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-0130371
Owner:	City of Oak Grove
Address:	1300 Broadway, Oak Grove, MO 64075
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Oak Grove WWTP
Facility Address:	40298 East Gillespie Road, Oak Grove, MO 64011
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

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

FACILITY DESCRIPTION

See Page 2

June 1, 2025
Effective Date

May 31, 2030
Expiration Date

John Hoke, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW
The use or operation of this facility shall be by or under the supervision of a Certified "B" Operator.
Influent pump station / one peak flow equalization lagoon / mechanical bar screen / grit removal / one extended aeration basin / two final clarifiers / UV disinfection / two sludge holding lagoons / sludge removed by contract hauler or stored in sludge holding lagoons / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater.

Design population equivalent is 13,000.
Design flow is 1.3 million gallons per day.
Actual flow is 850,700 gallons per day.
Design sludge production is 305 dry tons/year.

Legal Description:	Sec. 22, T49N, R29W, Jackson County
UTM Coordinates:	X=404158, Y=4321304
Receiving Stream:	Tributary to Sni-a-Bar Creek (C)
First Classified Stream and ID:	Presumed Use Stream (C) (5065)
USGS Basin & Sub-watershed No.:	(10300101-0506)

Permitted Feature INF – Influent Monitoring Location – Headworks

Legal Description:	Sec. 21, T49N, R29W, Jackson County
UTM Coordinates:	X=403920, Y=4321122

OUTFALL #001	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 interim effluent limitations in **Table A-1** shall become effective on **June 1, 2025,** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY TOTAL	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: M						
Flow	MGD	*		*	once/weekday***	24 hr. total
Total Flow Ω	MG		*		once/month	measured
EFFLUENT PARAMETER(S)	**UNITS**	**DAILY MAXIMUM**	**WEEKLY AVERAGE**	**MONTHLY AVERAGE**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/month	composite**
Total Suspended Solids	mg/L		35	25	once/month	composite**
E. coli (**Note 1, Page 5**)	#/100mL		1,030	206	once/week	grab
Ammonia as N (January)	mg/L	11.5		2.6	once/month	composite**
Ammonia as N (February)	mg/L	10.1		2.6	once/month	composite**
Ammonia as N (March)	mg/L	10.1		2.6	once/month	composite**
Ammonia as N (April)	mg/L	4.8		1.3	once/month	composite**
Ammonia as N (May)	mg/L	4.8		1.3	once/month	composite**
Ammonia as N (June)	mg/L	4.8		1.3	once/month	composite**
Ammonia as N (July)	mg/L	4.8		1.1	once/month	composite**
Ammonia as N (August)	mg/L	4.8		1.3	once/month	composite**
Ammonia as N (September)	mg/L	4.8		1.3	once/month	composite**
Ammonia as N (October)	mg/L	11.5		2.6	once/month	composite**
Ammonia as N (November)	mg/L	11.5		2.6	once/month	composite**
Ammonia as N (December)	mg/L	10.1		2.6	once/month	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
Total Nitrogen (**Note 3, Page 5**)	mg/L	*		*	once/month	calculated
EFFLUENT PARAMETER(S)	**UNITS**	**MINIMUM**		**MAXIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
pH – Units****	SU	6.5		9.0	once/week	grab

EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand$_5$ – Percent Removal (**Note 2, Page 5)**	%	85	once/month	calculated
Total Suspended Solids – Percent Removal (**Note 2, Page 5)**	%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE JULY 28, 2025.

* Monitoring requirement only.
** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30-minute intervals by an automatic sampling device
*** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
**** pH is measured in pH units and is not to be averaged.
Ω Total flow must be measured daily, including weekends and holidays.

OUTFALL #001	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 interim effluent limitations in **Table A-2** shall become effective on **June 1, 2025,** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: Q						
Oil & Grease	mg/L	15		10	once/quarter¥	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter¥	composite**
Cadmium, Total Recoverable	µg/L	1.8		0.6	once/quarter¥	composite**
Hardness	mg/L	*		*	once/quarter¥	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE OCTOBER 28, 2025.

* Monitoring requirement only.

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

¥ See table below for quarterly sampling requirements.

Quarterly Minimum Sampling Requirements			
Quarter	**Months**	**Quarterly Effluent Parameters**	**Report is Due**
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

OUTFALL #001	TABLE A-3. WHOLE EFFLUENT TOXICITY 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 in **Table A3** shall become effective on **June 1, 2025,** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT	MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: WA				
Acute Whole Effluent Toxicity - *Pimephales promelas* (**Note 4, Page 5**)	TU_c	*	once/year	composite**
Acute Whole Effluent Toxicity -*Ceriodaphnia dubia* (**Note 4, Page 5**)	TU_c	*	once/year	composite**

ACUTE WET TEST MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**.
THE FIRST REPORT IS DUE SEPTEMBER 28, 2025.

* Monitoring requirement only.

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

PERMITTED FEATURE **INF**	**TABLE B-1. INFLUENT MONITORING REQUIREMENTS**

The monitoring requirements in **Table B-1** shall become effective on **June 1, 2025,** and remain in effect until expiration of the permit. The influent wastewater shall be monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: IM						
Biochemical Oxygen Demand$_5$ (**Note 2**)	mg/L			*	once/month	composite**
Total Suspended Solids (**Note 2**)	mg/L			*	once/month	composite**
Ammonia as N	mg/L	*		*	once/month	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE JULY 28, 2025.

* Monitoring requirement only.

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

Note 1 – Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one sample is collected during a calendar week (Sunday through Saturday).

Note 2 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent –Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as A composite sample made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab.

Note 3 –Total Nitrogen is calculated as; TN = Total Kjeldahl Nitrogen + Nitrate+Nitrite.

Note 4 – See Special Condition #15 for additional requirements.

D. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and August 1, 2019, and hereby incorporated as though fully set forth herein. Annual reports required per Standard Conditions Part III Section K shall be submitted online to the department via the department's eDMR system as an attachment. This supersedes Standard Conditions Part III Section K #4. EPA reports shall continue to be submitted online via the Central Data Exchange system.

E. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as "WET Test Chronic Outfall 002 Jan 2023," or "Outfall 004 Daily Data Mar 2025."
   (a) eDMR Registration Requirements. The permittee must register with the department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. Information about the eDMR system can be found at https://dnr.mo.gov/water/business-industry-other-entities/reporting/electronic-discharge-monitoring-reporting-system-edmr. The first user shall register as an Organization Official and the association to the facility must be approved by the department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only department approved reporting method for this permit unless a waiver is granted by the department. See paragraph (c) below.
   (b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://apps5.mo.gov/mogems/welcome.action. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.
   (c) 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: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. The department will either approve or deny this electronic reporting waiver request within 120 calendar days.

2. 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 §644.051.15 RSMo, and the Clean Water Act (CWA) Section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
   (a) 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 CWA, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.

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

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

5. 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) See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, No. 4 regarding proper testing and method minimum levels used for sample analysis.
   (c) The permittee shall not report a sample result as "Non-Detect" without also reporting the method minimum level of the test. Reporting as "Non-Detect" without also including the method minimum level, will be considered failure to report, which is a violation of this permit.
   (d) The permittee shall provide the "Non-Detect" sample result using the less than symbol and the method minimum level (e.g., <50 µg/L, if the method minimum level for the parameter is 50 µg/L).
   (e) Where the permit contains a department determined Minimum Quantification 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. SPECIAL CONDITIONS (continued)

(f) For the daily maximum, the facility shall report the highest value. If the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method minimum level.
(g) For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.
(h) For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.
(i) When *E. coli* is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means.
(j) See the Fact Sheet Appendix - Non-Detect Example Calculations for further guidance.

6. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9. The permittee has been granted approval for an alternative operational monitoring schedule in accordance with 10 CSR 20-9.010(3). This approval is limited to operational monitoring and does not apply to the certified operator requirements of 10 CSR 20-9.020. The applicable operational monitoring parameters and frequencies for this facility are:

Operational Monitoring Parameter	Frequency*
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)

* Excluding holidays

7. The permittee shall develop and implement a program for maintenance and repair of its collection system. The permittee may compare collection system performance results and other data with the benchmarks used in the Departments' Capacity, Management, Operation, And Maintenance (CMOM) Model located at https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template. Additional information regarding the Departments' CMOM Model is available at https://dnr.mo.gov/print/document-search/pub2574.

The permittee shall also submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually, by January 28th, for the previous calendar year. The report shall contain the following information:
(a) A summary of the efforts to locate and eliminate specific sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
(b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
(c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.

8. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance with 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the Kansas City Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially treated wastewater process stream with a fully treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.

9. The facility must be sufficiently secured to restrict entry by children, livestock, and unauthorized persons as well as to protect the facility from vandalism.

E. SPECIAL CONDITIONS (continued)

10. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.

11. An all-weather access road to the treatment facility shall be maintained.

12. The outfall sewer shall be protected and maintained against the effects of floodwater, ice, or other hazards as to reasonably ensure its structural stability, freedom from stoppage, and that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

13. The storage basins shall be operated and maintained to ensure their structural integrity, which includes maintaining adequate freeboard and keeping the berms free of deep-rooted vegetation, animal dens, or other potential sources of damage.

14. The facility shall ensure that adequate provisions are provided to prevent or minimize surface water intrusion into the storage basins and to divert stormwater runoff around the storage basins and protect embankments from erosion.

15. 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:
        i. The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
        ii. 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 laboratory shall not chemically dechlorinate the sample.
    (e) The Allowable Effluent Concentration (AEC) is 100%; the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
    (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of 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.

16. Renewal Application Requirements.
    (a) This facility shall submit an appropriate and complete application to the department no less than 180 days prior to the expiration date listed on Page 1 of the permit.
    (b) Application materials shall include a completed Form B2.
        (1) For Part B, Additional Application Information #14 Effluent Testing Data, the permittee shall submit at a minimum, effluent testing data based on at least three samples for each outfall through which effluent is discharged. The samples must be no more than four and one-half years apart.
            i. Sufficiently sensitive analytical methods must be used. 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. 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.
        (2) For Part D, Expanded Effluent Testing Data #18, the permittee shall submit at a minimum, effluent testing data based on at least three pollutant scans for each outfall through which effluent is discharged. The pollutant scans must be performed no more than four and one-half years prior to the date of the permit application submittal.
            i. Sufficiently sensitive analytical methods must be used. See Special Condition 19(b)(i)1 above for more information.

E. SPECIAL CONDITIONS (continued)

(3) For Part E, Toxicity Testing Data #19, the facility shall submit at a minimum, either 4 quarterly tests for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the date of the permit application submittal, for each of the facility's discharge points.

(4) For Part F, Industrial User Discharges and RCRA/CERCLA Wastes, if the treatment works accepts process wastewater from any significant industrial users, also known as SIUs, or receives a RCRA or CERCLA wastes, the permittee shall complete the applicable portions of #20, #21, #22, and/or #23 for each SIU and/or remedial waste accepted.

i. SIUs are defined as:

1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
2. Any other industrial user that meets one or more of the following:
   a. Discharges an average of 25,000 gallons per day (gpd) or more of process wastewater to the treatment works (with certain exclusions).
   b. Contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   c. Is designated as an SIU by the control authority.
   d. Is otherwise required by the permitting authority to provide the information.

(b) The facility shall indicate the chosen compliance method to meet target reduction levels for total phosphorus, including:

(1) Chosen compliance method, in accordance with 10 CSR 20-7.015(9)(B)2.A.

i. If implementing compliance option 2, and the facility is a combined sewer system, permittees can request alternative considerations or calculations.

ii. If implementing compliance option 3, at least two years of influent and effluent monitoring data is required.

iii. If implementing compliance option 4, sufficient and representative data is required.

(2) Alternative implementation date, if applicable.

(3) Application for nutrient trading, if utilizing.

(c) Complete the Financial Questionnaire (https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511) and submit it with your application.

F. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.12 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0130371
OAK GROVE WWTP

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

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 (operating permit) listed below.

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

Part I – Facility Information

Application Date: 6/26/2023; revised 1/15/2025
Expiration Date: 03/31/2024

Facility Type and Description: POTW - Influent pump station / one peak flow equalization lagoon / mechanical bar screen / grit removal / one extended aeration basin / two final clarifiers / UV disinfection / two sludge holding lagoons / sludge removed by contract hauler or stored in sludge holding lagoons / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	2.015	Secondary	Domestic

Comments:

Outfall #001

- Revision of
  - Copper effluent limitation to monitoring only.
  - Cadmium monitoring only to effluent limits.
  - Ammonia limits
- Removal of
  - Selenium monitoring and chronic whole effluent toxicity test.

Special Conditions

- Addition of:
  - renewal application requirements
  - alternative operational monitoring approval
- Removal of
  - The removal of fees special condition
  - Chronic whole effluent toxicity test
- Revision of
  - The Electronic Discharge Monitoring Report (eDMR) Submission System,
  - Reporting Non-Detects,
  - Bypasses

See Part II of the Fact Sheet for further information regarding the addition, revision, and removal of instream and effluent parameters.

Part II – Effluent Limitations and Monitoring Requirements

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the permit are based on current operations of the facility, outfall location, and receiving stream. 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.

OUTFALL #001 - RECEIVING STREAM INFORMATION

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES**	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Sni-a-Bar Creek (Presumed Use Streams*)	C	5065	AHP (WWH), WBC-B, SCR, HHP, IRR, LWP	10300101-0506	0
Sni-a-Bar Creek	P	399	AHP (WWH), WBC-C, SCR, HHP, IRR, LWP	10300101-0506	0.65

* The previous permit identified MUDD WBID #3960 and 100K Extent-Remaining Stream. This change is due to a new numbering system and new naming convention of the streams, and the actual receiving stream has not changed.

**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)(F)].

Uses found in the receiving streams table, above:

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

AHP = Aquatic Habitat Protection - To ensure the protection and propagation of fish, shellfish, and wildlife. AHP 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 Aquatic Life Protection effluent limitations in 10 CSR 20-7.031 Table A for all aquatic habitat designations unless otherwise specified.

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

WBC = Whole Body Contact recreation where the entire body is capable of being submerged. WBC is further subcategorized as:

- **WBC-A** = Whole body contact recreation that supports swimming uses and has public access;
- **WBC-B** = Whole body contact recreation that supports swimming;

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

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

HHP = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption;
LWP = Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife;
DWS = Drinking water supply;
IND = Industrial water supply

10 CSR 20-7.031(1)(F)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(S) LOW-FLOW VALUES:

RECEIVING STREAM	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Sni-a-Bar Creek (C)	0.0	0.0	0.0

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B(I)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

Receiving Water Body's Water Quality

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

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

- ✓ This facility discharges to a tributary 0.78 miles upstream of a Sni-a-Bar Creek (399), which is on the 2016 303(d) list for low Dissolved Oxygen. It is unknown at this time if the facility is considered to contribute to the impairment of Sni-a-Bar Creek. Due to the findings of a WLA study and QUAL2E model that established BOD_5 effluent limits, which protects the instream dissolved oxygen water quality criteria, no Dissolved Oxygen has been included in this permit.
  - o It is unknown at this time if the facility is a source of the above listed pollutant(s) or considered to contribute to the impairment of Stream name. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.
- ✓ The department conducted a stream survey on August 02, 2022, at two locations near this facility: instream approximately 01 miles downstream from Outfall #001 and at Outfall #001. No evidence suggesting the Oak Grove facility was impacting Sni-A-Bar. The low DO at this site, however, does suggest influences unknown at this time.

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. 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. Effluent limits set through the June 2024 Antidegradation Review, see **Appendix – Antidegradation Analysis**:

CHANGES TO EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Monthly Total	Monthly Average	Previous Permit Limit / Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/* 1/weekday	1/day	monthly	T
Total Flow	MG	1		*			1/month	monthly	M
PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ***
Copper, Total Recoverable	µg/L	3, 7	*		*	23.7/7.8	1/quarter	quarterly	C
Cadmium, Total Recoverable	µg/L	3, 7	1.8		0.6	*/*	1/quarter	quarterly	C

* - Monitoring requirement only.
** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.

*** - C = 24-hour composite
T = 24-hr. total
M = Measured/calculated

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review
5. Antidegradation Policy
6. Water Quality Model
7. Best Professional Judgment
8. TMDL or Permit in lieu of TMDL
9. WET Test Policy
10. Multiple Discharger Variance
11. Nutrient Criteria Implementation Plan

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **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.

- **Biochemical Oxygen Demand (BOD_5)**. Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. This limit was initially established in a Water Quality Review Sheet developed in 2004 with consideration of a WLA study and QUAL2E model submitted to the Department by MEC Water Resources. For a detailed explanation of this limit, **please see Appendix – Water Quality Review Sheet**.

- **Total Suspended Solids (TSS)**. Operating permit retains 35 mg/L as a Weekly Average and 25 mg/L as a Monthly Average from the previous permit. This limit was initially established in a Water Quality Review Sheet developed in 2004 with consideration of a WLA study and QUAL2E model submitted to the Department by MEC Water Resources. For a detailed explanation of this limit, **please see Appendix – Water Quality Review Sheet**.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1,030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen**. This operating permit retains final effluent limits from the previous permit except where the applicable water quality-based effluent limits (WQBELs) are more stringent. 10.1 mg/L as a Daily Maximum for February, March, and December. 1.1 mg/L as a Monthly Average for July. The existing limits are determined by the department to be protective of water quality and prevent increased pollutant loading. The below table highlights the applied effluent limits based on the most protective concentrations.

MONTH	Ecoregion data (Central Irregular Plains)		Water Quality Based Effluent Limits (present calculation method)		Previous Effluent Limits	
	Temp (˚C)	pH (SU)	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
January	2.8	7.8	12.1	3.1	11.5	2.6
February	4.0	7.9	10.1	2.7	11.5	2.6
March	10.6	7.9	10.1	2.7	11.5	2.6
April	17.0	7.9	10.1	2.3	4.8	1.3
May	22.0	7.8	12.1	1.9	4.8	1.3
June	26.0	7.8	12.1	1.5	4.8	1.3
July	28.9	7.9	10.1	1.1	4.8	1.3
August	28.0	7.8	12.1	1.3	4.8	1.3
September	24.1	7.8	12.1	1.7	4.8	1.3
October	17.5	7.8	12.1	2.6	11.5	2.6
November	11.6	7.8	12.1	3.1	11.5	2.6
December	4.9	7.9	10.1	2.7	11.5	2.6

Green cells are final effluent limits (Tables A-1 & A-2)

  - **Total Ammonia Nitrogen (previous limits) -** The previous effluent limits for ammonia were calculated using the 1999 Ambient Water Quality Criteria and ecoregional data from the Central Irregular Plains. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (˚C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30
Chronic WLA: $C_e = ((2.015 + 0.0)1.5 – (0.0 * 0.01))/2.015 = 1.5$ mg/L
Acute WLA: $C_e = ((2.015 + 0.0)12.1 – (0.0 * 0.01))/2.015 = 12.1$ mg/L

$LTA_c = 1.5$ mg/L (0.6736) = 1.01 mg/L [CV = 0.97, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.209) = 2.52 mg/L [CV = 0.97, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 1.01 mg/L (4.7926) = **4.8** mg/L [CV = 0.97, 99th Percentile]
AML = 1.01 mg/L (1.32) = **1.3** mg/L [CV = 0.97, 95th Percentile, n =30]

Winter: October 1 – March 31
Chronic WLA: $C_e = ((2.015 + 0.0)3.1 – (0.0 * 0.01))/2.015 = 3.1$ mg/L
Acute WLA: $C_e = ((2.015 + 0.0)12.1 – (0.0 * 0.01))/2.015 = 12.1$ mg/L

$LTA_c = 3.1$ mg/L (0.586) = 1.82 mg/L [CV = 1.35, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.1575) = 1.91 mg/L [CV = 1.35, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 1.82 mg/L (6.35) = **11.5** mg/L [CV = 1.35, 99th Percentile]
AML = 1.82 mg/L (1.45) = **2.6** mg/L [CV = 1.35, 95th Percentile, n =30]

- **Total Ammonia Nitrogen (WQBEL)** - Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

  The department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA's Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average. The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation:

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

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

  In the event that mixing considerations derive an AML less stringent than the MDL, the AML and MDL will be equal and based on the MDL.

February
Chronic WLA:
$C_e = ((0.116 + 0.0)2.7 – (0.0 * 0.01))/0.116 = 2.7$ mg/L

Acute WLA:
$C_e = ((0.116 + 0.0)10.1 – (0.0 * 0.01))/0.116 = 10.1$ mg/L

Chronic WLA = AML = 2.7 mg/L
Acute WLA = MDL = 10.1 mg/L

March
Chronic WLA:
$C_e = ((0.116 + 0.0)2.7 – (0.0 * 0.01))/0.116 = 2.7$ mg/L

Acute WLA:
$C_e = ((0.116 + 0.0)10.1 – (0.0 * 0.01))/0.116 = 10.1$ mg/L

Chronic WLA = AML = 2.7 mg/L
Acute WLA = MDL = 10.1 mg/L

July
Chronic WLA:
$C_e = ((0.116 + 0.0)1.1 – (0.0 * 0.01))/0.116 = 1.1$ mg/L

December
Chronic WLA:
$C_e = ((0.116 + 0.0)2.7 – (0.0 * 0.01))/0.116 = 2.7$ mg/L

Acute WLA:
$C_e = ((0.116 + 0.0)10.1 – (0.0 * 0.01))/0.116 = 10.1$ mg/L

Chronic WLA = AML = 1.1 mg/L
Acute WLA = MDL = 10.1 mg/L

Acute WLA:
$C_e = ((0.116 + 0.0)10.1 – (0.0 * 0.01))/0.116 = 10.1$ mg/L

Chronic WLA = AML = 2.7 mg/L
Acute WLA = MDL = 10.1 mg/L

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

- **Total Phosphorus, Total Kjeldahl Nitrogen & Nitrate + Nitrite, Total Nitrgen**. Effluent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite are required per 10 CSR 20-7.015(9)(D)8.

- **pH**. 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU.

- **Biochemical Oxygen Demand (BOD_5) Percent Removal**. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85 percent removal efficiency for BOD_5.

- **Total Suspended Solids (TSS) Percent Removal**. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85 percent removal efficiency for TSS.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support Document for Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply. Ecoregion water hardness for Central Irregular Plains of 200 mg/L is used in the calculation below. This value represents the 50th percentile (median) for all watersheds in-stream hardness values through the Ecoregion.

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

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.926	0.891

- **Cadmium, Total Recoverable**. This operating permit establishes final effluent limits from the applicable water quality-based effluent limits (WQBELs) limits. The more stringent WQBELs are determined by the department to be protective of water quality and prevent increased pollutant loading. The below table highlights the applied effluent limits based on the most protective concentrations.

Water Quality Based Effluent Limits		Previous Effluent Limits	
Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
1.8	0.6	*	*

Green cells are final effluent limits (Tables A-4)

  - **Cadmium, Total Recoverable (WQBEL)** - Protection of Aquatic Life Acute Criteria = 7.30 µg/L, Chronic Criteria = 0.998 µg/L. The hardness value of 155 mg/L represents the 50th percentile (median).

Acute AQL WQS: $e^{(1.0166 * \ln 155 – 3.062490)} * (1.136672 – \ln 155 * 0.041838) = 211.3$ [at Hardness 155]
Chronic AQL WQS: $e^{(0.7977 * \ln 155 – 3.909)} * (1.101672 – \ln 188 * 0.041838) = 211.3$ [at Hardness 155]

Acute WQS: $7.297 \div 0.926 = 7.883$ µg/L [Total Recoverable Conversion]
Chronic WQS: $0.998 \div 0.891 = 1.121$ µg/L [Total Recoverable Conversion]

Set WQS to WLA (when no mixing considerations) see mixing below

Acute WLA: $C_e = ((2.011 + 0.0)*216.0 – (0.0 * 0.0)) \div 2.011 = 7.883$ µg/L
Chronic WLA: $C_e = ((2.011 + 0.0)*214.3 – (0.0 * 0.0)) \div 2.011 = 1.121$ µg/L

LTA_a: 7.8825 (0.097) = 0.765 µg/L [CV = 2.74, 99th Percentile]
LTA_c: 1.1213 (0.155) = 0.174 µg/L [CV = 2.74, 99th Percentile]

Use most protective number of LTA_a or LTA_c.

MDL: 0.174 (10.308) = **1.8** µg/L [CV = 2.74, 99th Percentile]
AML: 0.174 (3.198) = **0.6** µg/L [CV = 2.74, 95th Percentile, n = 21]

- **Copper, Total Recoverable**. Monitoring only requirements have been included in this permit. An RPA was conducted based on the current WQS and determined that there is no reasonable potential to violate the water quality standard for Copper, please see **Appendix – RPA Results.** This determination will be reassessed at the time of renewal.

Sampling Frequency Justification: Sampling and Reporting Frequency was retained from previous permit. Monthly sampling is required for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite per 10 CSR 20-7.015(9)(D)8.B. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)7.A.

Sampling Type Justification: As per 10 CSR 20-7.015, samples collected for mechanical plants shall be a 24-hour modified composite sample. Grab samples, however, must be collected for pH, *E. coli*, and Oil & Grease in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

PERMITTED FEATURE INF – INFLUENT MONITORING

Influent Parameters

- **Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS)**. An influent sample is required to determine the removal efficiency. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals.

- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia**. Influent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia required per 10 CSR 20-7.015(9)(D)8.

Sampling Frequency Justification: The sampling and reporting frequencies for Total Phosphorus, Total Kjeldahl Nitrogen, Ammonia, and Nitrite + Nitrate parameters were established to match the required sampling frequency of these parameters in the effluent, per 10 CSR 20-7.015(9)(D)8. The sampling and reporting frequencies for influent BOD_5 and TSS have been established to match the required sampling frequency of these parameters in the effluent.

Sampling Type Justification: Sample types for influent parameters were established to match the required sampling type of these parameters in the effluent. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

OUTFALL #001 – GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that 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. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any 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)). It should also be noted that §644.076.1 RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states 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 §644.006 to §644.141 RSMo 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. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on July 20, 2022, no

evidence of an excursion of this criterion has been observed by the department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with the secondary treatment technology based effluent limits established in 40 CFR 133 and there has been no indication to the department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(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. Please see (A) above as justification is the same.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.

(E) Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state. Please see (D) above as justification is the same.

(F) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.

(G) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.

(H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.

(I) 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, §260.200 RSMo, except as the use of such materials is specifically permitted pursuant to §260.200 - 260.247 RSMo. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

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.

✓ The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)].

ANTI-BACKSLIDING:

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

✓ All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.
- Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

  - **Whole Effluent Toxicity**. The previous permit contained a monitoring requirement for a Chronic Whole Effluent Toxicity. The chronic whole effluent toxicity removed based on the permit writer's reasonable potential determination. This permit is protective of water quality and this determination will be reassessed at the time of renewal.

  - **Selenium, Total Recoverable**. Monitoring requirements have been removed from this permit. An RPA was conducted based on the current WQS and determined that there is no reasonable potential to violate the water quality standard for Selenium, please see **Appendix – RPA Results.** This determination will be reassessed at the time of renewal

- **Total Recoverable Copper**. A reasonable potential analysis was calculated for copper using new DMR data and new instream hardness data. As a result of a Reasonable Potential Analysis, it was determined that there is no reasonable potential to cause an excursion of water quality standard for copper in the receiving stream. Therefore, final effluent limits for copper have been removed and monitoring only is required to collect data over the permit cycle so this determination can be reassessed during the next renewal. Please see **Appendix – RPA Results** for more information.

o The department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under Section 402(a)(1)(b).

- The previous permit indicated "There Shall Be No Discharge of Floating Solids or Visible Foam in Other Than Trace Amounts" under each table. The statement was not evaluated against actual site conditions therefore, this general criterion was re-assessed. It was determined that this facility does not discharge solids or foam in amounts which would indicate reasonable potential, therefore the statement was removed. Each general criteria was assessed for this facility.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], for domestic wastewater discharge with new, altered, or expanding discharges, the department is to document by means of Antidegradation Review that 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 https://dnr.mo.gov/document-search/antidegradation-implementation-procedure.

✓ No degradation was proposed in this permit action and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

For stormwater 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.

✓ The facility does not have stormwater discharges, or the stormwater outfalls onsite have no industrial exposure.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(2)(C)], an applicant may utilize a lower preference continuing authority when a higher level authority is available by submitting information as part of the application to the department for review and approval, provided it does not conflict with any area-wide management plan approved under Section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the department.

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

✓ Permittee is authorized to land apply biosolids in accordance with Standard Conditions III. If other methods to remove and dispose (landfill, haul to another permitted treatment facility, etc.) of sludge/biosolids are needed and that method is not listed in the current permit, the permittee must modify the operating permit to add any biosolids/sludge disposal method to the facility description of the operating permit. For time sensitive situations, the permittee may contact the department to see about approval for a one-time removal and disposal of sludge/biosolids that are not identified in the facility description of the operating permit.

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.

Facility Performance History:

✓ The facility is not currently under Water Protection Program enforcement action. This facility was last inspected on July 20, 2022.

CONTINUING AUTHORITY:
Each application for an operating permit shall identify the person, as that term is defined in §644.016(19) RSMo, that is the owner of, operator of, or area-wide management authority for a water contaminant source, point source, wastewater treatment facility, or sewer collection system. This person shall be designated as the continuing authority and shall sign the application. By doing so, the person designated as the continuing authority acknowledges responsibility for compliance with all permit conditions.

10 CSR 20-6.010(2) establishes preferential levels for continuing authorities: Levels 1 through 5 (with Level 1 as the highest level), and generally requires permits to be issued to a higher preference continuing authority if available. A Level 3, 4, or 5 applicant may constitute a continuing authority by showing that Level 1 and Level 2 authorities are not available; do not have jurisdiction; are forbidden by state statute or local ordinance from providing service to the person; or that the Level 3, 4, or 5 applicant has met one of the requirements listed in paragraphs (2)(C)1.–7. of 10 CSR 20-6.010(2). The seven options in paragraphs (2)(C)1.–7. for a lower-level authority to demonstrate that it is the valid continuing authority are:

1. A waiver from the existing higher authority declining the offer to accept management of the additional wastewater or stormwater;
2. A written statement or a demonstration of non-response from the higher authority;
3. A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
4. A proposed connection or adoption charge by the higher authority that would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
5. A proposed service fee on the users of the system by the higher authority that is above what is affordable for existing homeowners in that area;
6. Terms for connection or adoption by the higher authority that would require more than two (2) years to achieve full sewer service; or
7. A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area.

Permit applicants that are Levels 3, 4, and 5 must, as part of their application, identify their method of compliance with this regulation. The following are the methods to comply.

- o No higher-level authorities are available to the facility;

- o No higher-level authorities have jurisdiction;

- o Higher level authorities are forbidden by state statute or local ordinance from providing service to the person;

- o The existing higher-level authority is available to the facility, however the facility has proposed the use of a lower preference continuing authority and has submitted one of the following as part of their application provided it does not conflict with any area-wide management plan approved under Section 208 of the Clean Water Act or by the Missouri Clean Water Commission. (See Fact Sheet Appendix - Continuing Authority for more information on these options):
    - A waiver from the existing higher authority;
    - A written statement or a demonstration of non-response from the higher authority;
    - A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
    - Documentation that the proposed connection or adoption charge by the higher authority would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
    - Documentation that the proposed service fee on the users of the system by the higher authority is above what is affordable for existing homeowners in that area;
    - Documentation that the terms for connection or adoption by the higher authority would require more than two (2) years to achieve full sewer service;
    - A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area;

- ✓ The continuing authority listed on the application is a municipality and therefore a Level 3 Authority. There is no approved Clean Water Act Section 208 plan in Jackson County. The applicant has shown that:

    - o A higher-level authority is not available to the facility.

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. In an effort to aid facilities in the reporting of applicable information electronically, the department has created several new forms including operational control monitoring forms and an I&I location and reduction form. These forms are optional and can be provided upon request to the department.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to five 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: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. Each facility must make a request. If a single entity owns or operates more than one facility, 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.

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

NUMERIC LAKE NUTRIENT CRITERIA:

✓ This facility does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

OPERATOR CERTIFICATION REQUIREMENTS:
As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems with population equivalents greater than 200 and are owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and state or federal agencies.

✓ This facility is required to have a certified operator as it has a population equivalent greater than 200 and is owned or operated by or for a municipality, public sewer district, county, public water supply district, private sewer company regulated by the PSC, state or federal agency.

This facility currently requires a chief operator with a B Certification Level. Please see **Appendix - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Jacob Haygood
Certification Number: 14211
Certification Level: WW-A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

OPERATIONAL CONTROL TESTING:
Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publicly owned treatment works and privately owned facilities regulated by the Public Service Commission to conduct internal operational control monitoring to further ensure proper operation of the facility and to be a safeguard or early warning for potential plant upsets that could affect effluent quality. This requirement is only applicable if the publicly owned treatment works, and privately owned facilities regulated by the Public Service Commission has a calculated Population Equivalent greater than 200.

10 CSR 20-9.010(3) allows the department to modify the monitoring frequency required in the rule based upon the department's judgement of monitoring needs for process control at the specified facility.

✓ The department has approved alternative monitoring frequencies to the Operational Monitoring testing requirements in 10 CSR 20-9.010(5)(B) for the facility.

- The facility is a mechanical plant and is required to conduct operational control monitoring as follows:

Operational Monitoring Parameter	Frequency*
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)

* excluding holidays

PRETREATMENT PROGRAM:

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

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

✓ The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL (RP):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] and State Regulation [10 CSR 20-7.015(9)(A)2] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that 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.

A reasonable potential analysis (RPA) is a numeric RP decision calculated using effluent data provided by the facility for parameters that have a numeric Water Quality Standard (WQS).

Reasonable potential determinations (RPD) are based on physical conditions of the site as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD using best professional judgement. An RPD consists of evaluating visual observations for compliance with narrative criteria, non-numeric information, or small amounts of numerical data (such as 3 data points supplied in the application). Narrative criteria with RP typically translate to a numeric WQS, so a parameter's establishment being based on narrative criteria does not necessarily make the decision an RPD vs RP—how the data is collected does, however. When insufficient data is received to make a determination on RP based on numeric effluent data, the RPD decisions are based on best professional judgment considering the sources of influent wastewater, type of treatment, and historical overall management of the site.

✓ An RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS.**

✓ A RPD was made for a chronic whole effluent toxicity, that a potential to violate water quality standards does not exist. Please see Derivation and Discussion of Limits.

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

✓ Secondary Treatment is 85 percent removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):
Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(12)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.

§644.026.1.(13) RSMo, mandates that the department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by §644.006 to §644.141 RSMo. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. §644.026.1.(15) RSMo, instructs the department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

✓ At this time, the department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the departments' CMOM Model located at https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template. For additional information regarding the departments' CMOM Model, see the CMOM Plan Model Guidance document at https://dnr.mo.gov/print/document-search/pub2574. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):
Per §644.051.7 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.

- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study that may result in site-specific criteria or alternative effluent limits. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015, the department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

✓ This permit does not contain an SOC.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:
In accordance with [10 CSR 20-6.010(6)(A)], the department may grant approval of a permittee's Sewer Extension Authority Supervised Program. These approved permittees regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility. The permittee shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater/construction-engineering.

✓ The permittee does not have a department approved Sewer Extension Authority Supervised Program.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under Section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under Section 402(p) of the CWA for the control of 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 June 2015], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the 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 stormwater discharges. 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 (https://dnr.mo.gov/document-search/antidegradation-implementation-procedure).

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: https://dnr.mo.gov/forms-applications.

✓ The City of Oak Grove submitted to the department a No Exposure Certification for Exclusion from NPDES Stormwater Permitting on January 15, 2025. As a result of the submittal of the certification, the permittee is not required to develop and implement a SWPPP at this time. This exclusion will be reevaluated at the time of renewal or during a department inspection.

TOTAL PHOSPHORUS TARGET REDUCTION LEVELS:

Per 10 CSR 20-7.015(9)(B)2., total phosphorus target reduction levels apply to all domestic facilities with design flow greater than or equal to 1,000,000 gallons per day (1 MGD) and all industrial facilities categorized as major that typically discharge phosphorus in their industrial wastewater, except for facilities which already have more stringent phosphorus requirements as required by 10 CSR 20-7.015(3)(E), (3)(F), (9)(A)4., and (9)(A)5., for discharges to Lake Taneycomo, Table Rock Lake, a TMDL watershed with phosphorus allocations, or as addressed by antidegradation review, respectively.

10 CSR 20-7.015(9)(B)2.A. establishes four options for compliance with total phosphorus target reduction levels. These four options are:

1. 1.0 mg/L annual average;
2. Annual mass loading equal to 1.0 mg/L based on the design flow.
3. An overall reduction of total phosphorus from influent to effluent by 75 percent.
4. An overall reduction of annual load of total phosphorus discharged by 75 percent.

✓ Applicable. This facility is a domestic major with a design flow greater than or equal to 1 MGD but less than 15 MGD; therefore, total phosphorus target reduction levels will be incorporated in your next permit cycle with an implementation date of **January 1, 2033**. An alternative implementation date may be requested per 10 CSR 20-7.015(9)(2)D.(IV).

Permittees shall submit the following on the next renewal application:

- Chosen compliance method.
  - If implementing compliance option 2, and the facility is a combined sewer system, permittees can request alternative considerations or calculations.
  - If implementing compliance option 3, at least two years of influent and effluent monitoring data is required.
  - If implementing compliance option 4, sufficient and representative data is required.
- Alternative implementation date, if applicable.
- Application for nutrient trading, if utilizing.

VARIANCE:

As per §644.061.4 RSMo, 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 RSMo, or any standard, rule or regulation promulgated pursuant to §644.006 to §644.141 RSMo.

✓ This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(86)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

✓ Wasteload allocations were not calculated.

WLA MODELING:
There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

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

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

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 that the provisions in the 10 CSR 20-6.010(8)(A) and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(J)2.A & B are being met. Under [10 CSR 20-6.010(8)(B)], the department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition, the following applies: §644.051.7 RSMO, requires the department to set permit conditions that comply with the MCWL and CWA and specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and §644.051.8 RSMo, is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

☒ Facility is a designated Major.
☐ Facility continuously or routinely exceeds its design flow.
☐ Facility that exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☒ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

✓ The permittee is not required to conduct chronic WET test for this facility as the facility has passed previous chronic WET tests; however, annual Acute WET tests are required.

40 CFR 122.41(M) - BYPASSES:
The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from "bypassing" untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

✓ This facility does not anticipate bypassing.

Part IV – Cost Analysis for Compliance

Pursuant to §644.145 RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, 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 combined or separate sanitary or storm sewer system or [publicly owned] treatment works, 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 that do not include new requirements may be deemed affordable.

✓ The department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

Part V – Administrative Requirements

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

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

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

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 April 4, 2025, to May 5, 2025. Responses to the Public Notice of this operating permit did not warrant the modification of effluent limits and/or the terms and conditions of this permit. A justification of meeting backsliding provisions was added to support the change of effluent limitations for copper from limits to monitoring only.

DATE OF FACT SHEET: MARCH 3, 2025

COMPLETED BY:

REFAAT MEFRAKIS, P.E.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
ON BEHALF OF OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 751-6568
Refaat.Mefrakis@dnr.mo.gov

Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

Item	Points Possible	Points Assigned
Maximum Population Equivalent (P.E.) served, peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	1
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	4
Effluent Discharge		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, lake or reservoir area supporting whole body contact recreation	3	
Direct reuse or recycle of effluent	6	
Land Application/Irrigation		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
Variation in Raw Wastes (highest level only)		
Variations do not exceed those normally or typically expected	0	
Reoccurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2	2
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow	3	3
Flow equalization	5	5
Primary Treatment		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	4	
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	
Activated sludge (including aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film	10	
Biological, physical, or chemical	12	
Carbon regeneration	4	
Total from page **ONE (1)**	----	36

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	5
Anaerobic digestion	10	
Aerobic digestion	6	
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	
Disinfection		
Chlorination or comparable	5	
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	
UV light	4	4
Required Laboratory Control Performed by Plant Personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page **TWO (2)**	----	16
Total from page **ONE (1)**	---	36
Grand Total	---	52

☐ - A: 71 points and greater52
☒ - B: 51 points – 70 points
☐ - C: 26 points – 50 points
☐ - D: 0 points – 25 points

APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Ammonia as N – Summer (mg/L)	12.1	63.98	1.3	63.98	31	16.8/0.13	1.49	3.81	YES
Ammonia as N – Winter (mg/L)	10.1	30.58	2.7	30.58	32	9.6/0.01	1.21	3.19	YES
Copper (Cu)	21.15	8.25	13.57	8.25	21	4/1	0.52	2.06	NO
Selenium (Se)	n/a	1.70	5.00	1.70	21	1/0.1	0.37	1.70	NO
Cadmium (Cd)	7.88	380.77	1.12	380.77	21	44.1/0.1	2.74	8.63	YES

N/A – Not Applicable
* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.
*** - 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. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).
n – Is the number of samples.
MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.
RP – Reasonable Potential. It is where 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).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

APPENDIX – Non-Detect Example Calculations:

Example: Permittee has four samples for Pollutant X which has a method minimum level of 5 mg/L and is to report a Daily Maximum and Monthly Average.

Week 1 = 11.4 mg/L
Week 2 = Non-Detect or <5.0 mg/L
Week 3 = 7.1 mg/L
Week 4 = Non-Detect or <5.0 mg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

11.4 + 0 + 7.1 + 0 = 18.5 ÷ 4 (number of samples) = 4.63 mg/L.

The Permittee reports a Monthly Average of 4.63 mg/L and a Daily maximum of 11.4 mg/L (Note the < symbol was dropped in the answers).

Example: Permittee has five samples for Pollutant Y that has a method minimum level of 9 µg/L and is to report a Daily Maximum and Monthly Average.

Day 1 = Non-Detect or <9.0 µg/L
Day 2 = Non-Detect or <9.0 µg/L
Day 3 = Non-Detect or <9.0 µg/L
Day 4 = Non-Detect or <9.0 µg/L
Day 5 = Non-Detect or <9.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(9 +9 +9 +9 +9) ÷ 5 (number of samples) = <9 µg/L.

The Permittee reports a Monthly Average of <9.0 µg/L (retain the 'less than' symbol) and a Daily Maximum of <9.0 µg/L.

Example: Permittee has four samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 µg/L and the remaining two tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(4 + 4 + 6 + 6) ÷ 4 (number of samples) = <5 µg/L. (Monthly)

The facility reports a Monthly Average of <5.0 µg/L and a Weekly Average of <6.0 µg/L.

APPENDIX – Non-Detect Example Calculations (Continued):

Example: Permittee has five samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 µg/L and the remaining three tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <6.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(4 + 4 + 6 + 6 + 6) ÷ 5 (number of samples) = <5.2 µg/L. (Monthly)
(4 + 6) ÷ 2 (number of samples) = <5 µg/L. (Week 2)

The facility reports a Monthly Average of <5.2 µg/L and a Weekly Average of <6.0 µg/L (report highest Weekly Average value)

Example: Permittee has four samples for Pollutant Z where the tests were conducted using a method with a method minimum level of 10 µg/L and is to report a Monthly Average and Daily Maximum. The permit lists that Pollutant Z has a department determined Minimum Quantification Level (ML) of 130 µg/L.

Week 1 = 12 µg/L
Week 2 = 52 µg/L
Week 3 = Non-Detect or <10 µg/L
Week 4 = 133 µg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

For this example, (12 + 52 + 0 + 133) ÷ 4 (number of samples) = 197 ÷ 4 = 49.3 µg/L.

The facility reports a Monthly Average of 49.3 µg/L and a Daily Maximum of 133 µg/L.

Example: Permittee has five samples for *E. coli* which has a method minimum level of 1 #/100mL and is to report a Weekly Average (seven (7) day geometric mean) and a Monthly Average (30 day geometric mean).

Week 1 = 102 #/100mL
Week 2 (Monday) = 400 #/100mL
Week 2 (Friday) = Non-Detect or <1 #/100mL
Week 3 = 15 #/100mL
Week 4 = Non-Detect or <1 #/100mL

For this example, use subpart (i) - When *E. coli* is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means. The Geometric Mean is calculated by multiplying all the data points and then taking the nth root of this product, where n = # of samples collected.

The Monthly Average (30 day Geometric Mean) = 5th root of (102)(400)(0.5)(15)(0.5) = 5th root of 153,000 = 10.9 #/100mL.
The 7 day Geometric Mean = 2nd root of (400)(0.5) = 2nd root of 200 = 14.1 #/100mL. (Week 2)

The Permittee reports a Monthly Average (30 day Geometric Mean) of 10.9 #/100mL and a Weekly Average (7 day geometric mean) of 102 #/100mL (report highest Weekly Average value)

APPENDIX – SITE MAP:

APPENDIX – INSTREAM SAMPLING LOCATION MAP:

APPENDIX – WATER QUALITY REVIEW SHEET

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

Water Quality Review Sheet
Determination of Effluent Limits

Facility Information

FACILITY NAME: Oak Grove WWTP (Proposed) NPDES #: N/A

FACILITY TYPE/DESCRIPTION: Proposed 1.3 MGD mechanical plant will eliminate the Oak Grove North WWTF (MO-0040886) and Oak Grove South WWTP (MO-0106259) lagoons.

ECOREGION: Central Irregular Plains 8-DIGIT HUC: 10300101 COUNTY: Lafayette
Central Irregular Plains Osage Plains
Mississippi Alluvial Plains Ozark Highlands

LEGAL DESCRIPTION: SW SW Sec.22, T49N, R29W LATITUDE/LONGITUDE: +39.03352/-94.10656

WATER QUALITY HISTORY:
Horseshoe Creek, the receiving stream for the Oak Grove North and South lagoons, has been placed on the 2002 303(d) list for BOD and ammonia from these facilities. The proposed WWTF will eliminate the lagoon discharges to Horseshoe Creek and improvements in water quality are expected. The City of Oak Grove contracted with MEC Water Resources to conduct a water quality study, develop a water quality model, and submit recommended effluent limitations to the department for review and consideration.

Outfall Characteristics

OUTFALL	FACILITY	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY
001	Oak Grove WWTF	2.02	Mechanical	Unnamed Tributary to Sni-A-Bar Creek

Receiving Waterbody Information

WATERBODY	CLASS	7Q10(CFS)	*DESIGNATED USES	OTHER CHARACTERISTICS
Unnamed Tributary to Sni-A-Bar Creek	U	0.0	N/A	~0.7 mi to Sni-A-Bar Cr.
Sni-A-Bar Creek	P	0.1	LWW, AQL, BTG	WBID: 0399

*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC), Protection of Warmwater Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS:
Updated WQRS and associated water quality based effluent limits (WQBELs) developed to reflect new receiving stream information and consideration of submitted results from the MEC Water Resources water quality study and QUAL2E model.

MIXING CONSIDERATIONS:

Mixing Zone (MZ). Unnamed tributary to Sni-A-Bar Creek is unclassified, therefore no mixing zone is allowed. Acute criteria apply per 10 CSR 20-7.031(3)(I)1. and chronic criteria must be met immediately downstream of the confluence with Sni-A-Bar Creek.

Zone of Initial Dilution (ZID). Not allowed. Unnamed tributary to Sni-A-Bar Creek is unclassified and acute criteria must be met end-of-pipe.

Permit Limits and Information

TMDL WATERSHED: (Y OR N)	W.L.A. STUDY CONDUCTED: (Y OR N)	DISINFECTION REQUIRED: (Y OR N)	DISINFECTION WAIVER: (Y, N, NA)
	Y	Y	N	NA

OUTFALL# 001

WET TEST (Y OR N): Y FREQUENCY: ONCE/YEAR A.E.C. 100% LIMIT: NO SIGNIFICANT MORTALITY

PARAMETER	UNITS	MAXIMUM DAILY LIMIT	WEEKLY AVERAGE LIMIT	AVERAGE MONTHLY LIMIT	MONITORING FREQUENCY	SAMPLE TYPE
FLOW		*		*	DAILY	24 hour total
BIOCHEMICAL OXYGEN DEMAND (BOD_5)	MG/L		30	20	ONCE/WEEK	Composite
TOTAL SUSPENDED SOLIDS	MG/L		35	25	ONCE/WEEK	Composite
PH	SU	6 – 9		6 – 9	ONCE/WEEK	Grab
AMMONIA AS N (MAY 1 – OCT 31)	MG/L	2.8		1.4	ONCE/WEEK	Composite
AMMONIA AS N (NOV 1 – APR 30)	MG/L	4.7		2.3	ONCE/WEEK	Composite
TEMPERATURE	°C	*		*	ONCE/WEEK	grab
DISSOLVED OXYGEN	MG/L	*		*	ONCE/WEEK	grab
TOTAL NITROGEN	MG/L	*		*	ONCE/MONTH	grab
NITRATE + NITRITE	MG/L	*		*	ONCE/MONTH	grab

* - Monitoring Requirement Only

Receiving Water Monitoring Requirements

Site S1.

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen**	Once/month	Grab	Immediately upstream of confluence with Sni-A-Bar Creek
Temperature	Once/month	Grab	
pH	Once/month	Grab	
Ammonia as Nitrogen	Once/month	Grab	
Total Suspended Solids	Once/month	Grab	

The upstream sampling location (S1) must be located such that samples are uninfluenced by WWTF effluent.

Site S2.

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen**	Once/month	Grab	Immediately downstream of confluence with Sni-A-Bar Creek
Temperature	Once/month	Grab	
pH	Once/month	Grab	
Ammonia as Nitrogen	Once/month	Grab	
Total Suspended Solids	Once/month	Grab	

**Dissolved oxygen samples must be taken during the period from one hour before to one hour after sunrise.

Derivation and Discussion of Limits

Wasteload allocations were calculated using water quality criteria and the dilution equation below:

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

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

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

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

- **Biochemical Oxygen Demand (BOD_5)**. Preliminary modeling by department staff indicated that $CBOD_5$ levels above 5 mg/L (or BOD_5 = 10 mg/L) may cause dissolved oxygen depressions harmful to aquatic life during low flow periods for a discharge directly to Horseshoe Creek. These limits were presented in a previous WQRS dated 04/18/02 and revised 01/28/03.

  The City of Oak Grove has proposed to discharge to an unclassified tributary to Sni-A-Bar Creek and has contracted with MEC Water Resources to conduct a water quality study and submit recommended effluent limits to the department for review and consideration. The results of the water quality study and QUAL2E modeling indicate a $CBOD_5$ wasteload allocation (WLA) of 20 mg/L, along with an ammonia as nitrogen WLA of 2.9 mg/L, is expected to prevent dissolved oxygen excursions below applicable criteria during the summer. No recommended $CBOD_5$ WLA was submitted for the winter.

  In determining compliance of the water quality model with the dissolved oxygen minimum criteria (5.0 mg/L), MEC Water Resources applied an older departmental interpretation of the mixing zone regulations. The old interpretation allowed for compliance with water quality criteria 0.25 miles downstream of the confluence of an unclassified receiving stream and a classified waterbody. Current P&E and WQMA staff feel that this interpretation is not protective or justifiable. Acute water quality criteria apply in the unclassified receiving stream and chronic criteria must be met at, or immediately downstream of, the confluence with the classified waterbody. Using the MEC Water Resources QUAL2E stream reach configuration, the dissolved oxygen minimum criteria (5.0 mg/L) must be met in Reach 4, Cell 1. The Oak Grove QUAL2E water quality model predicts a dissolved oxygen concentration of 4.8 mg/L for this location.

  Due to the excursion from dissolved oxygen minimum criteria in Sni-A-Bar Creek predicted by the model and to account for the uncertainty involved in using an uncalibrated water quality model, staff recommend $CBOD_5$ = 15 mg/L (or BOD_5 = 20 mg/L) monthly average and $CBOD_5$ = 25 mg/L (or BOD_5 = 30 mg/L) weekly average limits.

- **Total Suspended Solids (TSS)**. The previous WQRS dated 04/18/02 and revised 01/28/03 recommended TSS effluent limits of 15 mg/L and 20 mg/L as monthly and weekly averages, respectively. Given the change in receiving stream from Horseshoe Creek to an unnamed tributary to Sni-A-Bar Creek, staff feel these effluent limits are overly stringent. However, direct application of technology-based limitations may not be protective of the receiving stream. Based on discussions with MEC Water Resources and best professional judgement, staff recommend TSS effluent limits 5 mg/L greater than the proposed BOD_5 limitations. Therefore, TSS effluent limits of 25 mg/L monthly average and 35 mg/L weekly average are recommended.

- **pH**. pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015(8)(B)2.].

- **Ammonia as Nitrogen**. Ammonia criteria for waters designated as limited warm-water fisheries apply [10 CSR 20-7.031, Table B]. Background ammonia as nitrogen for the unclassified tributary to Sni-A-Bar Creek = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia CCC (mg/L)	Total Ammonia CMC (mg/L)
Summer	26	7.8	2.0	22.4
Winter	6	7.8	3.3	26.4

Summer: May 1 – October 31, Winter: November 1 – April 30

$C_e = ((Q_e + Q_s)C – (Q_s * C_s))/Q_e$

Summer
Ammonia as Nitrogen CCC = 2.0/1.2 = 1.7 mg/L
Ammonia as Nitrogen CMC = 22.4/1.2 = 18.7 mg/L

Chronic WLA: $C_e = ((2.02 + 0.0)1.7 – (0.0 * 0.01))/2.02$
C_e = 1.7 mg/L

Acute WLA: $C_e = ((2.02 + 0.0)18.7 – (0.0 * 0.01))/2.02$
C_e = 18.7 mg/L

LTA_c = 1.7 mg/L (0.527) = 0.9 [CV = 0.6, 99th Percentile]

MDL = 0.9 * 3.11 = 2.8 mg/L [CV = 0.6, 99th Percentile]
AML = 0.9 * 1.55 = 1.4 mg/L [CV = 0.6, 95th Percentile, n = 4]

Winter

Ammonia as Nitrogen CCC = 3.3/1.2 = 2.8 mg/L
Ammonia as Nitrogen CMC = 26.4/1.2 = 22.0 mg/L

Chronic WLA: $C_e = ((2.02 + 0.0)2.8 – (0.0 * 0.01))/2.02$
$C_e =$ **2.8 mg/L**

Acute WLA: $C_e = ((2.02 + 0.0)22.0 – (0.0 * 0.01))/2.02$
$C_e =$ 22.0 mg/L

LTA_a = 2.8 mg/L (0.527) = 1.5 [CV = 0.6, 99th Percentile]

MDL = 1.5 * 3.11 = 4.7 mg/L [CV = 0.6, 99th Percentile]
AML = 1.5 * 1.55 = 2.3 mg/L [CV = 0.6, 95th Percentile, n = 4]

Season	Maximum Daily Limit (mg/L)	Average Monthly Limit (mg/L)
Summer	2.8	1.4
Winter	4.7	2.3

Reviewer: John Hoke
Date: 5/17/04
Unit Chief: Richard J. Laux

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data or anecdotal information are available that may affect the recommended monitoring and effluent limits, please forward these data and information to the author.

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

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
MAY 1, 2013

PART II - SPECIAL CONDITIONS – PUBLICLY OWNED TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the *General Pretreatment Regulation* 10 CSR 20-6.100, the term Significant Industrial User means:

1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's or for violating any Pretreatment Standard or requirement.

Clean Water Act (CWA) is the the federal Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. (2002).

2. Identification of Industrial Discharges

Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information

Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department

Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
3. For purposes of this paragraph, adequate notice shall include information on:
   i. the quality and quantity of effluent introduced into the POTW, and
   ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

Missouri Department of Natural Resources
Water Protection Program
Attn: Pretreatment Coordinator
P.O. Box 176
Jefferson City, MO 65102

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

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

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

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food, feed or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR Part 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with 40 CFR Part 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limted to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
14. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or, if the ash is determined to be hazardous, with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or sludge must be removed to maintain adequate storage capacity in the facility.
    a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
    b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

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

5. Pollutant limits
    a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
    b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to achieve pollutant concentration below those identified in Table 1, below.
    c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

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

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

TABLE 2

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

e. Annual pollutant loading rate.

Table 3

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

f. Cumulative pollutant loading rates.

Table 4

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

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

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

i. PAN can be determined as follows:

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

[1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis.

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

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

d. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, water supply reservoir or water supply intake in a stream;

ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstandingstate resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;

iii. 150 feet of dwellings or public use areas;

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

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

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

e. Slope limitation for application sites are as follows:

i. For slopes less than or equal to 6 percent, no rate limitation;

ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;

iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

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

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

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

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

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

iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I– CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all sludges and/or biosolids. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Biosolids or sludge that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre. Alternative, site-specific application rates may be included in the closure plan for department consideration.
        i. PAN can be determined as follows:
        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are "similar treatment works" under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required.
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200.
7. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

surface water drainage without creating erosion.

b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.

c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill, reclamation, or other beneficial use. Other solid wastes must be removed.

8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

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

TABLE 5

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

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

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

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

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit.
4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

5. Annual report contents. The annual report shall include the following:
    a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
    b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
        ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
        iii. Report the method used for compliance with pathogen and vector attraction requirements.
        iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.

AP 42926

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

FORM B2 – APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FACILITY NAME	
Oak Grove WWTF	
PERMIT NO.	COUNTY
MO-0130371	Jackson County

APPLICATION OVERVIEW

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

BASIC APPLICATION INFORMATION

A. Basic Application Information for all Applicants. All applicants must complete Part A.

B. Additional Application Information for all Applicants. All applicants must complete Part B.

C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:

1. Has a design flow rate greater than or equal to 1 million gallons per day.
2. Is required to have or currently has a pretreatment program.
3. Is otherwise required by the permitting authority to provide the information.

E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:

1. Has a design flow rate greater than or equal to 1 million gallons per day.
2. Is required to have or currently has a pretreatment program.
3. Is otherwise required by the permitting authority to provide the information.

F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.

SIUs are defined as:

1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
2. Any other industrial user that meets one or more of the following:
   - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
   - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   - iii. Is designated as an SIU by the control authority.
   - iv. Is otherwise required by the permitting authority to provide the information.

G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems.*

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

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

FORM B2 – APPLICATION FOR AN OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

- ☐ An operating permit for a new or unpermitted facility. Construction Permit # _____
  (Include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)
- ☑ An operating permit renewal: Permit #MO- 0130371 Expiration Date March 31,2024
- ☐ An operating permit modification: Permit #MO-_____ Reason: _____

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

2. FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE
Oak Grove WWTF	816-690-0087

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
1500 Gillispie Rd.	Oak Grove	MO.	64075

2.1 **LEGAL DESCRIPTION** (Facility Site): ¼, ¼, SW ¼, Sec. 22 , T 49n , R 29W COUNTY: Jackson County

2.2 UTM Coordinates Easting (X): 404175 Northing (Y): 4321090
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Unnamed Tributary of Sni-A-Bar Creek

2.4 Number of Outfalls: 1 wastewater outfalls, 1 stormwater outfalls, instream monitoring sites

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
City of Oak Grove MO.	calford@cityofoakgrove.com	816-690-3773

ADDRESS	CITY	STATE	ZIP CODE
2110 S. Broadway	Oak Grove	MO.	64075

3.1 Request review of draft permit prior to Public Notice? ☑ YES ☐ NO

3.2 Are you a Publically Owned Treatment Works (POTW)? ☑ YES ☐ NO
If yes, is the Financial Questionnaire attached? ☑ YES ☐ NO

3.3 Are you a Privately Owned Treatment Facility? ☐ YES ☑ NO

3.4 Are you a Privately Owned Treatment Facility regulated by the Public Service Commission (PSC)? ☐ YES ☑ NO

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
Mayor Dana Webb	dwebb@cityofoakgrove.com	816-690-3773

ADDRESS	CITY	STATE	ZIP CODE
2110 S Broadway	Oak Grove	MO.	64075

If the Continuing Authority is different than the Owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

5. OPERATOR

NAME	TITLE	CERTIFICATE NUMBER (IF APPLICABLE)
Bryan Leighow	Chief WWTF Operator	5910

EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
bleighow@cityofoakgrove.com	816-690-0087

6. FACILITY CONTACT

NAME	TITLE
Bryan Leighow	Chief WWTF Operator

EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
bleighow@cityofoakgrove.com	816-690-0087

ADDRESS	CITY	STATE	ZIP CODE
2110 S Broadway	Oak Grove	MO.	64075

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

7.1 Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – Chlorination and Dechlorination), influents, and outfalls. Specify where samples are taken. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram.
Attach sheets as necessary.

1) Headworks Building - stepscreen removal, grit chamber, Raw sample
2) Aeration Basin - fine air diffusers, mixing, RAS sample
3) Splitter Box - separating flow, ML sample
4) Clarifiers 1 and 2 - Settling
5) RAS/WAS Pit - returning, wasting
6) Partial Flume - ultrasonic measure
7) UV Building - UV disinfection, EFF samples
8) Outfall

See Attached Process Diagram

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

7.2 Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information.

a. The area surrounding the treatment plant, including all unit processes.
b. The location of the downstream landowner(s). (See Item 10.)
c. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
d. The actual point of discharge.
e. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
f. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
g. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, or disposed.

7.3 Facility SIC Code: 4952 . | Discharge SIC Code: _____.

7.4 Number of people presently connected or population equivalent (P.E.): 8492 Design P.E. _____

7.5 Connections to the facility:

Number of units presently connected:

Homes 3200 Trailers n/a Apartments 17 Other (including industrial) _____

Number of Commercial Establishments: 194

7.6 Design Flow: 1.3 MGD | Actual Flow: .942 MGD

7.7 Will discharge be continuous through the year? Yes ☑ No ☐

Discharge will occur during the following months: How many days of the week will discharge occur?

All months 7 days a week

7.8 Is industrial wastewater discharged to the facility? Yes ☐ No ☑

If yes, describe the number and types of industries that discharge to your facility. Attach sheets as necessary

Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.

7.9 Does the facility accept or process leachate from landfills?: Yes ☐ No ☑

7.10 Is wastewater land applied? Yes ☐ No ☑

If yes, is Form I attached? Yes ☐ No ☐

7.11 Does the facility discharge to a losing stream or sinkhole? Yes ☐ No ☑

7.12 Has a wasteload allocation study been completed for this facility? Yes ☐ No ☑

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant.	Yes ☑	No ☐
Push–button or visual methods for simple test such as pH, settleable solids.	Yes ☑	No ☐
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes ☑	No ☐
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes ☑	No ☐
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes ☐	No ☑

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART A – BASIC APPLICATION INFORMATION

9. SLUDGE HANDLING, USE AND DISPOSAL

9.1 Is the sludge a hazardous waste as defined by 10 CSR 25? Yes ☐ No ☑

9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 305 Actual Dry Tons/Year 144

9.3 Sludge storage provided: 1MG Cubic feet; _____ Days of storage; 2 Average percent solids of sludge;

☐ No sludge storage is provided. ☑ Sludge is stored in lagoon.

9.4 Type of storage:

☐ Holding Tank ☐ Building
☐ Basin ☑ Lagoon
☐ Concrete Pad ☐ Other (Describe) _____

9.5 Sludge Treatment:

☐ Anaerobic Digester ☐ Storage Tank ☐ Lime Stabilization ☑ Lagoon
☐ Aerobic Digester ☐ Air or Heat Drying ☐ Composting ☐ Other (Attach Description)

9.6 Sludge use or disposal:

☐ Land Application ☐ Contract Hauler ☐ Hauled to Another Treatment Facility ☐ Solid Waste Landfill
☑ Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) ☐ Incineration
☐ Other (Attach Explanation Sheet) _____

9.7 Person responsible for hauling sludge to disposal facility:
☐ By Applicant ☐ By Others (complete below)

NAME	EMAIL ADDRESS		
NA			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	

9.8 Sludge use or disposal facility:
☐ By Applicant ☐ By Others (Complete below)

NAME	EMAIL ADDRESS		
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	

9.9 Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503?
☑ Yes ☐ No (Explain)

END OF PART A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Length of sanitary sewer collection system in miles
50.46 Grav, 6.92 Fo

10.2 Does significant infiltration occur in the collection system? ☑ Yes ☐ No
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:
Hire Burns & McDonnald for study. Continue to line manholes and mains.

11. BYPASSING

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes ☐ No ☑
If yes, explain:

12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of the contractor?
Yes ☐ No ☑
If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)

NAME	
MAILING ADDRESS	
TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
RESPONSIBILITIES OF CONTRACTOR	

13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

Provide information about any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses for each.
Ongoing replacement of blower diffusers

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data **for each outfall through which effluent is discharged.** Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart.

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	7.12	S.U.	7.54	S.U.	87
pH (Maximum)	8.77	S.U.	8.29	S.U.	87
Flow Rate	3.357	MGD	.858	MGD	365

*For pH report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
		Conc.	Units	Conc.	Units	Number of Samples		
Conventional and Nonconventional Compounds								
BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD_5	19.28	mg/L	6.38	mg/L	41	SM 22 5210 B	
	$CBOD_5$	NA	mg/L	NA	mg/L	NA	NA	
E. COLI		325.5	#/100 mL	21.16	#/100 mL	24	MPN	
TOTAL SUSPENDED SOLIDS (TSS)		16.2	mg/L	4.68	mg/L	93	SM 22 2540 D	
AMMONIA (as N)		1.0	mg/L	.206	mg/L	95	SM 22 45010 D	
CHLORINE* (TOTAL RESIDUAL, TRC)		NA	mg/L	NA	mg/L	NA	NA	
DISSOLVED OXYGEN		9.49	mg/L	8.05	mg/L	95	SM 22 4500-O G.	
OIL and GREASE		< 5	mg/L	< 5	mg/L	5	EPA 1664 A	
OTHER			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART C – CERTIFICATION

15. CERTIFICATION

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
Bryan Leighow	Chief Wastewater Treatment Operator

SIGNATURE Bryan Leighow

TELEPHONE NUMBER WITH AREA CODE
816-690-3773

DATE SIGNED
July 7, 2023

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

Send Completed Form to:

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102

END OF PART C
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH PARTS OF FORM B2 YOU MUST COMPLETE.

Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:

1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
2. Your facility is a pretreatment treatment works.
3. Your facility is a combined sewer system.

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

Refer to the APPLICATION OVERVIEW to determine whether Part D applies to the treatment works.

If the treatment works has a design flow greater than or equal to 1 million gallons per day or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information **for each outfall through which effluent is discharged.** Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least **three pollutant scans** and must be no more than four and one-half years apart.

Outfall Number (Complete Once for Each Outfall Discharging Effluent to Waters of the State.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS											
ALUMINUM											
ANTIMONY											
ARSENIC											
BERYLLIUM											
CADMIUM											
CHROMIUM III											
CHROMIUM VI											
COPPER											
IRON											
LEAD											
MERCURY											
NICKEL											
SELENIUM											
SILVER											
THALLIUM											
ZINC											
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (as $CaCO_3$)											
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN											
ACRYLONITRILE											
BENZENE											
BROMOFORM											
CARBON TETRACHLORIDE											

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

Complete Once for Each Outfall Discharging Effluent to Waters of the State

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
CHLOROBENZENE											
CHLORODIBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLORO-ETHANE											
1,2-DICHLORO-ETHANE											
TRANS-1,2-DICHLOROETHYLENE											
1,1-DICHLORO-ETHYLENE											
1,2-DICHLORO-PROPANE											
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE											
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRA-CHLOROETHANE											
TETRACHLORO-ETHANE											
TOLUENE											
1,1,1-TRICHLORO-ETHANE											
1,1,2-TRICHLORO-ETHANE											
TRICHLORETHYLENE											
VINYL CHLORIDE											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL											
2-CHLOROPHENOL											
2,4-DICHLOROPHENOL											
2,4-DIMETHYLPHENOL											
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL											
2-NITROPHENOL											
4-NITROPHENOL											

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
PENTACHLOROPHENOL											
PHENOL											
2,4,6-TRICHLOROPHENOL											
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE											
BENZIDINE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
3,4-BENZO-FLUORANTHENE											
BENZO(GH) PHERYLENE											
BENZO(K) FLUORANTHENE											
BIS (2-CHLOROTHOXY) METHANE											
BIS (2-CHLOROETHYL) – ETHER											
BIS (2-CHLOROISO-PROPYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE											
2-CHLORONAPH-THALENE											
4-CHLORPHENYL PHENYL ETHER											
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DI-N-OCTYL PHTHALATE											
DIBENZO (A,H) ANTHRACENE											
1,2-DICHLORO-BENZENE											
1,3-DICHLORO-BENZENE											
1,4-DICHLORO-BENZENE											
3,3-DICHLORO-BENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
2,4-DINITRO-TOLUENE											
2,6-DINITRO-TOLUENE											
1,2-DIPHENYL-HYDRAZINE											
FLUORANTHENE											
FLUORENE											
HEXACHLOROBENZENE											
HEXACHLOROBUTADIENE											
HEXACHLOROCYCLO-PENTADIENE											
HEXACHLOROETHANE											
INDENO (1,2,3-CD) PYRENE											
ISOPHORONE											
NAPHTHALENE											
NITROBENZENE											
N-NITROSODI-PROPYLAMINE											
N-NITROSODI-METHYLAMINE											
N-NITROSODI-PHENYLAMINE											
PHENANTHRENE											
PYRENE											
1,2,4-TRICHLOROBENZENE											

Use this space (or a separate sheet) to provide information on other pollutants not specifically listed in this form.

END OF PART D

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA

Refer to the APPLICATION OVERVIEW to determine whether Part E applies to the treatment works.

Publicly owned treatment works, or POTWs, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.

A. POTWs with a design flow rate greater than or equal to 1 million gallons per day

B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)

C. POTWs required by the permitting authority to submit data for these parameters

- At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: 1 chronic 4 acute

Complete the following chart **for the last three whole effluent toxicity tests.** Allow one column per test. Copy this page if more than three tests are being reported.

	Most Recent	2ND Most Recent	3RD Most Recent
A. Test Information			
Test Method Number	EPA 821/R-02/012	EPA 821/R-02/012	EPA 821/R-02/012
Final Report Number	60425283	60396158001	60372894002
Outfall Number	1	1	1
Dates Sample Collected	04/4/23	03/28/22	6/22/21
Date Test Started	04/5/23	03/29/22	6/23/21
Duration	48 Hours	48 Hours	48 Hours
B. Toxicity Test Methods Followed			
Manual Title			
Edition Number and Year of Publication			
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	48	48	48
Grab	1	1	1
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection	☐	☐	☐
After Disinfection	☒ UV Building	☒ UV Building	☒ UV Building
After Dechlorination	☐	☐	☐
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	UV Building	UV Building	UV Building
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	☐	☐	☐
Acute Toxicity	☒ Acute toxicity	☒ Acute toxicity	☒ Acute toxicity
G. Provide the type of test performed			
Static	☒ Pimephales	☒ Pimephales	☒ Pimephales
Static-renewal	☐	☐	☐
Flow-through	☐	☐	☐
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	☐	☐	☐
Receiving Water	☒ 100% Effluent water	☒ 100% Effluent water	☒ 100% Effluent water

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA (continued)

	Most Recent	Second Most Recent	Third Most Recent
I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh Water	x	x	x
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	100%	100%	100%
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	7.5 yes	7.4 yes	7.4 yes
Salinity			
Temperature	25 yes	25 yes	25 yes
Ammonia	< .1 yes	< .1 yes	< .1 yes
Dissolved Oxygen	8.1 yes	8.2 yes	8.4 yes
L. Test Results			
Acute:			
Percent Survival in 100% Effluent	100%	100%	100%
LC_{50}			
95% C.I.			
Control Percent Survival			
Other (Describe)			
Chronic:			
NOEC			
IC_{25}			
Control Percent Survival			
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?	No	No	No
Was reference toxicant test within acceptable bounds?	within 36 hours of collection	within 36 hours of collection	within 36 hours of collection
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (Describe)			

Is the treatment works involved in a toxicity reduction evaluation? ☐ Yes ☑ No

If yes, describe:

If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date Submitted (MM/DD/YYYY)

Summary of Results (See Instructions)

END OF PART E

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

Refer to the APPLICATION OVERVIEW to determine whether Part F applies to the treatment works.

18. GENERAL INFORMATION

18.1 Does the treatment works have, or is it subject to, an approved pretreatment program?

☐ Yes ☑ No

18.2 Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works:

Number of non-categorical SIUs ____

Number of CIUs ____

19. INDUSTRIES CONTRIBUTING MORE THAN 5 PERCENT OF THE ACTUAL FLOW TO THE FACILITY OR OTHER SIGNIFICANT INDUSTRIAL USERS INFORMATION

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
MAILING ADDRESS	CITY	STATE	ZIP CODE

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s):

Raw Material(s):

19.3 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd ☐ Continuous ☐ Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd ☐ Continuous ☐ Intermittent

19.4 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits ☐ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the treatment works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☐ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

20. RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE

20.1 Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe? ☐ Yes ☑ No

20.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ Dedicated Pipe

20.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

21. CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER

21.1 Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?
☐ Yes ☑ No
Provide a list of sites and the requested information for each current and future site.

21.2 Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

21.3 List the hazardous constituents that are received (or are expected to be received). Included data on volume and concentration, if known. (Attach additional sheets if necessary)

21.4 Waste Treatment

a. Is this waste treated (or will it be treated) prior to entering the treatment works?
☐ Yes ☐ No

If Yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?
☐ Continuous ☐ Intermittent

If intermittent, describe the discharge schedule:

END OF PART F

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Oak Grove WWTF	MO- 0130371	001

PART G – COMBINED SEWER SYSTEMS

Refer to the APPLICATION OVERVIEW to determine whether Part G applies to the treatment works.

22. GENERAL INFORMATION

22.1 System Map. Provide a map indicating the following: (May be included with basic application information.)

A. All CSO Discharges.

B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)

C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.

22.2 System Diagram. Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information:

A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.

B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.

C. Locations of In-Line or Off-Line Storage Structures.

D. Locations of Flow-Regulating Devices.

E. Locations of Pump Stations.

22.3 Percent of collection system that is combined sewer 0%

22.4 Population served by combined sewer collection system

22.5 Name of any satellite community with combined sewer collection system

23. CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT

23.1 Description of Outfall

a. Outfall Number

b. Location

c. Distance from Shore (if applicable) _____ ft

d. Depth Below Surface (if applicable) _____ ft

e. Which of the following were monitored during the last year for this CSO?

☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO

☐ CSO Flow Volume ☐ Receiving Water Quality

f. How many storm events were monitored last year?

23.2 CSO Events

a. Give the Number of CSO Events in the Last Year Events ☐ Actual ☐ Approximate

b. Give the Average Duration Per CSO Event

Hours ☐ Actual ☐ Approximate

c. Give the Average Volume Per CSO Event

Million Gallons ☐ Actual ☐ Approximate

d. Give the minimum rainfall that caused a CSO event in the last year _____ inches of rainfall

23.3 Description of Receiving Waters

a. Name of Receiving Water

b. Name of Watershed/River/Stream System

c. U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)

d. Name of State Management/River Basin

e. U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)

23.4 CSO Operations

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)

END OF PART G

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY, Form 780-1805
(Facilities less than or equal to 100,000 gallons per day of domestic waste must use Form B, 780-1512.)

PART A – BASIC APPLICATION INFORMATION

1. Check the appropriate box. **Do not check more than one item.** Operating permits refer to permits issued by the Department of Natural Resources, Water Protection Program. If an Antidegradation Review has not been conducted, submit the application located at the following link, to the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102: dnr.mo.gov/forms/780-1893-f.pdf.

1.1 **Fees Information:**

DOMESTIC OPERATING PERMIT FEES – PRIVATE

Annual operating permit fees are based on flow.

Annual fee/Design flow	Annual fee/Design flow	Annual fee/Design flow
$150.....<5,000 gpd	$1,000.....15,000-24,999 gpd	$4,000.....100,000-249,999 gpd
$300.....5,000-9,999 gpd	$1,500.....25,000-29,999 gpd	$5,000.....≥250,000 gpd
$600.....10,000-14,999 gpd	$3,000.....30,000-99,999 gpd	

New domestic wastewater treatment facilities must submit the annual fee with the original application.

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department on the anniversary date of the original permit. Permit fees must be current for the department to reissue the operating permit. Late fees of two percent per month are charged and added to outstanding annual fees.

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, public sewer district, public water district, or other publicly owned treatment works) Annual fee is based on number of service connections. The table of fees is in 10 CSR 20-6.011 and is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6.pdf. New public sewer system facilities should not submit any fee as the department will invoice the permittee.

OPERATING PERMIT MODIFICATIONS, including transfers, are subject to the following fees:

a. Publicly Owned Treatment Works (POTWs) - $200 each.
b. Non-POTWs – $100 each for a minor modification (name changes, address changes, other non-substantive changes) or a fee equal to 25 percent of the facility's annual operating fee for a major modification.

2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.

2.1 Self-explanatory.

2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

2.3-2.4 Self-explanatory.

3. Owner – Provide the legal name, mailing address, phone number, and email address of the owner.

3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 15 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.

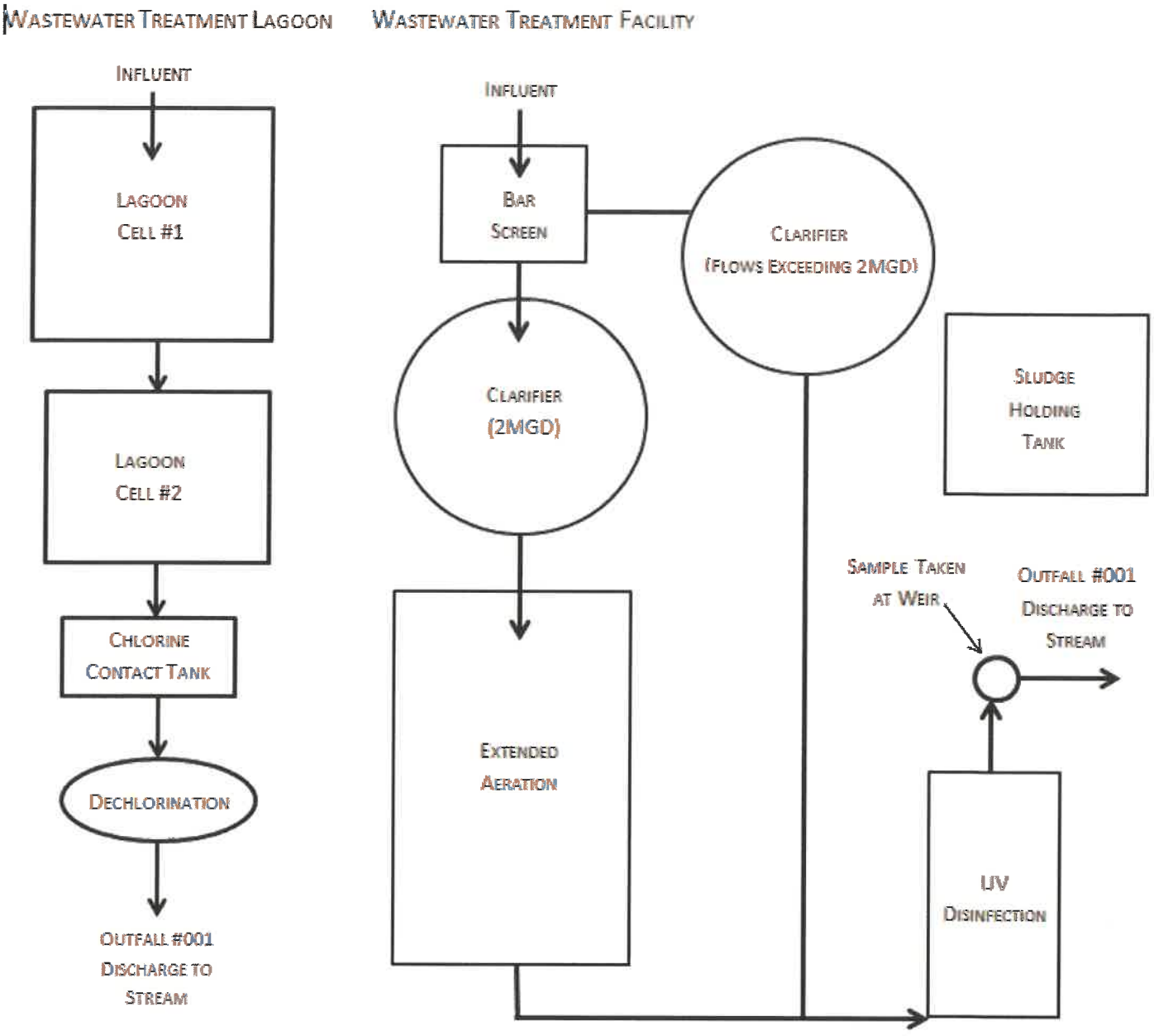
3.2-3.4 Self-explanatory.

4. Continuing Authority – Provide information for the permanent organization which 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/10c20-6.pdf or contact the Department of Natural Resources Water Protection Program (see contact information below).

5. Operator – Provide the name, certificate number, title, mailing address, phone number, and email address of the operator of the facility.

6. Provide the name, title, mailing address, work phone number, and email address 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.

7.1 **Process Flow Diagram Examples**



7.2 A topographic map is available on the web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.

7.3 For Standard Industrial Codes visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the Department of Natural Resources' Water Protection Program.

7.4-7.8 Self – explanatory.

7.9 If wastewater is land-applied submit form I: www.dnr.mo.gov/forms/780-1686-f.pdf.

7.10-8. Self-explanatory

9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.

9.2-9.9 Self – explanatory.

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(continued)

PART B – ADDITIONAL APPLICATION INFORMATION

10.-14. Self-explanatory

PART C – CERTIFICATION

15. Signature – All applications must be signed as follows and the signatures 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.

PART D – EXPANDED EFFLUENT TESTING DATA

16. Self-explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA

17. Self- explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

18. Federal regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.

18.1 Self – explanatory

18.2 A noncategorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
   i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
   ii. Contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   iii. Is designated as an SIU by the control authority.

19.-21.4 Self-explanatory.

PART G – COMBINED SEWER SYSTEMS

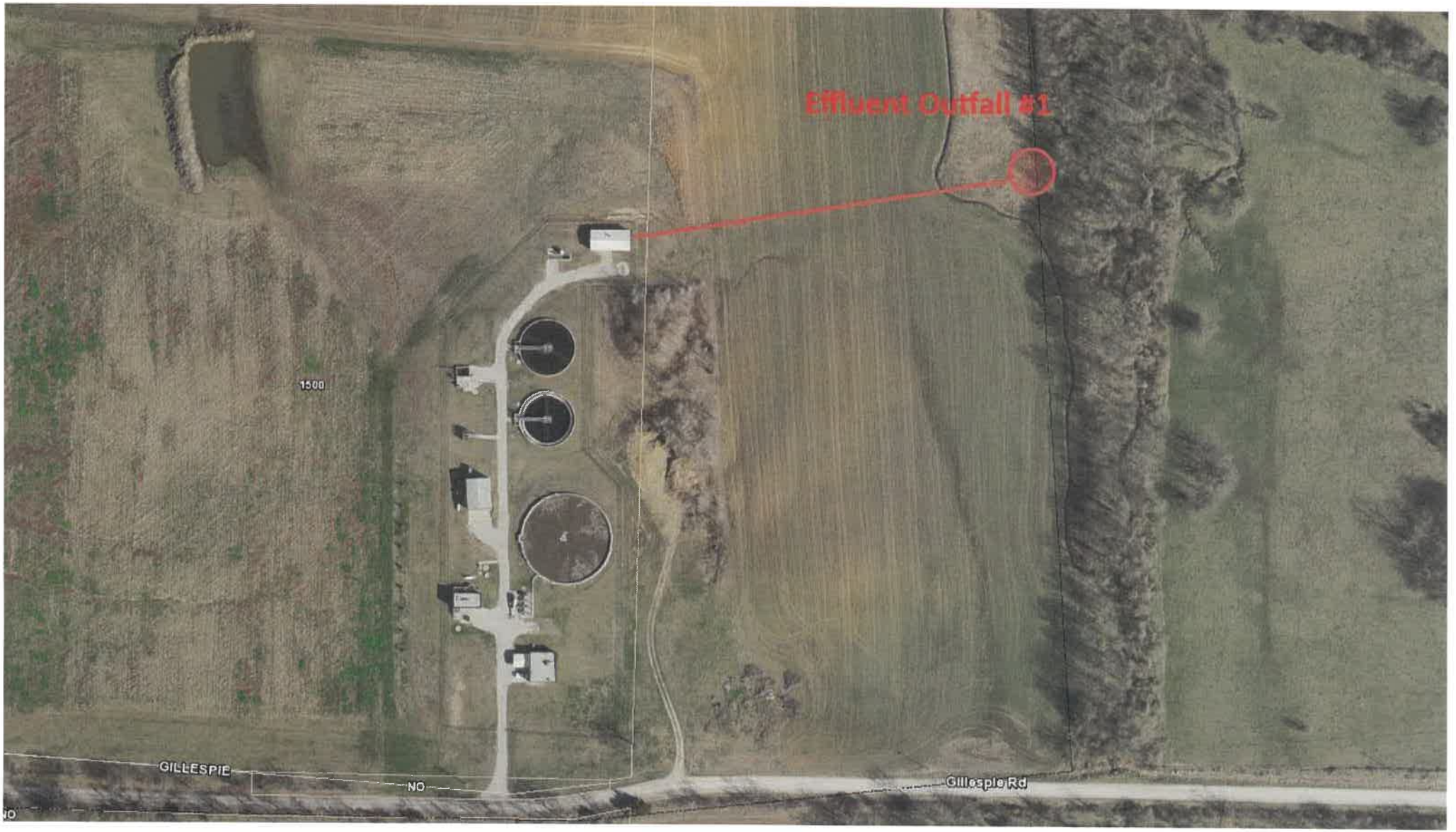
22.-23.4 Self-explanatory.

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

This completed form and any attachments along with the applicable permit fees, should be submitted to:

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102

If there are any questions concerning this form, contact the appropriate Department of Natural Resources regional office or the Water Protection Program at 573-751-6825. A map of the department's regional offices with addresses and telephone numbers is available at www.dnr.mo.gov/regions/ro-map.pdf .


Effluent Outfall #1
1500
GILLESPIE
NO
Gillespie Rd

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 22, 2023

Bryan Leighow
City of Oak Grove
1300 Broadway
Oak Grove, MO 64075

RE: Project: EXPANDED EFFLUENT
Pace Project No.: 60430700

Dear Bryan Leighow:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60430700

Sample: EFFLUENT #1 **Lab ID: 60430700001** Collected: 06/09/23 09:00 Received: 06/09/23 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Aluminum	ND	ug/L	75.0	1	06/16/23 13:51	06/20/23 13:20	7429-90-5	
Antimony	ND	ug/L	15.0	1	06/16/23 13:51	06/20/23 13:20	7440-36-0	
Arsenic	ND	ug/L	10.0	1	06/16/23 13:51	06/20/23 13:20	7440-38-2	
Beryllium	ND	ug/L	1.0	1	06/16/23 13:51	06/20/23 13:20	7440-41-7	
Cadmium	ND	ug/L	5.0	1	06/16/23 13:51	06/20/23 13:20	7440-43-9	
Chromium	ND	ug/L	5.0	1	06/16/23 13:51	06/20/23 13:20	7440-47-3	
Copper	ND	ug/L	10.0	1	06/16/23 13:51	06/20/23 13:20	7440-50-8	
Iron	ND	ug/L	50.0	1	06/16/23 13:51	06/20/23 13:20	7439-89-6	
Lead	ND	ug/L	10.0	1	06/16/23 13:51	06/20/23 13:20	7439-92-1	
Nickel	ND	ug/L	5.0	1	06/16/23 13:51	06/20/23 13:20	7440-02-0	
Selenium	ND	ug/L	15.0	1	06/16/23 13:51	06/20/23 13:20	7782-49-2	
Silver	ND	ug/L	7.0	1	06/16/23 13:51	06/20/23 13:20	7440-22-4	
Thallium	ND	ug/L	20.0	1	06/16/23 13:51	06/20/23 13:20	7440-28-0	
Hardness, Total(SM 2340B)	**176000**	ug/L	500	1	06/16/23 13:51	06/20/23 13:20		
Zinc	**50.7**	ug/L	50.0	1	06/16/23 13:51	06/20/23 13:20	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	06/14/23 14:52	06/15/23 14:12	7439-97-6	
625.1 GCMS Semivolatile Organi	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1 Pace Analytical Services - Kansas City							
Acenaphthene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	83-32-9	
Acenaphthylene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	208-96-8	
Anthracene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	120-12-7	
Benzidine	ND	ug/L	48.5	1	06/13/23 23:28	06/15/23 17:57	92-87-5	
Benzo(a)anthracene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	56-55-3	
Benzo(a)pyrene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	101-55-3	
Butylbenzylphthalate	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.8	1	06/13/23 23:28	06/15/23 17:57	108-60-1	
2-Chloronaphthalene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	91-58-7	
2-Chlorophenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	7005-72-3	
Chrysene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	19.4	1	06/13/23 23:28	06/15/23 17:57	91-94-1	
2,4-Dichlorophenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	120-83-2	
Diethylphthalate	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	84-66-2	

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60430700

Sample: EFFLUENT #1 **Lab ID: 60430700001** Collected: 06/09/23 09:00 Received: 06/09/23 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625.1 GCMS Semivolatile Organi	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1 Pace Analytical Services - Kansas City							
2,4-Dimethylphenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	105-67-9	
Dimethylphthalate	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	131-11-3	
Di-n-butylphthalate	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	24.3	1	06/13/23 23:28	06/15/23 17:57	534-52-1	
2,4-Dinitrophenol	ND	ug/L	48.5	1	06/13/23 23:28	06/15/23 17:57	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	606-20-2	
Di-n-octylphthalate	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	117-81-7	
Fluoranthene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	206-44-0	
Fluorene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	87-68-3	
Hexachlorobenzene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	77-47-4	
Hexachloroethane	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	193-39-5	
Isophorone	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	78-59-1	
Naphthalene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	91-20-3	
Nitrobenzene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	98-95-3	
2-Nitrophenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	88-75-5	
4-Nitrophenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	86-30-6	
Pentachlorophenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	87-86-5	
Phenanthrene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	85-01-8	
Phenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	108-95-2	
Pyrene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	4.9	1	06/13/23 23:28	06/15/23 17:57	88-06-2	
Surrogates								
2,4,6-Tribromophenol (S)	79	%	24-126	1	06/13/23 23:28	06/15/23 17:57	118-79-6	
2-Fluorobiphenyl (S)	66	%	24-110	1	06/13/23 23:28	06/15/23 17:57	321-60-8	
2-Fluorophenol (S)	41	%	20-59	1	06/13/23 23:28	06/15/23 17:57	367-12-4	
Nitrobenzene-d5 (S)	69	%	24-110	1	06/13/23 23:28	06/15/23 17:57	4165-60-0	
Phenol-d6 (S)	28	%	11-42	1	06/13/23 23:28	06/15/23 17:57	13127-88-3	
Terphenyl-d14 (S)	68	%	35-118	1	06/13/23 23:28	06/15/23 17:57	1718-51-0	
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
Acetone	ND	ug/L	10.0	1		06/13/23 16:17	67-64-1	
Benzene	ND	ug/L	1.0	1		06/12/23 11:26	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/12/23 11:26	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/12/23 11:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/12/23 11:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/12/23 11:26	75-25-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60430700

Sample: EFFLUENT #1 **Lab ID: 60430700001** Collected: 06/09/23 09:00 Received: 06/09/23 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624.1 Volatile Organics	Analytical Method: EPA 624.1							
	Pace Analytical Services - Kansas City							
Bromomethane	ND	ug/L	5.0	1		06/12/23 11:26	74-83-9	
2-Butanone (MEK)	**11.8**	ug/L	10.0	1		06/13/23 16:17	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	98-06-6	
Carbon disulfide	ND	ug/L	20.0	1		06/12/23 11:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		06/12/23 11:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/12/23 11:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/12/23 11:26	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/12/23 11:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/12/23 11:26	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		06/12/23 11:26	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/12/23 11:26	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/12/23 11:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/12/23 11:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/12/23 11:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/12/23 11:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/12/23 11:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/12/23 11:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/12/23 11:26	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/12/23 11:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/12/23 11:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/12/23 11:26	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		06/12/23 11:26	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/12/23 11:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/12/23 11:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/12/23 11:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/12/23 11:26	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/12/23 11:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		06/12/23 11:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/12/23 11:26	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/12/23 11:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/12/23 11:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1		06/12/23 11:26	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		06/12/23 11:26	591-78-6	L1
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/12/23 11:26	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/12/23 11:26	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		06/12/23 11:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/12/23 11:26	108-10-1	L1
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/12/23 11:26	1634-04-4	
Naphthalene	ND	ug/L	5.0	1		06/12/23 11:26	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	103-65-1	
Styrene	ND	ug/L	1.0	1		06/12/23 11:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/12/23 11:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/12/23 11:26	79-34-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60430700

Sample: EFFLUENT #1 **Lab ID: 60430700001** Collected: 06/09/23 09:00 Received: 06/09/23 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
Tetrachloroethene	ND	ug/L	1.0	1		06/12/23 11:26	127-18-4	
Toluene	ND	ug/L	1.0	1		06/12/23 11:26	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	1		06/12/23 11:26	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	1		06/12/23 11:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/12/23 11:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/12/23 11:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/12/23 11:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/12/23 11:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	10.0	1		06/12/23 11:26	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/12/23 11:26	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/12/23 11:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/12/23 11:26	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	83	%	80-120	1		06/12/23 11:26	460-00-4	
Toluene-d8 (S)	92	%	80-120	1		06/12/23 11:26	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	1		06/12/23 11:26	2199-69-1	
Preservation pH	**7.0**		1.0	1		06/12/23 11:26		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Kansas City							
Chromium, Trivalent	ND	mg/L	0.010	1		06/21/23 15:42	16065-83-1	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Kansas City							
Phenolics, Total Recoverable	ND	mg/L	0.050	1	06/12/23 09:00	06/12/23 13:38	64743-03-9	
7196 Chromium, Hexavalent	Analytical Method: EPA 7196 Pace Analytical Services - Kansas City							
Chromium, Hexavalent	ND	mg/L	0.010	1		06/10/23 07:44	18540-29-9	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: EXPANDED EFFLUENT
Pace Project No.: 60430700

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace	DC#_Title: ENV-FRM-LENE-0009_Sample	WO#: 60430700
	Revision: 2	Effective Date: 01/12/2022

Client Name: City of Oak Grove

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐ Ziplc

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 4.3 **Corr. Factor** +0.2 **Corrected** 4.5

Date and initials of person examining contents 06-09-2022 JL

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	CR+6
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#:	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	2U69U
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	City of Oak Grove WWTP	Report To:	Bryan Leighow	Attention:	
Address:	1300 Broadway	Copy To:		Company Name:	
	Oak Grove, MO 64075			Address:	
Email:	bleighow@cityofoakgrove.com	Purchase Order #:		Pace Quote:	
Phone:	(816)690-6918 Fax	Project Name:	Expanded Effluent	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	7701, line 4

Regulatory Agency

State / Location: MO

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test: VOC 624	200.7 Metals *see list	245.1 Mercury	625 SVOCs	Phenolics by 420.1	HEXAVALENT chromium	Trivalent Cr Calculation	Residual Chlorine (Y/N)	60430709
1	Effluent #1	WT	C	6-8	8Am	6-9	9Am		1			X														
2	Effluent #2	WT	C	6-8	8Am	6-9	9Am		1	X																
3	Effluent #3	WT	C	6-8	8Am	6-9	9Am		1	X																
4	Effluent #4	WT	C	6-8	8AM	6-9	9Am		1	X																
5	Effluent #5	WT	C	6-8	8AM	6-9	9AM		1	X																
6	Effluent #6	WT	C	6-8	8Am	6-9	9-Am		1	X																
7	Effluent #7	WT	C	6-8	8Am	6-9	9-Am		1	X																
8	Effluent #8	WT	C	6-8	8Am	6-9	9-Am		1	.	X															
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
200.7- Al,Sb,As,Be,Cd,Cr,Cu,Fe,Pb,Ni,Se,Ag,Tl,Zn, Hardness	Bryan Leighow	6-9	10:10		6/9	1010	4.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bryan Leighow

SIGNATURE of SAMPLER: Bryan Leighow

DATE Signed: 6-9-23

Client: City of Oak Grove Profile #

Site: Expanded Effluent Notes log as 1 sample all tests on COC

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT				3						2		1								1		1									
2	WT				2	(Trip Blank) Hold																										
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60430700

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 17, 2023

Bryan Leighow
City of Oak Grove
1300 Broadway
Oak Grove, MO 64075

RE: Project: EXPANDED EFFLUENT
Pace Project No.: 60432331

Dear Bryan Leighow:

Enclosed are the analytical results for sample(s) received by the laboratory on July 03, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60432331

Sample: EFFLUENT #1,#2,#3,#4,#5,#6,#7, **Lab ID: 60432331001** Collected: 07/03/23 09:00 Received: 07/03/23 11:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Aluminum	ND	ug/L	75.0	1	07/10/23 16:07	07/11/23 14:46	7429-90-5	
Antimony	ND	ug/L	15.0	1	07/10/23 16:07	07/11/23 14:46	7440-36-0	
Arsenic	ND	ug/L	10.0	1	07/10/23 16:07	07/11/23 14:46	7440-38-2	
Beryllium	ND	ug/L	1.0	1	07/10/23 16:07	07/11/23 14:46	7440-41-7	
Cadmium	ND	ug/L	5.0	1	07/10/23 16:07	07/11/23 14:46	7440-43-9	
Chromium	ND	ug/L	5.0	1	07/10/23 16:07	07/11/23 14:46	7440-47-3	
Copper	ND	ug/L	10.0	1	07/10/23 16:07	07/11/23 14:46	7440-50-8	
Iron	**67.3**	ug/L	50.0	1	07/10/23 16:07	07/12/23 14:02	7439-89-6	
Lead	ND	ug/L	10.0	1	07/10/23 16:07	07/11/23 14:46	7439-92-1	
Nickel	ND	ug/L	5.0	1	07/10/23 16:07	07/11/23 14:46	7440-02-0	
Selenium	ND	ug/L	15.0	1	07/10/23 16:07	07/11/23 14:46	7782-49-2	
Silver	ND	ug/L	7.0	1	07/10/23 16:07	07/11/23 14:46	7440-22-4	
Thallium	ND	ug/L	20.0	1	07/10/23 16:07	07/11/23 14:46	7440-28-0	
Hardness, Total(SM 2340B)	**158000**	ug/L	500	1	07/10/23 16:07	07/11/23 14:46		
Zinc	ND	ug/L	50.0	1	07/10/23 16:07	07/11/23 14:46	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	07/13/23 10:33	07/14/23 09:48	7439-97-6	
625.1 GCMS Semivolatile Organi	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1 Pace Analytical Services - Kansas City							
Acenaphthene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	83-32-9	
Acenaphthylene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	208-96-8	
Anthracene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	120-12-7	
Benzidine	ND	ug/L	48.5	1	07/07/23 14:17	07/11/23 14:31	92-87-5	
Benzo(a)anthracene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	101-55-3	
Butylbenzylphthalate	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.8	1	07/07/23 14:17	07/11/23 14:31	108-60-1	
2-Chloronaphthalene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	91-58-7	
2-Chlorophenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	7005-72-3	
Chrysene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	19.4	1	07/07/23 14:17	07/11/23 14:31	91-94-1	
2,4-Dichlorophenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	120-83-2	
Diethylphthalate	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	84-66-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60432331

Sample: EFFLUENT #1,#2,#3,#4,#5,#6,#7, **Lab ID: 60432331001** Collected: 07/03/23 09:00 Received: 07/03/23 11:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625.1 GCMS Semivolatile Organi	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1 Pace Analytical Services - Kansas City							
2,4-Dimethylphenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	105-67-9	
Dimethylphthalate	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	131-11-3	
Di-n-butylphthalate	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	24.3	1	07/07/23 14:17	07/11/23 14:31	534-52-1	
2,4-Dinitrophenol	ND	ug/L	48.5	1	07/07/23 14:17	07/11/23 14:31	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	606-20-2	
Di-n-octylphthalate	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	117-81-7	
Fluoranthene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	206-44-0	
Fluorene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	87-68-3	
Hexachlorobenzene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	77-47-4	
Hexachloroethane	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	193-39-5	
Isophorone	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	78-59-1	
Naphthalene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	91-20-3	
Nitrobenzene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	98-95-3	
2-Nitrophenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	88-75-5	
4-Nitrophenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	86-30-6	
Pentachlorophenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	87-86-5	
Phenanthrene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	85-01-8	
Phenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	108-95-2	
Pyrene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	4.9	1	07/07/23 14:17	07/11/23 14:31	88-06-2	
Surrogates								
2,4,6-Tribromophenol (S)	77	%	24-126	1	07/07/23 14:17	07/11/23 14:31	118-79-6	
2-Fluorobiphenyl (S)	67	%	24-110	1	07/07/23 14:17	07/11/23 14:31	321-60-8	
2-Fluorophenol (S)	37	%	20-59	1	07/07/23 14:17	07/11/23 14:31	367-12-4	
Nitrobenzene-d5 (S)	61	%	24-110	1	07/07/23 14:17	07/11/23 14:31	4165-60-0	
Phenol-d6 (S)	24	%	11-42	1	07/07/23 14:17	07/11/23 14:31	13127-88-3	
Terphenyl-d14 (S)	73	%	35-118	1	07/07/23 14:17	07/11/23 14:31	1718-51-0	
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
Acetone	ND	ug/L	10.0	1		07/05/23 12:18	67-64-1	
Benzene	ND	ug/L	1.0	1		07/05/23 12:18	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		07/05/23 12:18	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		07/05/23 12:18	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/05/23 12:18	75-27-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60432331

Sample: EFFLUENT #1,#2,#3,#4,#5,#6,#7, **Lab ID: 60432331001** Collected: 07/03/23 09:00 Received: 07/03/23 11:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
Bromoform	ND	ug/L	1.0	1		07/05/23 12:18	75-25-2	
Bromomethane	ND	ug/L	5.0	1		07/05/23 12:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		07/05/23 12:18	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	98-06-6	
Carbon disulfide	ND	ug/L	20.0	1		07/05/23 12:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		07/05/23 12:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		07/05/23 12:18	108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/05/23 12:18	75-00-3	
Chloroform	ND	ug/L	1.0	1		07/05/23 12:18	67-66-3	
Chloromethane	ND	ug/L	1.0	1		07/05/23 12:18	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		07/05/23 12:18	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		07/05/23 12:18	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		07/05/23 12:18	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		07/05/23 12:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/05/23 12:18	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		07/05/23 12:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		07/05/23 12:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		07/05/23 12:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		07/05/23 12:18	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/05/23 12:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		07/05/23 12:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		07/05/23 12:18	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		07/05/23 12:18	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		07/05/23 12:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/05/23 12:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/05/23 12:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		07/05/23 12:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		07/05/23 12:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		07/05/23 12:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		07/05/23 12:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/05/23 12:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/05/23 12:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1		07/05/23 12:18	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		07/05/23 12:18	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/05/23 12:18	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/05/23 12:18	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		07/05/23 12:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		07/05/23 12:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/05/23 12:18	1634-04-4	
Naphthalene	ND	ug/L	5.0	1		07/05/23 12:18	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	103-65-1	
Styrene	ND	ug/L	1.0	1		07/05/23 12:18	100-42-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60432331

Sample: EFFLUENT #1,#2,#3,#4,#5,#6,#7, **Lab ID: 60432331001** Collected: 07/03/23 09:00 Received: 07/03/23 11:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/05/23 12:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/05/23 12:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		07/05/23 12:18	127-18-4	
Toluene	ND	ug/L	1.0	1		07/05/23 12:18	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	1		07/05/23 12:18	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	1		07/05/23 12:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/05/23 12:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/05/23 12:18	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		07/05/23 12:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		07/05/23 12:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	10.0	1		07/05/23 12:18	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/05/23 12:18	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		07/05/23 12:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		07/05/23 12:18	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	1		07/05/23 12:18	460-00-4	
Toluene-d8 (S)	103	%	80-120	1		07/05/23 12:18	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	1		07/05/23 12:18	2199-69-1	
Preservation pH	**7.0**		1.0	1		07/05/23 12:18		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Kansas City							
Chromium, Trivalent	ND	mg/L	0.010	1		07/17/23 14:10	16065-83-1	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Kansas City							
Phenolics, Total Recoverable	ND	mg/L	0.050	1	07/13/23 09:00	07/13/23 14:49	64743-03-9	M1
7196 Chromium, Hexavalent	Analytical Method: EPA 7196 Pace Analytical Services - Kansas City							
Chromium, Hexavalent	ND	mg/L	0.010	1		07/03/23 13:41	18540-29-9	

REPORT OF LABORATORY ANALYSIS

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample C	
	Revision: 2	Effective Date: 01/12/2022

WO#: 60432331

Client Name: City of Oak Grove

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☑ Ziplock

Thermometer Used: T289 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 16.7 **Corr. Factor** +0.2 **Corrected** 16.9

Date and initials of person examining contents: CT 07.07.2022

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	Cr+6
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	No tests on COC marked
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 67187	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	2V690
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	City of Oak Grove WWTP	Report To:	Bryan Leighow	Attention:	
Address:	1300 Broadway	Copy To:		Company Name:	
	Oak Grove, MO 64075			Address:	
Email:	bleighow@cityofoakgrove.com	Purchase Order #:		Pace Quote:	
Phone:	(816)690-6918 Fax	Project Name:	Expanded Effluent	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	7701, line 4

Regulatory Agency	
State / Location	MO

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	VOC 624	200.7 Metals *see list	245.1 Mercury	625 SVOCs	Phenolics by 420.1	HEXAVALENT chromium	Trivalent Cr Calculation	Residual Chlorine (Y/N)	6043 2331
1	Effluent #1	WT	C	7-2	8Am	7-3	9Am		1			X															
2	Effluent #2	WT	C	7-2	8Am	7-3	9Am		1	X																	
3	Effluent #3	WT	C	7-2	8Am	7-3	9Am		1	X																	
4	Effluent #4	WT	C	7-2	8Am	7-3	9Am		1	X																	
5	Effluent #5	WT	C	7-2	8Am	7-3	9Am		1	X																	
6	Effluent #6	WT	C	7-2	8Am	7-3	9Am		1	X																	
7	Effluent #7	WT	C	7-2	8Am	7-3	9Am		1	X																	
8	Effluent #8	WT	C	7-2	8Am	7-3	9Am		1		X																
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
200.7- Al,Sb,As,Be,Cd,Cr,Cu,Fe,Pb,Ni,Se,Ag,Tl,Zn, Hardness	Bryan Leighow	7-3	11:20		7-3-23	1120	11a9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bryan Leighow

SIGNATURE of SAMPLER: Bryan Leighow DATE Signed: 7-3-23

Client: City of Oak Grove Profile #: log all samples on COC

Site: Notes: log as 1 sample

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT				3						2		1								1		1									
2	WT				2	Trip Blank (1401D)																										
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60432331

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 16, 2023

Bryan Leighow
City of Oak Grove
1300 Broadway
Oak Grove, MO 64075

RE: Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

Dear Bryan Leighow:

Enclosed are the analytical results for sample(s) received by the laboratory on August 02, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

Sample: EFF #1,#2,#3,#4,#5,#6,#7,#8 **Lab ID: 60434451001** Collected: 08/02/23 09:30 Received: 08/02/23 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Aluminum	ND	ug/L	75.0	1	08/04/23 09:51	08/08/23 14:08	7429-90-5	
Antimony	ND	ug/L	15.0	1	08/04/23 09:51	08/08/23 14:08	7440-36-0	
Arsenic	ND	ug/L	10.0	1	08/04/23 09:51	08/08/23 14:08	7440-38-2	
Beryllium	ND	ug/L	1.0	1	08/04/23 09:51	08/08/23 14:08	7440-41-7	
Cadmium	ND	ug/L	5.0	1	08/04/23 09:51	08/08/23 14:08	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/04/23 09:51	08/08/23 14:08	7440-47-3	
Copper	ND	ug/L	10.0	1	08/04/23 09:51	08/08/23 14:08	7440-50-8	
Iron	**105**	ug/L	50.0	1	08/04/23 09:51	08/08/23 14:08	7439-89-6	
Lead	ND	ug/L	10.0	1	08/04/23 09:51	08/08/23 14:08	7439-92-1	
Nickel	ND	ug/L	5.0	1	08/04/23 09:51	08/08/23 14:08	7440-02-0	
Selenium	ND	ug/L	15.0	1	08/04/23 09:51	08/08/23 14:08	7782-49-2	
Silver	ND	ug/L	7.0	1	08/04/23 09:51	08/08/23 14:08	7440-22-4	
Thallium	ND	ug/L	20.0	1	08/04/23 09:51	08/08/23 14:08	7440-28-0	
Hardness, Total(SM 2340B)	**165000**	ug/L	500	1	08/04/23 09:51	08/08/23 14:08		
Zinc	**50.9**	ug/L	50.0	1	08/04/23 09:51	08/08/23 14:08	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	08/04/23 08:56	08/09/23 09:44	7439-97-6	
625.1 GCMS Semivolatile Organi	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1 Pace Analytical Services - Kansas City							
Acenaphthene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	83-32-9	
Acenaphthylene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	208-96-8	
Anthracene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	120-12-7	
Benzidine	ND	ug/L	47.6	1	08/09/23 09:48	08/09/23 15:25	92-87-5	
Benzo(a)anthracene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	56-55-3	
Benzo(a)pyrene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	101-55-3	
Butylbenzylphthalate	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.7	1	08/09/23 09:48	08/09/23 15:25	108-60-1	
2-Chloronaphthalene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	91-58-7	
2-Chlorophenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	7005-72-3	
Chrysene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	19.0	1	08/09/23 09:48	08/09/23 15:25	91-94-1	
2,4-Dichlorophenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	120-83-2	
Diethylphthalate	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	84-66-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

Sample: EFF #1,#2,#3,#4,#5,#6,#7,#8 **Lab ID: 60434451001** Collected: 08/02/23 09:30 Received: 08/02/23 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625.1 GCMS Semivolatile Organi	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1 Pace Analytical Services - Kansas City							
2,4-Dimethylphenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	105-67-9	
Dimethylphthalate	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	131-11-3	
Di-n-butylphthalate	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	23.8	1	08/09/23 09:48	08/09/23 15:25	534-52-1	
2,4-Dinitrophenol	ND	ug/L	47.6	1	08/09/23 09:48	08/09/23 15:25	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	606-20-2	
Di-n-octylphthalate	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	117-81-7	
Fluoranthene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	206-44-0	
Fluorene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	87-68-3	
Hexachlorobenzene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	77-47-4	
Hexachloroethane	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	193-39-5	
Isophorone	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	78-59-1	
Naphthalene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	91-20-3	
Nitrobenzene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	98-95-3	
2-Nitrophenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	88-75-5	
4-Nitrophenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	86-30-6	
Pentachlorophenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	87-86-5	
Phenanthrene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	85-01-8	
Phenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	108-95-2	
Pyrene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	4.8	1	08/09/23 09:48	08/09/23 15:25	88-06-2	
Surrogates								
2,4,6-Tribromophenol (S)	69	%	24-126	1	08/09/23 09:48	08/09/23 15:25	118-79-6	
2-Fluorobiphenyl (S)	56	%	24-110	1	08/09/23 09:48	08/09/23 15:25	321-60-8	
2-Fluorophenol (S)	32	%	20-59	1	08/09/23 09:48	08/09/23 15:25	367-12-4	
Nitrobenzene-d5 (S)	56	%	24-110	1	08/09/23 09:48	08/09/23 15:25	4165-60-0	
Phenol-d6 (S)	22	%	11-42	1	08/09/23 09:48	08/09/23 15:25	13127-88-3	
Terphenyl-d14 (S)	68	%	35-118	1	08/09/23 09:48	08/09/23 15:25	1718-51-0	
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
Benzene	ND	ug/L	1.0	1		08/08/23 14:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		08/08/23 14:36	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/08/23 14:36	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/08/23 14:36	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		08/08/23 14:36	56-23-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

Sample: EFF #1,#2,#3,#4,#5,#6,#7,#8 **Lab ID: 60434451001** Collected: 08/02/23 09:30 Received: 08/02/23 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624.1 Volatile Organics	Analytical Method: EPA 624.1 Pace Analytical Services - Kansas City							
Chlorobenzene	ND	ug/L	1.0	1		08/08/23 14:36	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/08/23 14:36	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/08/23 14:36	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/08/23 14:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		08/08/23 14:36	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/08/23 14:36	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/08/23 14:36	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/08/23 14:36	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/08/23 14:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/08/23 14:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/08/23 14:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/08/23 14:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/08/23 14:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/08/23 14:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/08/23 14:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/08/23 14:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/08/23 14:36	100-41-4	
Methylene Chloride	ND	ug/L	1.0	1		08/08/23 14:36	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/08/23 14:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/08/23 14:36	127-18-4	
Toluene	ND	ug/L	1.0	1		08/08/23 14:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/08/23 14:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/08/23 14:36	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/08/23 14:36	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/08/23 14:36	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		08/08/23 14:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/08/23 14:36	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99	%	80-120	1		08/08/23 14:36	460-00-4	
Toluene-d8 (S)	99	%	80-120	1		08/08/23 14:36	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%	80-120	1		08/08/23 14:36	2199-69-1	
Preservation pH	**7.0**		1.0	1		08/08/23 14:36		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Kansas City							
Chromium, Trivalent	ND	mg/L	0.010	1		08/15/23 16:14	16065-83-1	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Kansas City							
Phenolics, Total Recoverable	ND	mg/L	0.050	1	08/07/23 09:00	08/07/23 12:05	64743-03-9	
7196 Chromium, Hexavalent	Analytical Method: EPA 7196 Pace Analytical Services - Kansas City							
Chromium, Hexavalent	ND	mg/L	0.010	1		08/02/23 17:00	18540-29-9	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

QC Batch: 859185
QC Batch Method: EPA 245.1
Analysis Method: EPA 245.1
Analysis Description: 245.1 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60434451001

METHOD BLANK: 3402407 Matrix: Water
Associated Lab Samples: 60434451001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/09/23 09:30	

LABORATORY CONTROL SAMPLE: 3402408

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3402409 3402410

Parameter	Units	60434592002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.73	5	5	5.5	5.6	96	96	70-130	0	20	H1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

QC Batch: 859196
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60434451001

METHOD BLANK: 3402418 Matrix: Water
Associated Lab Samples: 60434451001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	75.0	08/08/23 12:13	
Antimony	ug/L	ND	15.0	08/08/23 12:13	
Arsenic	ug/L	ND	10.0	08/08/23 12:13	
Beryllium	ug/L	ND	1.0	08/08/23 12:13	
Cadmium	ug/L	ND	5.0	08/08/23 12:13	
Chromium	ug/L	ND	5.0	08/08/23 12:13	
Copper	ug/L	ND	10.0	08/08/23 12:13	
Hardness, Total(SM 2340B)	ug/L	ND	500	08/08/23 12:13	
Iron	ug/L	ND	50.0	08/08/23 12:13	
Lead	ug/L	ND	10.0	08/08/23 12:13	
Nickel	ug/L	ND	5.0	08/08/23 12:13	
Selenium	ug/L	ND	15.0	08/08/23 12:13	
Silver	ug/L	ND	7.0	08/08/23 12:13	
Thallium	ug/L	ND	20.0	08/08/23 12:13	
Zinc	ug/L	ND	50.0	08/08/23 12:13	

LABORATORY CONTROL SAMPLE: 3402419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	10000	10300	103	85-115	
Antimony	ug/L	1000	994	99	85-115	
Arsenic	ug/L	1000	935	94	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Cadmium	ug/L	1000	1020	102	85-115	
Chromium	ug/L	1000	987	99	85-115	
Copper	ug/L	1000	992	99	85-115	
Hardness, Total(SM 2340B)	ug/L	66200	67700	102	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lead	ug/L	1000	1030	103	85-115	
Nickel	ug/L	1000	1020	102	85-115	
Selenium	ug/L	1000	1020	102	85-115	
Silver	ug/L	500	480	96	85-115	
Thallium	ug/L	1000	1000	100	85-115	
Zinc	ug/L	1000	1010	101	85-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3402420 3402421

Parameter	Units	60434463001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	<75.0	10000	10000	10300	10400	103	104	70-130	1	20	
Antimony	ug/L	<15.0	1000	1000	1010	1020	101	102	70-130	1	20	
Arsenic	ug/L	20.0	1000	1000	994	997	97	98	70-130	0	20	
Beryllium	ug/L	<1.0	1000	1000	1030	1020	103	102	70-130	1	20	
Cadmium	ug/L	<5.0	1000	1000	979	984	98	98	70-130	0	20	
Chromium	ug/L	<5.0	1000	1000	981	951	98	95	70-130	3	20	
Copper	ug/L	<10.0	1000	1000	995	982	99	98	70-130	1	20	
Hardness, Total(SM 2340B)	ug/L	746000	66200	66200	793000	806000	72	91	70-130	2	20	
Iron	ug/L	1960	10000	10000	12400	12400	104	105	70-130	1	20	
Lead	ug/L	<10.0	1000	1000	976	982	97	98	70-130	1	20	
Nickel	ug/L	<5.0	1000	1000	999	971	99	97	70-130	3	20	
Selenium	ug/L	<15.0	1000	1000	1020	1020	101	102	70-130	0	20	
Silver	ug/L	<7.0	500	500	491	484	98	97	70-130	1	20	
Thallium	ug/L	<20.0	1000	1000	906	910	91	91	70-130	0	20	
Zinc	ug/L	<50.0	1000	1000	994	972	99	97	70-130	2	20	

MATRIX SPIKE SAMPLE: 3402422

Parameter	Units	60434451001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	10000	10500	105	70-130	
Antimony	ug/L	ND	1000	1000	100	70-130	
Arsenic	ug/L	ND	1000	955	95	70-130	
Beryllium	ug/L	ND	1000	1030	103	70-130	
Cadmium	ug/L	ND	1000	1010	101	70-130	
Chromium	ug/L	ND	1000	1010	101	70-130	
Copper	ug/L	ND	1000	990	99	70-130	
Hardness, Total(SM 2340B)	ug/L	165000	66200	232000	101	70-130	
Iron	ug/L	105	10000	10900	108	70-130	
Lead	ug/L	ND	1000	1010	101	70-130	
Nickel	ug/L	ND	1000	1040	104	70-130	
Selenium	ug/L	ND	1000	1000	100	70-130	
Silver	ug/L	ND	500	485	97	70-130	
Thallium	ug/L	ND	1000	817	82	70-130	
Zinc	ug/L	50.9	1000	1080	103	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

QC Batch: 859695
QC Batch Method: EPA 624.1
Analysis Method: EPA 624.1
Analysis Description: 624.1 MSV
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60434451001

METHOD BLANK: 3404214 Matrix: Water
Associated Lab Samples: 60434451001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	08/08/23 08:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/08/23 08:46	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/08/23 08:46	
1,1-Dichloroethane	ug/L	ND	1.0	08/08/23 08:46	
1,1-Dichloroethene	ug/L	ND	1.0	08/08/23 08:46	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/08/23 08:46	
1,2-Dichloroethane	ug/L	ND	1.0	08/08/23 08:46	
1,2-Dichloropropane	ug/L	ND	1.0	08/08/23 08:46	
1,3-Dichlorobenzene	ug/L	ND	1.0	08/08/23 08:46	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/08/23 08:46	
Benzene	ug/L	ND	1.0	08/08/23 08:46	
Bromodichloromethane	ug/L	ND	1.0	08/08/23 08:46	
Bromoform	ug/L	ND	1.0	08/08/23 08:46	
Bromomethane	ug/L	ND	5.0	08/08/23 08:46	
Carbon tetrachloride	ug/L	ND	1.0	08/08/23 08:46	
Chlorobenzene	ug/L	ND	1.0	08/08/23 08:46	
Chloroethane	ug/L	ND	1.0	08/08/23 08:46	
Chloroform	ug/L	ND	1.0	08/08/23 08:46	
Chloromethane	ug/L	ND	1.0	08/08/23 08:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/08/23 08:46	
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/08/23 08:46	
Dibromochloromethane	ug/L	ND	1.0	08/08/23 08:46	
Ethylbenzene	ug/L	ND	1.0	08/08/23 08:46	
Methylene Chloride	ug/L	ND	1.0	08/08/23 08:46	
Tetrachloroethene	ug/L	ND	1.0	08/08/23 08:46	
Toluene	ug/L	ND	1.0	08/08/23 08:46	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/08/23 08:46	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/08/23 08:46	
Trichloroethene	ug/L	ND	1.0	08/08/23 08:46	
Trichlorofluoromethane	ug/L	ND	1.0	08/08/23 08:46	
Vinyl chloride	ug/L	ND	1.0	08/08/23 08:46	
Xylene (Total)	ug/L	ND	3.0	08/08/23 08:46	
1,2-Dichlorobenzene-d4 (S)	%	100	80-120	08/08/23 08:46	
4-Bromofluorobenzene (S)	%	100	80-120	08/08/23 08:46	
Toluene-d8 (S)	%	99	80-120	08/08/23 08:46	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

LABORATORY CONTROL SAMPLE: 3404215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.1	95	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	19.6	98	60-140	
1,1,2-Trichloroethane	ug/L	20	19.1	95	70-130	
1,1-Dichloroethane	ug/L	20	19.0	95	70-130	
1,1-Dichloroethene	ug/L	20	19.3	97	50-150	
1,2-Dichlorobenzene	ug/L	20	19.2	96	65-135	
1,2-Dichloroethane	ug/L	20	18.9	94	70-130	
1,2-Dichloropropane	ug/L	20	19.0	95	35-165	
1,3-Dichlorobenzene	ug/L	20	19.3	97	71-114	
1,4-Dichlorobenzene	ug/L	20	19.0	95	65-135	
Benzene	ug/L	20	19.3	97	65-135	
Bromodichloromethane	ug/L	20	19.2	96	65-135	
Bromoform	ug/L	20	19.7	99	70-130	
Bromomethane	ug/L	20	19.2	96	15-185	
Carbon tetrachloride	ug/L	20	20.1	101	70-130	
Chlorobenzene	ug/L	20	19.3	96	65-135	
Chloroethane	ug/L	20	19.6	98	40-160	
Chloroform	ug/L	20	18.9	95	70-135	
Chloromethane	ug/L	20	20.2	101	10-205	
cis-1,2-Dichloroethene	ug/L	20	18.8	94	78-113	
cis-1,3-Dichloropropene	ug/L	20	19.4	97	25-175	
Dibromochloromethane	ug/L	20	19.0	95	70-135	
Ethylbenzene	ug/L	20	19.1	95	60-140	
Methylene Chloride	ug/L	20	18.5	92	60-140	
Tetrachloroethene	ug/L	20	18.9	94	70-130	
Toluene	ug/L	20	18.8	94	70-130	
trans-1,2-Dichloroethene	ug/L	20	19.1	96	70-130	
trans-1,3-Dichloropropene	ug/L	20	19.3	97	50-150	
Trichloroethene	ug/L	20	18.8	94	65-135	
Trichlorofluoromethane	ug/L	20	19.7	99	50-150	
Vinyl chloride	ug/L	20	20.5	103	5-195	
Xylene (Total)	ug/L	60	56.6	94	73-112	
1,2-Dichlorobenzene-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

QC Batch: 859714
QC Batch Method: EPA 625.1
Analysis Method: EPA 625.1
Analysis Description: 6251 MSS
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60434451001

METHOD BLANK: 3404248 Matrix: Water
Associated Lab Samples: 60434451001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	08/09/23 14:20	
2,4,6-Trichlorophenol	ug/L	ND	5.0	08/09/23 14:20	
2,4-Dichlorophenol	ug/L	ND	5.0	08/09/23 14:20	
2,4-Dimethylphenol	ug/L	ND	5.0	08/09/23 14:20	
2,4-Dinitrophenol	ug/L	ND	50.0	08/09/23 14:20	
2,4-Dinitrotoluene	ug/L	ND	5.0	08/09/23 14:20	
2,6-Dinitrotoluene	ug/L	ND	5.0	08/09/23 14:20	
2-Chloronaphthalene	ug/L	ND	5.0	08/09/23 14:20	
2-Chlorophenol	ug/L	ND	5.0	08/09/23 14:20	
2-Nitrophenol	ug/L	ND	5.0	08/09/23 14:20	
3,3'-Dichlorobenzidine	ug/L	ND	20.0	08/09/23 14:20	
4,6-Dinitro-2-methylphenol	ug/L	ND	25.0	08/09/23 14:20	
4-Bromophenylphenyl ether	ug/L	ND	5.0	08/09/23 14:20	
4-Chloro-3-methylphenol	ug/L	ND	5.0	08/09/23 14:20	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	08/09/23 14:20	
4-Nitrophenol	ug/L	ND	5.0	08/09/23 14:20	
Acenaphthene	ug/L	ND	5.0	08/09/23 14:20	
Acenaphthylene	ug/L	ND	5.0	08/09/23 14:20	
Anthracene	ug/L	ND	5.0	08/09/23 14:20	
Benzidine	ug/L	ND	50.0	08/09/23 14:20	
Benzo(a)anthracene	ug/L	ND	5.0	08/09/23 14:20	
Benzo(a)pyrene	ug/L	ND	5.0	08/09/23 14:20	
Benzo(b)fluoranthene	ug/L	ND	5.0	08/09/23 14:20	
Benzo(g,h,i)perylene	ug/L	ND	5.0	08/09/23 14:20	
Benzo(k)fluoranthene	ug/L	ND	5.0	08/09/23 14:20	
bis(2-Chloroethoxy)methane	ug/L	ND	5.0	08/09/23 14:20	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	08/09/23 14:20	
bis(2-Chloroisopropyl) ether	ug/L	ND	6.0	08/09/23 14:20	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	08/09/23 14:20	
Butylbenzylphthalate	ug/L	ND	5.0	08/09/23 14:20	
Chrysene	ug/L	ND	5.0	08/09/23 14:20	
Di-n-butylphthalate	ug/L	ND	5.0	08/09/23 14:20	
Di-n-octylphthalate	ug/L	ND	5.0	08/09/23 14:20	
Dibenz(a,h)anthracene	ug/L	ND	5.0	08/09/23 14:20	
Diethylphthalate	ug/L	ND	5.0	08/09/23 14:20	
Dimethylphthalate	ug/L	ND	5.0	08/09/23 14:20	
Fluoranthene	ug/L	ND	5.0	08/09/23 14:20	
Fluorene	ug/L	ND	5.0	08/09/23 14:20	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	08/09/23 14:20	
Hexachlorobenzene	ug/L	ND	5.0	08/09/23 14:20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

METHOD BLANK: 3404248 Matrix: Water
Associated Lab Samples: 60434451001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachlorocyclopentadiene	ug/L	ND	5.0	08/09/23 14:20	
Hexachloroethane	ug/L	ND	5.0	08/09/23 14:20	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	08/09/23 14:20	
Isophorone	ug/L	ND	5.0	08/09/23 14:20	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	08/09/23 14:20	
N-Nitrosodimethylamine	ug/L	ND	5.0	08/09/23 14:20	
N-Nitrosodiphenylamine	ug/L	ND	5.0	08/09/23 14:20	
Naphthalene	ug/L	ND	5.0	08/09/23 14:20	
Nitrobenzene	ug/L	ND	5.0	08/09/23 14:20	
Pentachlorophenol	ug/L	ND	5.0	08/09/23 14:20	
Phenanthrene	ug/L	ND	5.0	08/09/23 14:20	
Phenol	ug/L	ND	5.0	08/09/23 14:20	
Pyrene	ug/L	ND	5.0	08/09/23 14:20	
2,4,6-Tribromophenol (S)	%	71	24-126	08/09/23 14:20	
2-Fluorobiphenyl (S)	%	55	24-110	08/09/23 14:20	
2-Fluorophenol (S)	%	38	20-59	08/09/23 14:20	
Nitrobenzene-d5 (S)	%	62	24-110	08/09/23 14:20	
Phenol-d6 (S)	%	24	11-42	08/09/23 14:20	
Terphenyl-d14 (S)	%	70	35-118	08/09/23 14:20	

LABORATORY CONTROL SAMPLE: 3404249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	28.1	56	44-145	
2,4,6-Trichlorophenol	ug/L	50	30.9	62	37-144	
2,4-Dichlorophenol	ug/L	50	31.3	63	39-135	
2,4-Dimethylphenol	ug/L	50	30.0	60	32-120	
2,4-Dinitrophenol	ug/L	50	22.3J	45	10-191	
2,4-Dinitrotoluene	ug/L	50	33.0	66	39-139	
2,6-Dinitrotoluene	ug/L	50	34.2	68	50-158	
2-Chloronaphthalene	ug/L	50	29.8	60	60-120	
2-Chlorophenol	ug/L	50	28.1	56	23-134	
2-Nitrophenol	ug/L	50	33.0	66	29-182	
3,3'-Dichlorobenzidine	ug/L	50	45.9	92	10-200	
4,6-Dinitro-2-methylphenol	ug/L	50	32.7	65	10-181	
4-Bromophenylphenyl ether	ug/L	50	32.2	64	53-127	
4-Chloro-3-methylphenol	ug/L	50	31.4	63	22-147	
4-Chlorophenylphenyl ether	ug/L	50	32.0	64	25-158	
4-Nitrophenol	ug/L	50	12.8	26	10-132	
Acenaphthene	ug/L	50	30.5	61	47-145	
Acenaphthylene	ug/L	50	29.9	60	33-145	
Anthracene	ug/L	50	31.5	63	27-133	
Benzidine	ug/L	50	9.6J	19	5-190	
Benzo(a)anthracene	ug/L	50	33.8	68	33-143	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

LABORATORY CONTROL SAMPLE: 3404249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	ug/L	50	33.3	67	17-163	
Benzo(b)fluoranthene	ug/L	50	35.4	71	24-159	
Benzo(g,h,i)perylene	ug/L	50	33.4	67	10-195	
Benzo(k)fluoranthene	ug/L	50	32.3	65	17-163	
bis(2-Chloroethoxy)methane	ug/L	50	28.9	58	33-184	
bis(2-Chloroethyl) ether	ug/L	50	28.4	57	12-158	
bis(2-Chloroisopropyl) ether	ug/L	50	28.5	57	36-166	
bis(2-Ethylhexyl)phthalate	ug/L	50	34.4	69	10-158	
Butylbenzylphthalate	ug/L	50	36.8	74	10-152	
Chrysene	ug/L	50	32.8	66	17-168	
Di-n-butylphthalate	ug/L	50	31.7	63	10-120	
Di-n-octylphthalate	ug/L	50	34.8	70	10-146	
Dibenz(a,h)anthracene	ug/L	50	33.4	67	10-200	
Diethylphthalate	ug/L	50	32.9	66	10-120	
Dimethylphthalate	ug/L	50	32.6	65	10-120	
Fluoranthene	ug/L	50	31.7	63	26-137	
Fluorene	ug/L	50	31.5	63	59-121	
Hexachloro-1,3-butadiene	ug/L	50	27.8	56	24-120	
Hexachlorobenzene	ug/L	50	32.4	65	10-152	
Hexachlorocyclopentadiene	ug/L	50	12.1	24	19-120	
Hexachloroethane	ug/L	50	25.3	51	40-120	
Indeno(1,2,3-cd)pyrene	ug/L	50	32.9	66	10-171	
Isophorone	ug/L	50	29.2	58	21-196	
N-Nitroso-di-n-propylamine	ug/L	50	28.4	57	10-198	
N-Nitrosodimethylamine	ug/L	50	16.5	33	20-120	
N-Nitrosodiphenylamine	ug/L	50	32.0	64	64-120	
Naphthalene	ug/L	50	29.0	58	21-133	
Nitrobenzene	ug/L	50	29.4	59	35-180	
Pentachlorophenol	ug/L	50	27.4	55	14-176	
Phenanthrene	ug/L	50	31.5	63	54-120	
Phenol	ug/L	50	12.4	25	10-120	
Pyrene	ug/L	50	35.5	71	52-120	
2,4,6-Tribromophenol (S)	%			69	24-126	
2-Fluorobiphenyl (S)	%			55	24-110	
2-Fluorophenol (S)	%			37	20-59	
Nitrobenzene-d5 (S)	%			59	24-110	
Phenol-d6 (S)	%			24	11-42	
Terphenyl-d14 (S)	%			69	35-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3404250 3404251

Parameter	Units	60434724001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/L	ND	47.6	47.6	28.8	29.5	60	62	44-145	2	34	
2,4,6-Trichlorophenol	ug/L	ND	47.6	47.6	30.5	31.8	64	67	37-144	4	35	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3404250 3404251

Parameter	Units	60434724001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dichlorophenol	ug/L	ND	47.6	47.6	30.4	30.8	64	65	39-135	1	34	
2,4-Dimethylphenol	ug/L	ND	47.6	47.6	22.7	23.1	48	49	32-120	2	32	
2,4-Dinitrophenol	ug/L	ND	47.6	47.6	26.4J	26.3J	55	55	10-191		18	
2,4-Dinitrotoluene	ug/L	ND	47.6	47.6	31.9	32.7	67	69	39-139	2	32	
2,6-Dinitrotoluene	ug/L	ND	47.6	47.6	33.2	33.6	70	71	50-158	1	34	
2-Chloronaphthalene	ug/L	ND	47.6	47.6	28.3	30.0	59	63	60-120	6	32	M1
2-Chlorophenol	ug/L	ND	47.6	47.6	27.4	27.9	56	56	23-134	2	30	
2-Nitrophenol	ug/L	ND	47.6	47.6	33.9	34.4	68	69	29-182	1	34	
3,3'-Dichlorobenzidine	ug/L	ND	47.6	47.6	26.9	25.8	56	54	10-200	4	53	
4,6-Dinitro-2-methylphenol	ug/L	ND	47.6	47.6	32.8	33.0	69	69	10-181	1	18	
4-Bromophenylphenyl ether	ug/L	ND	47.6	47.6	30.9	31.8	65	67	53-127	3	34	
4-Chloro-3-methylphenol	ug/L	ND	47.6	47.6	31.5	31.5	66	66	22-147	0	32	
4-Chlorophenylphenyl ether	ug/L	ND	47.6	47.6	30.6	32.2	64	68	25-158	5	31	
4-Nitrophenol	ug/L	ND	47.6	47.6	13.4	13.5	27	27	10-132	1	35	
Acenaphthene	ug/L	ND	47.6	47.6	28.4	29.4	60	62	47-145	4	30	
Acenaphthylene	ug/L	ND	47.6	47.6	21.8	21.2	46	44	33-145	3	36	
Anthracene	ug/L	ND	47.6	47.6	29.2	29.4	61	62	27-133	1	33	
Benzidine	ug/L	ND	47.6	47.6	ND	ND	0	0	5-190		50	M1
Benzo(a)anthracene	ug/L	ND	47.6	47.6	34.1	33.3	72	70	33-143	2	31	
Benzo(a)pyrene	ug/L	ND	47.6	47.6	30.7	31.0	65	65	17-163	1	32	
Benzo(b)fluoranthene	ug/L	ND	47.6	47.6	33.7	33.7	71	71	24-159	0	35	
Benzo(g,h,i)perylene	ug/L	ND	47.6	47.6	32.3	32.9	68	69	10-195	2	41	
Benzo(k)fluoranthene	ug/L	ND	47.6	47.6	31.6	31.9	66	67	17-163	1	36	
bis(2-Chloroethoxy)methane	ug/L	ND	47.6	47.6	27.6	28.1	58	59	33-184	2	31	
bis(2-Chloroethyl) ether	ug/L	ND	47.6	47.6	27.2	27.2	57	57	12-158	0	30	
bis(2-Chloroisopropyl) ether	ug/L	ND	47.6	47.6	26.5	26.4	56	55	36-166	0	31	
bis(2-Ethylhexyl)phthalate	ug/L	ND	47.6	47.6	35.2	34.7	74	73	10-158	1	26	
Butylbenzylphthalate	ug/L	ND	47.6	47.6	37.7	37.3	79	78	10-152	1	27	
Chrysene	ug/L	ND	47.6	47.6	33.3	33.1	70	70	17-168	0	32	
Di-n-butylphthalate	ug/L	ND	47.6	47.6	30.7	31.0	64	65	10-120	1	33	
Di-n-octylphthalate	ug/L	ND	47.6	47.6	34.5	34.5	72	72	10-146	0	31	
Dibenz(a,h)anthracene	ug/L	ND	47.6	47.6	32.9	33.2	69	70	10-200	1	39	
Diethylphthalate	ug/L	ND	47.6	47.6	32.3	32.6	68	68	10-120	1	31	
Dimethylphthalate	ug/L	ND	47.6	47.6	31.6	32.6	66	68	10-120	3	31	
Fluoranthene	ug/L	ND	47.6	47.6	30.5	30.9	64	65	26-137	1	34	
Fluorene	ug/L	ND	47.6	47.6	30.2	31.3	63	66	59-121	4	34	
Hexachloro-1,3-butadiene	ug/L	ND	47.6	47.6	30.1	30.2	63	63	24-120	0	36	
Hexachlorobenzene	ug/L	ND	47.6	47.6	31.3	31.2	66	66	10-152	0	33	
Hexachlorocyclopentadiene	ug/L	ND	47.6	47.6	18.3	19.5	38	41	19-120	7	53	
Hexachloroethane	ug/L	ND	47.6	47.6	26.7	26.5	56	56	40-120	1	36	
Indeno(1,2,3-cd)pyrene	ug/L	ND	47.6	47.6	32.4	32.7	68	69	10-171	1	39	
Isophorone	ug/L	ND	47.6	47.6	27.6	28.0	58	59	21-196	1	30	
N-Nitroso-di-n-propylamine	ug/L	ND	47.6	47.6	26.3	26.1	55	55	10-198	1	32	
N-Nitrosodimethylamine	ug/L	ND	47.6	47.6	15.6	15.7	33	33	20-120	1	50	
N-Nitrosodiphenylamine	ug/L	ND	47.6	47.6	9.0	7.7	19	16	64-120	16	61	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: EXPANDED EFFLUENT
Pace Project No.: 60434451

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3404250 3404251

Parameter	Units	60434724001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Naphthalene	ug/L	ND	47.6	47.6	28.8	29.7	60	62	21-133	3	30	
Nitrobenzene	ug/L	ND	47.6	47.6	28.7	29.3	60	62	35-180	2	32	
Pentachlorophenol	ug/L	ND	47.6	47.6	26.5	26.0	56	55	14-176	2	15	
Phenanthrene	ug/L	ND	47.6	47.6	30.4	30.9	64	65	54-120	2	31	
Phenol	ug/L	21.8	47.6	47.6	32.0	31.4	22	20	10-120	2	32	
Pyrene	ug/L	ND	47.6	47.6	35.0	34.0	74	71	52-120	3	32	
2,4,6-Tribromophenol (S)	%						71	71	24-126			
2-Fluorobiphenyl (S)	%						58	59	24-110			
2-Fluorophenol (S)	%						34	34	20-59			
Nitrobenzene-d5 (S)	%						59	61	24-110			
Phenol-d6 (S)	%						21	21	11-42			
Terphenyl-d14 (S)	%						72	70	35-118			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

WO#: 60434451

60434451

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Cor		
	Revision: 2	Effective Date: 01/12/2022	Issued By: LenExa

Client Name: City of Oak Grove

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☑ Tpic

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 5.1 Corr. Factor +0.2 Corrected 5.3

Date and initials of person examining contents: 08.02.2023 JL

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	CR+6
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 67187	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	2 VG9U
Headspace in VOA vials (>6mm):	☑Yes ☐No ☐N/A	3 of 3 VG9U have headspace
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	City of Oak Grove WWTP	Report To:	Bryan Leighow	Attention:	
Address:	1300 Broadway	Copy To:		Company Name:	
	Oak Grove, MO 64075			Address:	
Email:	bleighow@cityofoakgrove.com	Purchase Order #:		Pace Quote:	
Phone:	(816)690-6918 Fax	Project Name:	Expanded Effluent	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	7701, line 4

Regulatory Agency:

State / Location: MO

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N)	Analyses Test	Residual Chlorine (Y/N)
1	Eff #1	WT	C	8-1	9AM	8-2	9:30		1			X								
2	Eff #2	WT	C	8-1	9AM	8-2	9:30		1	X										
3	Eff #3	WT	C	8-1	9AM	8-2	9:30		1	X										
4	Eff #4	WT	C	8-1	9AM	8-2	9:30		1	X										
5	Eff #5	WT	C	8-1	9AM	8-2	9:30		1	X										
6	Eff #6	WT	C	8-1	9AM	8-2	9:30		1	X										
7	Eff #7	WT	C	8-1	9AM	8-2	9:30		1	X										
8	Eff #8	WT	C	8-1	9AM	8-2	9:30		1		X									
9																				
10																				
11																				
12																				

Analyses Test: VOC 624; 200.7 Metals *see list; 245.1 Mercury; 625 SVOCs; Phenolics by 420.1; HEXAVALENT chromium; Trivalent Cr Calculation

6043445

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
200.7- Al,Sb,As,Be,Cd,Cr,Cu,Fe,Pb,Ni,Se,Ag,Tl,Zn, Hardness		8-2-23	11:25		8/2	1130	5.3	Y	Y	C

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bryan Leighow

SIGNATURE of SAMPLER: Bryan Leighow

DATE Signed: 8-2-23

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Client: City of Oak Grove Profile #

Site: Expanded Effluent Notes logas 1 sample log all tests on COC

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT				2						2		1								1											
2	WT				2		Trip Blank						Hold										1									
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60434451

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FINANCIAL QUESTIONNAIRE

NOTE ► **FINANCIAL INFORMATION THAT IS NOT PROVIDED THROUGH THIS FORM WILL BE OBTAINED BY THE DEPARTMENT FROM READILY AVAILABLE SOURCES.**

1. GENERAL INFORMATION

FACILITY NAME Oak Grove WWTF	PERMIT NUMBER #MO- 0130371
CITY Oak Grove, MO	COUNTY Jackson
☑ PERMIT RENEWAL/MODIFICATION ☐ STATE REVOLVING FUND APPLICATION	SRF PROJECT NUMBER (IF APPLICABLE) C295_____

2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES)

2.1 Number of connections to the facility: Residential 3139 Commercial 208 Industrial _____

2.2 Current sewer user rate: *Based on a 5,000 gallon per month usage* $ 48.13	The sewer user rate is (check one): ☐ Rate Capacity (set rate) ☑ Pay as You Go
2.3 Current operating costs for the facility (excludes depreciation):	$2,298,721
2.4 Bond Rating (if applicable):	A2 (Moody's)
2.5 Bonding Capacity: *General obligation bond capacity allowed by constitution: cities=up to 20% of taxable tangible property; sewer districts=up to 5% of taxable tangible property*	$28,578,279
2.6 Current outstanding debt relating to wastewater collection and treatment: *Debt information is typically available from your community's annual financial statements*	$6,572,320
2.7 Amount of current user rate per household per month used toward payments on wastewater debt:	$17.67
2.8 Net direct debt: *Net direct debt is the total amount of outstanding general obligation debt, including notes and short-term financing.*	$20,173,858
2.9 Overlapping debt: *Overlapping debt is the financial obligations of one political jurisdiction that also falls partly on a nearby jurisdiction.*	N/A
2.10 Overall net debt: *Overall net debt is defined as debt repaid by property taxes within a utility/municipality's service area. It excludes debt that is repaid by special user fees (e.g. revenue bonds). Overall net debt = Net direct debt + Overlapping debt. Debt information is typically available from your community's annual financial statements*	N/A

2.11 Attach any relevant financial statements.

3. FINANCIAL INFORMATION SPECIFIC TO MUNICIPALITIES

3.1 Municipality's Full Market Property Value (FMPV): *FMPV data is typically available through your community or state assessor's office*	
3.2 Municipality's property tax revenues: *Property tax revenues are typically available from your community's annual financial statements*	$1,004,733
3.3 Municipality's property tax collection rate: *To determine the collection rate, you will need to divide property tax revenues by the property taxes levied. To calculate property taxes levied, multiply the assessed value of real property within your community/service area by the property tax rate. This information is typically available through your community or state assessor's office. Property tax revenues are typically available in your community's annual financial statements.*	91.95%

4. FINANCIAL INFORMATION SPECIFIC TO SEWER DISTRICTS

4.1 Total connections to the sewer district: Residential 3139 Commercial 208 Industrial _____

4.2 When facilities require upgrades, how are the costs divided? Will the homes connected to the upgraded facility bear the costs? Will the costs be divided across the sewer district?

When facility upgrades are required, the costs are paid for from the sewer fund which has a bare usage rate along with an inflow and infiltration rate that are the same for all users. New connections are charged an impact fee based on their equivalent impact units.

5. OTHER CONSIDERATIONS (ALL FACILITIES)

5.1 Provide a list of major infrastructure or other investments in environmental projects. Include project timing and costs and indicate any possible overlap or complications (attach sheets as necessary):

$ 415,900 New Vactor and jet truck
$ 112,000 N. & S. water booster station generators
$ 47,000 SCADA city wide
$ 3.5 Million WWTF- motor replacement, flow meters, grit removal, non-pot replacement, UV addition, clarifier launder covers, aeration basin repair, Jim Owings pump station new trunk line & force main, Main Pump Station VFDs

5.2 Provide a list of any other relevant local community economic conditions that may impact the ability to afford new permit requirements or the proposed SRF project. (See Community Supplemental Survey on the following page):

Oak Grove has seen a steady increase of population and business growth over the last several ears which helps contribute to the ability to afford new permit requirements.

6. CERTIFICATION

FINANCIAL CONTACT	OFFICIAL TITLE
Rebecca Smith	Finance Manager
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
rsmith@cityofoakgrove.com	(816) 690-3773

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 this 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 or imprisonment.

OWNER OR AUTHORIZED REPRESENTATIVE	OFFICIAL TITLE
Matt Randall	City Administrator
SIGNATURE	DATE SIGNED
Matthew Randall	07/18/2023

For additional guidance, see http://usmayors.org/urbanwater/media/2013/0529-report-WaterAffordability.pdf.

For more information regarding your Missouri State Operating Permit, contact the department's Water Protection Program at 573-751-1300, to speak with a permit writer in the domestic wastewater unit.

For more information regarding your State Revolving Fund Application, contact the department's Water Protection Program at 573-751-1300, to speak with a project coordinator in the Financial Assistance Center.

This completed form and any attachments should be submitted to one of the following:

For Submittal of Permit Renewal/Modification:	For Submittal of SRF Applications:
Department of Natural Resources Water Protection Program ATTN: NPDES Operating Permits Section P.O. Box 176 Jefferson City, MO 65102	Department of Natural Resources Water Protection Program ATTN: Financial Assistance Center P.O. Box 176 Jefferson City, MO 65102

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

Community Supplemental Survey

PLEASE ANSWER THE FOLLOWING APPLICABLE QUESTIONS. (ATTACH ADDITIONAL SHEETS AS NECESSARY)

1. Are there any significant transportation corridors within 20 miles of your community?
If yes, please explain. (Example: major interstate, railroad center)

Yes, I-70 and F-Highway

2. Are there any significant manufacturing or employment centers within 20 miles of your community?
If yes, please explain. (Example: commercial farming, manufacturing, government operation, big box store)

Yes, Oak Grove is located in the Kansas City Metro with several manufacturing and employment centers within 20 miles.

3. Where do the majority of children in your community receive their education?
(Please check appropriate box for each education level)

Elementary	☑ Within your community	☐ Within 20 miles	☐ Farther than 20 miles
Middle School	☑ Within your community	☐ Within 20 miles	☐ Farther than 20 miles
High School	☑ Within your community	☐ Within 20 miles	☐ Farther than 20 miles

4. Considering your community's tax base, debt level, ability to bond capital improvement projects, or repay loans, how likely is it that your community could afford to pay for the following:

	Very Unlikely	Unlikely	Likely	Very Likely
4.1 An upgrade or replacements to your wastewater system costing $50,000				✔
4.2 An upgrade or replacements to your wastewater system costing $250,000				✔
4.3 An upgrade or replacements to your wastewater system costing $1 million				✔

5. Which of the following best describes anticipated population change for your community over the next ten years?
☐ Significant Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significant Increase

6. Check the appropriate boxes in the following statements as it relates to the population change you predicted in questions 5.

6.1 Over the past 20 years the population has:
☐ Significantly Decreased ☐ Decreased ☐ Remained the Same ☑ Increased ☐ Significantly Increased

6.2 The majority of the population in the community is retired or is near retirement.
☑ Definitely False ☐ Probably False ☐ Probably True ☐ True ☐ Unknown

6.3 The majority of young people leave the community in search of employment or education elsewhere.
☐ Definitely False ☐ Probably False ☑ Probably True ☐ True ☐ Unknown

6.4 In the foreseeable future, the employment opportunity in or around the community will:
☐ Significantly Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significantly Increase

6.5 In the foreseeable future the economic activity in or around the community will:
☐ Significantly Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significantly Increase

6.6 In the foreseeable future the tax base of the community will:
☐ Significantly Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significantly Increase

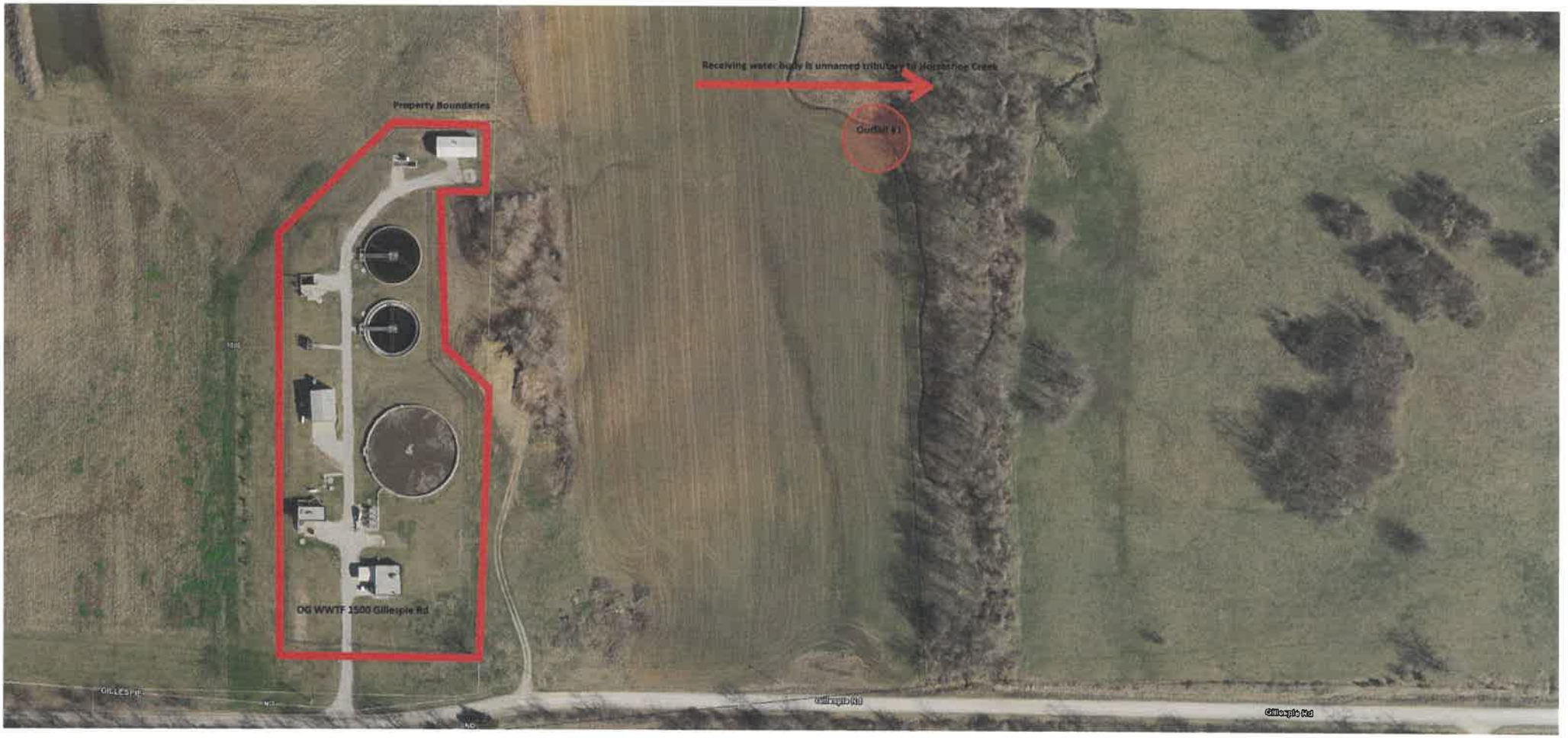
6.7 It is _____ for the community to meet its debt obligations.
☐ Difficult ☐ Somewhat Difficult ☑ Somewhat Easy ☐ Easy ☐ No Debt

7. What other issues or information should be considered when determining population stability or the financial ability for your community to pay for significant capital investments? Attach sheets as necessary.
(Example: Seasonal population changes, natural resources (lakes, rivers), age of infrastructure, significant employment changes, etc.)

Oak Grove's steady growth helps contribute to the financial ability of the community to pay for significant capital improvements.

8. Should an existing or proposed regional wastewater district be willing to connect, own, or operate your current facility, how likely would you be to consider this as an option?

Very Unlikely	Unlikely	Likely	Very Likely
		✔	


Receiving water body is unnamed tributary to Horseshoe Creek
Property Boundaries
Outfall #1
OG WWTF 1500 Gillespie Rd
GILLESPIE
Gillespie Rd
Gillespie Rd

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

NO EXPOSURE CERTIFICATION FOR EXCLUSION FROM NPDES STORMWATER PERMITTING UNDER MISSOURI CLEAN WATER LAW

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

Submission of this No Exposure Certification (NEC) constitutes notice by the facility representative identified in Section 7 of this form that there is no exposure of the facility's industrial activities, equipment and materials to stormwater in accordance with the requirements of 10 CSR 20-6.200 Stormwater Regulations.

A condition of no exposure exists at an industrial facility when all industrial materials and activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt and runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products or waste (including recyclable) products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. A storm-resistant shelter is not required for the following industrial materials and activities:

- Storage of drums, barrels, tanks and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak. "Sealed" means banded or otherwise secured and without operational taps or valves.
- Adequately maintained vehicles used in material handling.
- Final products, other than products that would be mobilized in stormwater discharges (e.g., rock salt).

A NEC must be provided for each facility qualifying for the no exposure exclusion. In addition, the certification of exclusion from NPDES permitting is available on a facility-wide basis only, not for individual outfalls. If any industrial activities or materials are or will be exposed to precipitation, or if the facility discharges any effluent other than stormwater to waters of the state, the facility is not eligible for the no exposure exclusion.

By signing and submitting this NEC, the facility representative in Section 7 certifies that a condition of no exposure exists at their facility or site, and is obligated to comply with the terms and conditions of 40 CFR 122.26(g).

1. FACILITY

FACILITY NAME			TELEPHONE NUMBER WITH AREA CODE	
City of Oak Grove Wastewater Treatment Facility			816-690-3773	
ADDRESS (PHYSICAL LOCATION)	CITY	COUNTY	STATE	ZIP CODE
11500 Gillispie Rd.	Oak Grove	Jackson	MO.	64075

1.2 PLEASE SELECT ONE:

- [x] a. This facility is now in operation under No Exposure Certification MO – NX? _____ and is submitting a certification. for renewal
- [ ] b. This is a facility submitting a request for a new No Exposure Certification (for a new facility).
- [ ] c. This facility is now in operation under Missouri State Operating Permit MO – _____, is requesting a new NEC, and wishes to terminate existing operating permit.
- [ ] d. This facility is a wastewater treatment plant with a design flow equal to or greater than 1.0 million gallons per day or a treatment plant required to have an approved pretreatment system and is requesting a NEC.

2. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of Oak Grove	calford@cityofoakgrove.com	816-690-3773	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
2110 S. Broadway	Oak Grove	MO.	64075

3. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
Corey Alford	calford@cityofoakgrove.com		
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
2110 S. Broadway	Oak Grove	MO.	64075

4. FACILITY CONTACT

NAME		TELEPHONE NUMBER WITH AREA CODE
Bryan Leighow		816-690-3773
TITLE	EMAIL ADDRESS	
Chief Wastewater Treatment Plant Operatc	bleighow@cityofoakgrove.com	

5. ADDITIONAL INFORMATION

5.1 Does the discharge(s) for which you are seeking an exclusion discharge to a combined sewer system? ☐ Yes ☑ No

If yes, provide the name of the combined sewer system entity _____

5.2 Does the discharge(s) for which you are seeking an exclusion discharge through a Municipal Separate Storm Sewer System (MS4)? ☐ Yes ☑ No

If yes, provide the name of the MS4 entity _____

5.3 Primary SIC Code of Facility #4952 Other SIC Codes _____ (Optional) Primary NAICS Code of Facility _____

5.4 Provide an attached list of **any** materials that are stored outside and exposed to stormwater including wood pallets, empty storage barrels, waste disposal containers (except for a secured covered dumpster). Materials other than final product such as raw material or by-product of your industrial activities that can be mobilized by stormwater do not qualify for no exposure exclusion.

5.5 Attach a 1:1,000 aerial photograph (preferred) or USGS topographic map showing the location of the facility. Indicate on the map the facility, the property boundaries of the facility, the receiving water body, any septic tanks/lateral lines, stormwater basins, the location of items stored outside and all outfall locations.

5.6 Is the facility causing an adverse impact on water quality due to major changes at the site to achieve no exposure? For example, constructing new buildings/shelters or constructing structures to prevent run-on in a formerly vegetated area.

☐ Yes ☑ No

If yes, please indicate approximately how much area was paved or roofed over. The department may use this information in considering whether stormwater discharges from your site are likely to have an adverse impact on water quality, in which you could be required to obtain permit coverage for land disturbance activities.

☐ Less than 1 acre ☐ 1 to 5 acres ☐ More than 5 acres

6. NO EXPOSURE CERTIFICATION CHECKLIST

The purpose of this checklist is to 1) help you determine whether the exposure of industrial activities, materials, or equipment to stormwater has been eliminated at the facility, and 2) help department staff evaluate the adequacy of your compliance activities and NEC. For the purpose of this checklist, "outdoors" are areas of the facility that are not beneath permanent roofed structures where stormwater cannot run into or out of.

Are any of the following materials or activities exposed to precipitation or occurring on-site, now or in the foreseeable future? Please answer all questions by checking "Yes" or "No."

Using, storing, or cleaning industrial machinery or equipment, and areas where residuals from using, storing, or cleaning industrial machinery or equipment remain and are exposed to stormwater.	☐ Yes ☑ No
Materials or residuals on the ground or in stormwater inlets from spills or leaks.	☐ Yes ☑ No
Materials or products from past industrial activity.	☐ Yes ☑ No
Material handling equipment (except adequately maintained vehicles).	☐ Yes ☑ No
Materials or products during loading/unloading or transporting activities.	☐ Yes ☑ No
Materials or products stored outdoors (except final products intended for outside use [e.g., new cars] where exposure to stormwater does not result in the discharge of pollutants).	☐ Yes ☑ No
Materials contained in open, deteriorated, or leaking storage drums, barrels, tanks, or similar containers.	☐ Yes ☑ No
Materials or products handled/stored on roads or railways owned or maintained by the facility.	☐ Yes ☑ No
Waste Material (except waste in covered, non-leaking containers [e.g., dumpsters]).	☐ Yes ☑ No
On-site land application or discharge of wastewater.	☐ Yes ☑ No
Particulate matter or visible deposits or residuals from roof stacks or vents not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater outflow.	☐ Yes ☑ No

If you answered "Yes" to any of these questions, you are not eligible for the no exposure exclusion.

7. CERTIFICATION

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of "no exposure" and obtaining an exclusion from NPDES stormwater permitting.

I certify under penalty of law that there are no discharges of stormwater contaminated by exposure to industrial activities or materials from the industrial facility or site identified in this document [except as allowed under 40 CFR 122.26(g)(2)].

I understand that I am obligated to submit a no exposure certification form once every five years to the NPDES permitting authority and, if requested, to the operator of the local municipal separate storm sewer system (MS4) into which the facility discharges (where applicable). I understand that I must allow the NPDES permitting authority, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of stormwater from the facility.

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

NAME (TYPE OR PRINT)	OFFICIAL TITLE
Bryan Leighow	Chief Wastewater Treatment Plant Operator
EMAIL	TELEPHONE NUMBER WITH AREA CODE
bleighow@cityofoakgrove.com	816-690-3773
SIGNATURE 	DATE SIGNED 8/17/2023

780-2828 (08-19)

GUIDANCE AND INSTRUCTIONS FOR COMPLETING THE NO EXPOSURE CERTIFICATION FOR EXCLUSION FROM NPDES STORMWATER PERMITTING UNDER MISSOURI CLEAN WATER LAW—FORM 780-2828

For assistance in determining if the facility meets the conditions of "No Exposure" please reference the Missouri Department of Natural Resources Guidance for No Exposure Certification for Exclusion from Stormwater Permit Requirements, Pub 2729. This document is available online at https://dnr.mo.gov/pubs/pub2729.htm.

Additionally you may reference the U.S. Environmental Protection Agency's *Guidance Manual for Conditional Exclusion from Storm Water Permitting Based on "No Exposure" of Industrial Activities to Storm Water, June 2000."* This document is available at https://www.epa.gov/npdes/guidance-manual-conditional-exclusion-stormwater-permitting-based-no-exposure-industrial.

Persons with more than one operating location shall obtain a Missouri State Operating Permit or No Exposure Certification for each location unless other permitting arrangements are allowed by the terms of the permit. Where multiple discharge points exist at a single operating location, one application may cover all the applicable discharges.

The no exposure exclusion is conditional. Therefore, if there is a change in circumstances that causes exposure of industrial activities or materials to stormwater, the operator is required to comply immediately with all requirements of the stormwater program, including obtaining a permit. Where a facility operator determines that exposure is likely to occur in the future due to some anticipated change at the facility, the operator shall obtain a permit prior to the discharge of stormwater associated with industrial activity. Regulated industrial operators must to either apply for a permit or submit a no exposure certification in order to be in compliance with the NPDES stormwater regulations.

Failure to maintain the condition of no exposure or obtain a permit to discharge can lead to unauthorized discharge of pollutants to waters of the state. Such a discharge is a violation of the Missouri Clean Water Law and the Federal Water Pollution Control Act and may be subject to fines and penalties.

Even if the facility operator certifies the condition of no exposure, the department retains the authority to require the facility to obtain a permit if it is determined that there is exposure at the facility, or that the discharge of stormwater is contributing to the violation of water quality standards.

Fees: There is no fee associated with No Exposure Certifications; however, if the facility has a current operating permit all past due fees must be made current in order to terminate the existing permit.

1. Facility name and address. The name by which this facility is locally known. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the name of the closest intersection, highway, county road, accurate geographic description, etc. (e.g., Intersection of Route A and M).

1.2 Check the appropriate box. Do not check more than one.

2. Facility Owner. Provide the legal name, mailing address, work phone, and email address of the owner. Correspondence will be mailed to the owner address listed on this application.

3. Continuing Authority. A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf. A continuing authority's name must be listed exactly as it appears on the Missouri Secretary of State's (SoS's) webpage: https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0, unless the continuing authority is an individual(s), government, or otherwise not required to register with the SoS

4. Facility Contact. Provide the name, title, work phone and email address 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.

5. Additional Information.

5.1 A combined sewer system is one in which the sanitary and storm sewers are one pipe. In Missouri, parts of Macon, Moberly, St. Joseph, Kansas City, Sedalia, and most of the city of St. Louis are on combined sewer systems. To find information, consult with your municipal public works department or, if in St. Louis, the Metropolitan St. Louis Sewer District (MSD). If this discharge is to a combined sewer system, it is exempt from stormwater permitting requirements in most cases. Visit http://dnr.mo.gov/env/wpp/permits/index.html to view individual general permits to determine if the permit you are applying for includes this exemption. If it does, you do not need to file this application.

5.2 If discharge is located within a MS4 permitted authority, provide the name of the authority.

5.3 List the four-digit Standard Industrial Classification (SIC) code that best describes your facility in terms of principal products or services you produce or provide. The SIC system was devised by the U.S. Office of Management and Budget to cover all economic activities. The primary SIC code is that of the operation that generates the most revenue, or,

secondly, employs the most personnel. To find the correct SIC code, contact the Missouri Department of Natural Resources at 573-522-4502 or refer to the following websites: www.osha.gov/pls/imis/sicsearch.html or siccode.com/en/naicscode/list/directory. In addition, list the North American Industry Classification System (NAICS) code, if known.

5.4 List anything stored outside, including wood pallets, empty storage barrels, waste disposal containers, or anything that is a raw material, by-product, or product of your industrial activities.

5.5 An aerial photograph with appropriate detail, such as Google Earth or Google Maps. U.S. Geological Survey topographic maps are available from the department's Missouri Geological Survey in Rolla, Mo at 573-368-2100 and online at http://dnr.mo.gov/geology/adm/publications/topoquads.htm. To the best of your ability, draw property boundaries, outfall locations, receiving water body(ies) and other significant facility features.

5.6 An increase in impervious area often leads to an increase in volume and velocity of runoff, which, in turn, can result in a higher concentration of pollutants in the discharge, since fewer pollutants are naturally filtered out.

6. All questions should be answered by checking "Yes" or "No". Please note that if you answer "Yes" to any of these questions, you are **not** eligible for the no exposure exclusion.

7. Include the name, title, phone number and email address of the person signing the form and the date of signing. An unsigned or undated certification will not be considered valid.

The No Exposure Certification form must be signed as follows:

(i) For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:
   a. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
   b. the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(ii) For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

(iii) For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing.

If you have any further questions regarding the no exposure certification or this form, contact the appropriate Regional Office.

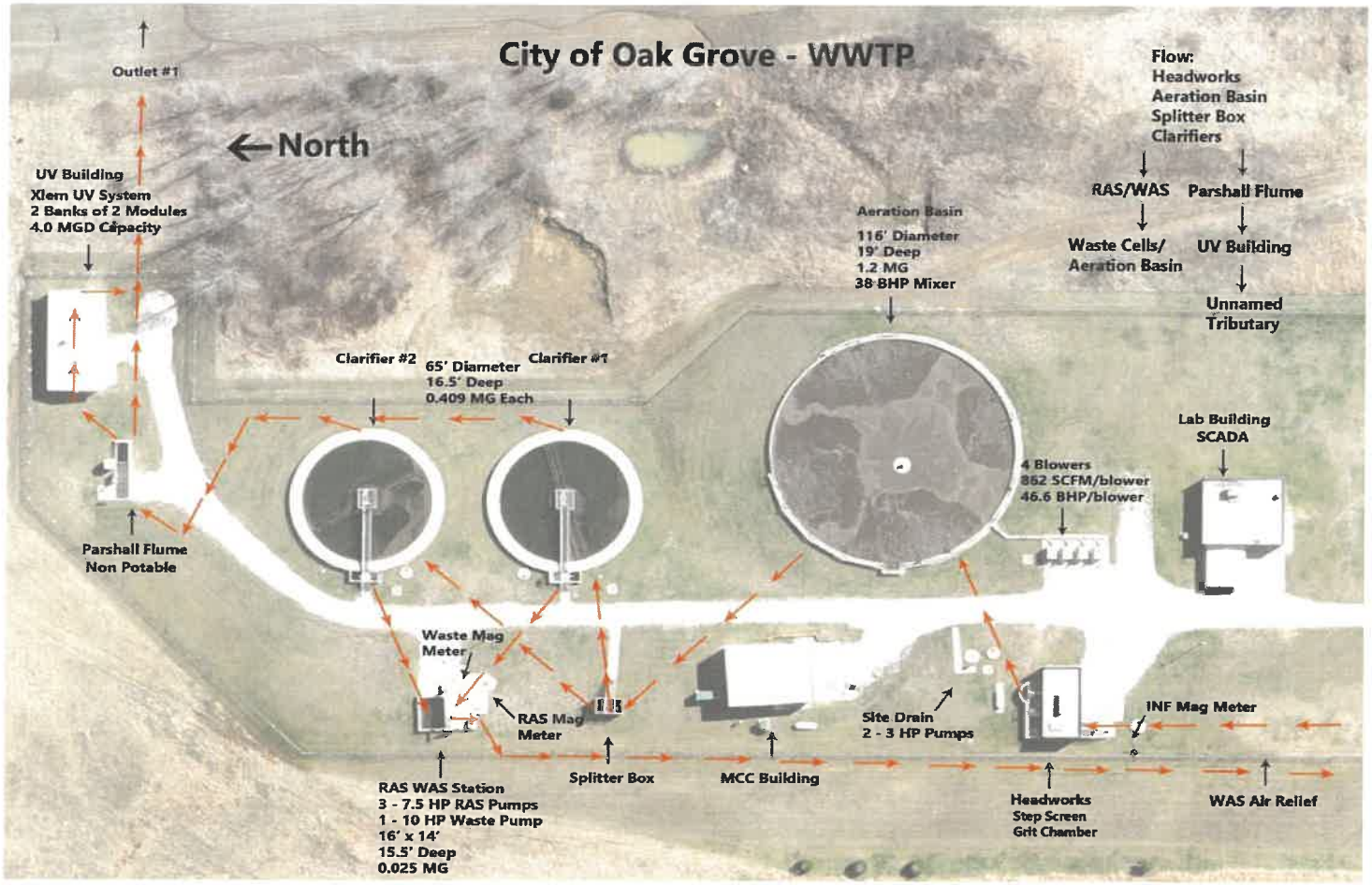
This completed form and any attachments should be submitted to:

For Site Specific Permits (MO-0000000), MOG05, 87, and MOR240:
Central Office, Water Protection Program -Operating Permits Section, (see contact information below)

For General Permits MOG – 09, 13, 14, 251, 35, 49, 50, 64, 641, 67, 69, 698, 75, 76, 821, 822, 84, 92, 94, 97, MOR – 13, 203, 22A, 22B, 22C, 23A, 23D, 23E, 240 (renewal), 60A, 80C, 80F, 80H:
Regional Offices (see map link below)

Central Office	Regional Offices
epartment of Natural Resources Water Protection Program ATTN: Operating Permits Section P.O. Box 176 Jefferson City, MO 65102-0176 800-361-4827 or 573-522-4502	Please send to the appropriate regional office. A map of regional offices with addresses and phone numbers are available online at dnr.mo.gov/regions/.

Submittal of an incomplete form may result in form being returned.


City of Oak Grove - WWTP
Outlet #1
North
UV Building
Xlem UV System
2 Banks of 2 Modules
4.0 MGD Capacity
Flow:
Headworks
Aeration Basin
Splitter Box
Clarifiers
RAS/WAS
Parshall Flume
Waste Cells/
Aeration Basin
UV Building
Unnamed
Tributary
Aeration Basin
116' Diameter
19' Deep
1.2 MG
38 BHP Mixer
Clarifier #2
65' Diameter
16.5' Deep
0.409 MG Each
Clarifier #1
Lab Building
SCADA
4 Blowers
862 SCFM/blower
46.6 BHP/blower
Parshall Flume
Non Potable
Waste Mag
Meter
RAS Mag
Meter
Site Drain
2 - 3 HP Pumps
INF Mag Meter
RAS WAS Station
3 - 7.5 HP RAS Pumps
1 - 10 HP Waste Pump
16' x 14'
15.5' Deep
0.025 MG
Splitter Box
MCC Building
Headworks
Step Screen
Grit Chamber
WAS Air Relief


E Gillespie Rd
E Gillespie Rd
Gillespie Rd
Campbell Rd
Campbell Rd
Google


Horseshoe Creek
Little Horseshoe Creek