.00 The Federal Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Federal Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application..... shall upon conviction, be punished by a fine of no more than \$10,000 or by imprisonment for not more than six months, or both."

STATE REGULATIONS REQUIRE THE CERTIFICATION TO BE SIGNED AS FOLLOWS

1. For a corporation, by a officer of at least the level of plant manager;
2. For a partnership or sole proprietorship, by a general partner or the proprietor; or
3. For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking public official.



MISSOURI DEPARTMENT OF NATURAL RESOURCES

REGIONAL AND SATELLITE OFFICES

Kansas City Area

- **Kansas City Regional Office**
500 NE Colbern Rd.
Lee's Summit, MO 64086-4710
816-622-7000
FAX: 816-622-7044
- **Northwest Missouri Satellite Office**
Northwest Missouri State University
Environmental Services Building,
800 University Dr.
Maryville, MO 64468-6015
660-562-1876 or 660-562-1877
FAX: 660-562-1878
- **Truman Lake Satellite Office**
Harry S Truman State Park
28761 State Park Road West
Warsaw, MO 65365
660-438-3039
FAX: 660-438-5271

Southwest Area

- **Southwest Regional Office**
2040 W. Woodland
Springfield, MO 65807-5912
417-891-4300
FAX: 417-891-4399
- **Lake of the Ozarks Satellite Office**
Camden County, 5570 Hwy. 54,
Osage Beach, MO 65065
2040 W. Woodland
Springfield, MO 65807-5912
573-348-2442
FAX: 573-348-2568
- **Newton County Satellite Office**
Crowder College
601 Laclede, Smith Hall, Room 201
Neosho, MO 64850
417-455-5180 or 417-455-5158
FAX: 417-455-5157

Northeast Area

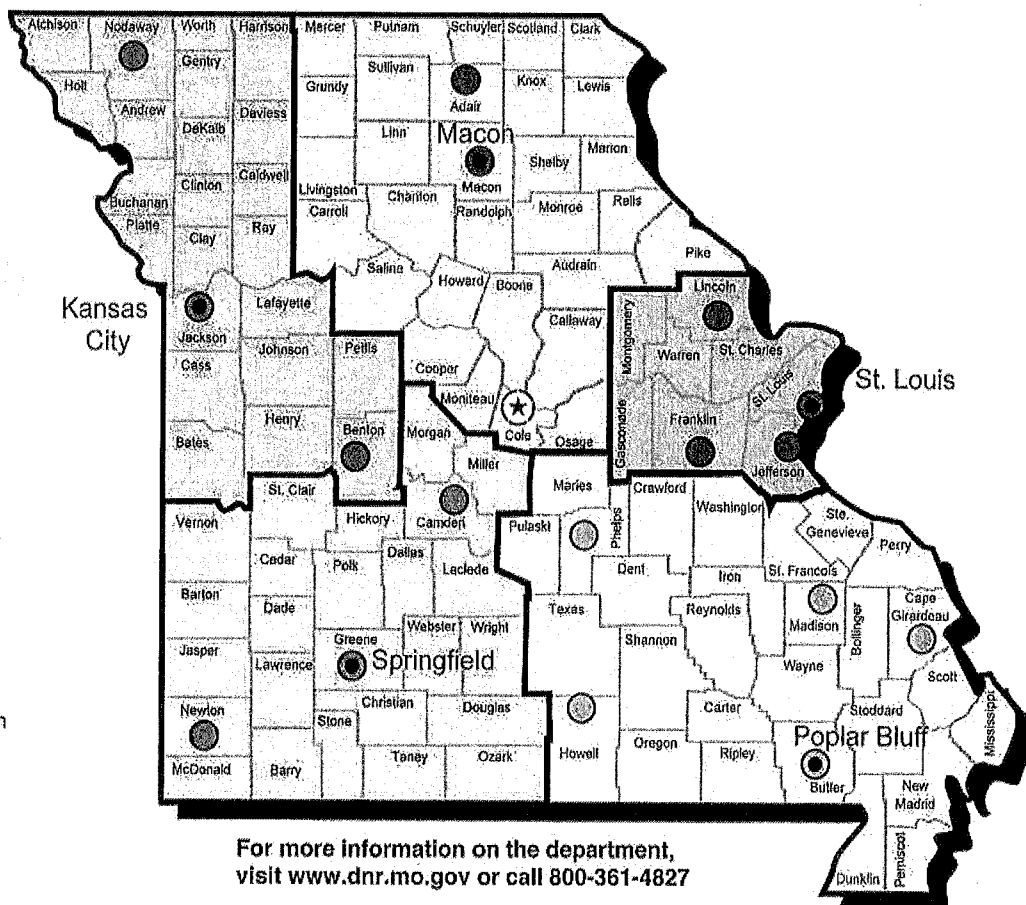
- **Northeast Regional Office**
1709 Prospect Drive
Macon, MO 63552-2602
660-385-8000
FAX: 660-385-8090
- **Kirksville Satellite Office**
Truman State University
Magruder Hall, Room 3068
100 E. Normal St.
Kirksville, MO 63501
660-785-4610
- ★ **Department Central Offices**
P.O. Box 176
Jefferson City, MO 65102-0176
573-751-3443
www.dnr.mo.gov/shared/map-jeffcity.htm

St. Louis Area

- **St. Louis Regional Office**
7545 S. Lindbergh, Ste 210
St. Louis, MO 63125
314-416-2960
FAX: 314-416-2970
- **Franklin County Satellite Office**
Meramec State Park
Hwy. 185 S.
Sullivan, MO 63080
573-860-4308
FAX: 573-468-5051
- **Jefferson County Satellite Office**
Eastern District Parks Office
Hwy. 61
Festus, MO 63028
636-931-5200
FAX: 636-931-5204
- **Lincoln County Satellite Office**
Culvre River State Park
678 State Rt. 147
Troy, MO 63379
636-528-4779
FAX: 636-528-5817

Southeast Area

- **Southeast Regional Office**
2155 North Westwood Blvd.
Poplar Bluff, MO 63901
573-840-9750
FAX: 573-840-9754
- **Cape Girardeau County Satellite Office**
2007 Southern Expressway
Cape Girardeau, MO 63701
573-651-3008 (phone and FAX)
- **Howell County Satellite Office**
700 W. Main St.
Willow Springs, MO 65793
417-469-0025 (phone and FAX)
- **Madison County Satellite Office**
120 W. Main St.
Fredericktown, MO 63645
573-783-2385
FAX: 573-783-6294
- **Rolla Satellite Office**
111 Fairgrounds Rd.
Rolla, MO 65402
573-368-3625
FAX: 573-368-3912



For more information on the department,
visit www.dnr.mo.gov or call 800-361-4827

ATTACHMENT D-1: Outfall 002 Lab Testing Data

Calumet Missouri, LLC - NPDES Permit Modification Request, February 2020

APPLICATION FOR DISCHARGE PERMIT FORM D – PRIMARY INDUSTRIES

TABLE II	
NPDES # (IF ASSIGNED)	OUTFALL NUMBER
MO-0137243	Outfall002

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. BELIEVE D PRESENT	C. BELIEVE D ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE				
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS			
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)	✓		—	<0.0050				1	mg/L						
2M. Arsenic, Total (7440-38-2)	✓		—	<0.005				1	mg/L						
3M. Beryllium, Total (7440-41-7)	✓		—	<0.0010				1	mg/L						
4M. Cadmium, Total (7440-43-9)	✓		—	<0.0010				1	mg/L						
5M. Chromium III (16065-83-1)	✓		—	<0.0050				1	mg/L						
6M. Chromium VI (18840-29-9)	✓		—	<0.005				1	mg/L						
7M. Copper, Total (7440-50-8)	✓		—	<0.0020				1	mg/L						
8M. Lead, Total (7439-92-1)	✓		—	<0.010				1	mg/L						
9M. Magnesium Total (7439-95-4)	✓		—	13				1	mg/L						
10M. Mercury, Total (7439-97-6)	✓		—	<0.0002				1	mg/L						
11M. Molybdenum Total (7439-98-7)	✓		—	<0.012				1	mg/L						
12M. Nickel, Total (7440-02-0)	✓		—	<0.0020				1	mg/L						
13M. Selenium, Total (7782-49-2)	✓		—	<0.005				1	mg/L						
14M. Silver, Total (7440-22-4)	✓		—	<0.0020				1	mg/L						
15M. Thallium, Total (7440-28-0)	✓		—	<0.0050				1	mg/L						
16M. Tin Total (7440-31-5)	✓		—	<0.025				1	mg/L						
17M. Titanium Total (7440-32-6)	✓		—	<0.025				1	mg/L						
18M. Zinc, Total (7440-66-6)	✓		—	<0.010				1	mg/L						

CONTINUED FROM PAGE 3

DECONTAMINATION						
TEST NAME	DATE	INITIALS	RESULT	UNIT	REMARKS	SIGNATURE
19M. Cyanide, Amenable to Chlorination			<0.0050	mg/L	1	
20M. Phenols, Total			<0.050	mg/L	1	

DIOXIN															
DESCRIBE RESULTS															
1. POLLUTANT AND CAS NUMBER <i>(if available)</i>	2. MARK "X"			3. EFFLUENT <i>(if available)</i>				4. UNITS				5. INTAKE <i>(optional)</i>			
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE		C. LONG TERM AVRG. VALUE <i>(if available)</i>		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☒			<50						1	ug/L				
2V. Acrylonitrile (107-13-1)	☒			<10						1	ug/L				
3V. Benzene (71-43-2)	☒	-		<5.0						1	ug/L				
4V. Bis (Chloromethyl) Ether (942-88-1)	☒	-		<10						1	ug/L				
5V. Bromoform (75-25-2)	☒			<5.0						1	ug/L				
6V. Carbon Tetrachloride (56-23-5)	☒			<5.0						1	ug/L				
7V. Chlorobenzene (108-90-7)	☒			<5.0						1	ug/L				
8V. Chlorodibromomethane (124-48-1)	☒			<5.0						1	ug/L				
9V. Chloroethane (75-00-3)	☒	-		<10						1	ug/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☒	-		<5.0						1	ug/L				
11V. Chloroform (67-66-3)	☒	-		<5.0						1	ug/L				
12V. Dichlorobromomethane (75-27-4)	☒			<5.0						1	ug/L				
13V. Dichlorodifluoromethane (75-71-8)	☒			<10						1	ug/L				
14V. 1,1-Dichloroethane (75-34-3)	☒			<5.0						1	ug/L				
15V. 1,2-Dichloroethane (107-06-2)	☒			<5.0						1	ug/L				
16V. 1,1-Dichloroethylene (75-35-4)	☒			<5.0						1	ug/L				
17V. 1,3-Dichloropropane (78-87-5)	☒	-		<5.0						1	ug/L				
18V. 1,2-Dichloropropylene (542-75-6)	☒			<5.0						1	ug/L				
19V. Ethylbenzene (100-41-4)	☒	-		<5.0						1	ug/L				
20V. Methyl Bromide (74-83-9)	☒	-		<10						1	ug/L				
21V. Methyl Chloride (74-87-3)	☒			<10						1	ug/L				

2. MARK "X"

NPDES # (IF ASSIGNED)
MO-0137243

OUTFALL NUMBER
Outfall002

3. EFFLUENT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS				5. INTAKE (optional)			
	A. TESTING RE-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 – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	✓	—	✓												
23V. 1,1,2,2 – Tetra- chloroethane (79-34-5)	✓	—	✓							1	ug/L				
24V. Tetrachloroethylene (127-18-4)	✓	✓	✓							1	ug/L				
25V. Toluene (108-88-3)	✓	✓	✓							1	ug/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	✓	✓	✓							1	ug/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	✓	✓	✓							1	ug/L				
28V. 1,1,2 – Tri- chloroethane (79-00-5)	✓	✓	✓							1	ug/L				
29V. Trichloro – ethylene (79-01-6)	✓	✓	✓							1	ug/L				
30V. Trichloro – fluoromethane (75-69-4)	✓	✓	✓							1	ug/L				
31V. Vinyl Chloride (75-01-4)	✓	✓	✓							1	ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	✓	✓	✓							1	ug/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	✓	✓	✓							1	ug/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	✓	✓	✓							1	ug/L				
4A. 4,6 – Dinitro – O- Cresol (534-52-1)	✓	✓	✓							1	ug/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	✓	✓	✓							1	ug/L				
6A. 2-Nitrophenol (88-75-5)	✓	✓	✓							1	ug/L				
7A. 4-Nitrophenol (100-02-7)	✓	✓	✓							1	ug/L				
8A. P – Chloro – M Cresol (59-50-7)	✓	✓	✓							1	ug/L				
9A. Pentachloro – phenol (87-86-5)	✓	✓	✓							1	ug/L				
10A. Phenol (108-952)	✓	✓	✓							1	ug/L				
11A. 2,4,6 – Trichloro- phenol (88-06-2)	✓	✓	✓							1	ug/L				
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	✓	✓	✓							1	ug/L				

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CONTINUED FROM THE FRONT			2. MARK "X"		3. EFFLUENT				4. UNITS			5. INTAKE (optional)			
1. POLLUTANT AND CAS NUMBER (if available)	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.		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)	☒	☐	☐												
2B. Acenaphthylene (208-96-8)	☒	☐	☐		<10.0					1	ug/L				
3B. Anthracene (120-12-7)	☒	☐	☐		<10.0					1	ug/L				
4B. Benzidine (92-87-5)	☒	☐	☐		<80.0					1	ug/L				
5B. Benzo (a) Anthracene (56-55-3)	☒	☐	☐		<10.0					1	ug/L				
6B. Benzo (a) Pyrene (50-32-8)	☒	☐	☐		<10.0					1	ug/L				
7B. 3,4 - Benzofluoranthene (205-99-2)	☒	☐	☐		<10.0					1	ug/L				
8B. Benzo (ghi) Perylene (191-24-2)	☒	☐	☐		<10.0					1	ug/L				
9B. Benzo (k) Fluoranthene (207-08-9)	☒	☐	☐		<10.0					1	ug/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☒	☐	☐		<10.0					1	ug/L				
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☒	☐	☐		<10.0					1	ug/L				
12B. Bis (2- Chloroisopropyl) Ether (39638-32-9)	☒	☐	☐		<10.0					1	ug/L				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☒	☐	☐		<10.0					1	ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☒	☐	☐		<10.0					1	ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)	☒	☐	☐		<10.0					1	ug/L				
16B. 2- Chloronaphthalene (91-58-7)	☒	☐	☐		<10.0					1	ug/L				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☒	☐	☐		<10.0					1	ug/L				
18B. Chrysene (218-01-9)	☒	☐	☐		<10.0					1	ug/L				
19B. Dibenzo (a,h) Anthracene (53-70-3)	☒	☐	☐		<10.0					1	ug/L				
20B. 1,2 - Dichlorobenzene (95-50-1)	☒	☐	☐		<5.0					1	ug/L				
21B. 1,3 - Dichlorobenzene (541-73-1)	☒	☐	☐		<5.0					1	ug/L				

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1. POLLUTANT AND CAS NUMBER (if available)		2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		B. NO OF ANALYSES				
		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)									
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)																	
22B. 1, 4-Dichlorobenzene (106-46-7)	✓	✓	✓	✓	<5.0												
23B. 3, 3'-Dichlorobenzidine (91-94-1)	✓			✓	<20.0												
24B. Diethyl Phthalate (84-66-2)	✓	✓	✓	✓	<10.0												
25B. Dimethyl Phthalate (131-11-3)	✓	✓	✓	✓	<10.0												
26B. Di-N-butyl Phthalate (84-74-2)	✓	✓	✓	✓	<10.0												
27B. 2,4-Dinitrotoluene (121-14-2)	✓	✓	✓	✓	<10.0												
28B. 2,6-Dinitrotoluene (806-20-2)	✓	✓	✓	✓	<10.0												
29B. Di-N-Octylphthalate (117-84-0)	✓	✓	✓	✓	<10.0												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	✓	✓	✓	✓	<10.0												
31B. Fluoranthene (206-44-0)	✓	✓	✓	✓	<10.0												
32B. Fluorene (86-73-7)	✓	✓	✓	✓	<10.0												
33B. Hexachlorobenzene (87-68-3)	✓	✓	✓	✓	<10.0												
34B. Hexachlorobutadiene (87-68-3)	✓	✓	✓	✓	<10.0												
35B. Hexachloro-cyclopentadiene (77-47-4)	✓	✓	✓	✓	<20.0												
36B. Hexachloroethane (67-72-1)	✓	✓	✓	✓	<10.0												
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	✓	✓	✓	✓	<10.0												
38B. Isophorone (78-59-1)	✓	✓	✓	✓	<10.0												
39B. Naphthalene (91-20-3)	✓	✓	✓	✓	<10.0												
40B. Nitrobenzene (98-95-3)	✓	✓	✓	✓	<10.0												
41B. N-Nitro-sodimethylamine (62-75-9)	✓	✓	✓	✓	<10.0												

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1. POLLUTANT AND CAS NUMBER (if available)		2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)					
		A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG.		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)		✓	┐	┐	<10.0											1	ug/L	
43B. N-Nitro- sodiphenylamine (86-30-6)		✓	┐	┐	<10.0											1	ug/L	
44B. Phenanthrene (85-01-8)		✓	┐	┐	<10.0											1	ug/L	
45B. Pyrene (129-00-0)		✓	┐	┐	<10.0											1	ug/L	
46B. 1,2,4-Tri chlorobenzene (120-82-1)		✓	┐	┐	<10.0											1	ug/L	
GC/MS FRACTION - PESTICIDES																		
1P. Aldrin (309-00-2)		✓	┐	┐	<0.50											1	ug/L	
2P. α-BHC (319-84-6)		✓	┐	┐	<0.50											1	ug/L	
3P. β-BHC (319-84-6)		✓	┐	┐	<0.50											1	ug/L	
4P. γ-BHC (58-89-9)		✓	┐	┐	<0.50											1	ug/L	
5P. δ-BHC (319-86-8)		✓	┐	┐	<0.50											1	ug/L	
6P. Chlordane (57-74-9)		✓	┐	┐	<5.0											1	ug/L	
7P. 4,4'-DDT (50-29-3)		✓	┐	┐	<1.0											1	ug/L	
8P. 4,4'-DDE (72-55-9)		✓	┐	┐	<1.0											1	ug/L	
9P. 4,4'-DDD (72-54-8)		✓	┐	┐	<1.0											1	ug/L	
10P. Dieldrin (80-57-1)		✓	┐	┐	<1.0											1	ug/L	
11P. α-Endosulfan (115-29-7)		✓	┐	┐	<0.50											1	ug/L	
12P. β-Endosulfan (115-29-7)		✓	┐	┐	<1.0											1	ug/L	
13P. Endosulfan Sulfate (1031-07-8)		✓	┐	┐	<1.0											1	ug/L	
14P. Endrin (72-20-8)		✓	┐	┐	<1.0											1	ug/L	
15P. Endrin Aldehyde (7421-93-4)		✓	┐	┐	<1.0											1	ug/L	
16P. Heptachlor (76-44-8)		✓	┐	┐	<0.50											1	ug/L	
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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)
PDC Laboratories, Inc.	2231 W Altorfer Dr	(309) 692-9688	M608
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)	
Stan Beisert - Plant Manger		(573) 754-6211	
SIGNATURE		DATE SIGNED	