FACT SHEET AND SUPPLEMENTARY INFORMATION FOR GENERAL PERMIT ARG640000

For the issuance of the new General Permit for Water Treatment Plants with a Wastewater Discharge located within the State of Arkansas, Permit Number ARG640000:

Information in this part is organized as follows:

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1 Background

Under 40 CFR §122.28, general permits may be written to cover categories of point sources having common elements, such as facilities that involve the same or substantially similar types of operations, that discharge the same types of wastes, or that are more appropriately regulated by a general permit. Given the number of water treatment plants with a wastewater discharge that require NPDES permit coverage, DEQ has elected to renew the ARG640000 General Permit for Water Treatment Plants with a Wastewater Discharge located within the State of Arkansas.

The previous permit took effect on December 1, 2016 and expires on November 30, 2021. The effective date of this renewal permit was changed to January 1, 2022. Existing permittees under the previous permit must submit a recertification NOI and all necessary information no later than November 30, 2021 to seek continued permit coverage.

2 Wastewater Characterization

Water treatment plants (WTPs) may use either groundwater or surface water as their source water and processes can vary depending on the treatment the source water requires.

Groundwater is most frequently treated to remove dissolved iron and manganese and typically includes oxidation (e.g.: ozonation, addition of chlorine) to precipitate the iron and manganese

followed by filtration to remove the iron and manganese oxides. Typical wastewater can be characterized as shown in Table 2.1:

Table 2.1: Typical Wastewater Pollutant Concentrations				
Pollutant	Concentration (mg/l)			
Total Iron	100 - 200			
Total Manganese	70 – 100			
Total Residual Chlorine (TRC)	0.6 - 1			

Surface water is most frequently treated by sedimentation basins followed by filtration to remove suspended solids. Precipitation, coagulation, and flocculation are frequently used to increase the effectiveness of filtration and sedimentation. Aluminum sulfate (alum) is the most common coagulant used by WTPs. Chlorine may be added before filtration as an oxidizing agent for precipitation, and to remove unwanted taste and color, and is frequently added after filtration for disinfection prior to distribution as drinking water. This chlorinated finish water is typically used to backwash the filters. Filter backwash from standard coagulation/flocculation processes associated with treating surface water can be characterized as shown in Table 2.2:

Table 2.2: Filter Backwash from Standard Processes with Treating Surface Water Pollutant Concentrations			
Pollutant	Concentration (mg/l)		
Suspended Solids, containing:			
 Aluminum Hydroxide 			
(additive): 25 to 50%			
• Clay/Silt (source water):	50 - 400		
35 to 50%			
Organic Matter (source			
water): 15 to 25%			
Total Residual Chlorine (TRC,	0.1 – 1		
additive)	0.1		

These pollutant concentrations show the need for limits on wastewater discharge(s) from water treatment plants.

3 Proposed Changes

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the requirements therein. The following changes were made to the previously issued permit:

3.1 The permit term cycle was updated from December 1–November 30 to January 1–December 31. Therefore, the effective date of the renewal permit is January 1, 2022 and the expiration date is December 31, 2026, as reflected on the cover page. Part 1.4.3.1 of the renewal permit specifies that existing permittees must submit a recertification NOI and all necessary information no later than the expiration date of the previous permit, November 30, 2021, to seek continued permit coverage.

- 3.2 The language on the cover page was updated to remove details of application requirements from the cover page. The requirements for obtaining coverage are detailed in Part 1 of the permit.
- 3.3 A Table of Contents was added for the corresponding Parts of the permit.
- 3.4 Multiple web links were updated to stay consistent with DEQ website changes.
- 3.5 The term "Operator", when it was previously used with regards to a person, or entity, with primary management and ultimate decision-making responsibility of the facility, has been changed to "permittee" or "applicant" to clarify the difference between a permittee or applicant and a licensed wastewater operator.
- 3.6 Discharges covered by this general permit were clarified in Part 1.2 of the permit and Section 4 of this Fact Sheet. The facilities covered under this permit include, but are not limited to, potable water treatment plants and feed-water water purification systems for commercial and industrial activities.
- 3.7 A requirement to obtain coverage under an individual permit was added to the exclusion of direct discharges into Extraordinary Resource Waters (ERWs), Ecologically Sensitive Waters (ESWs), or Natural and Scenic Waterways (NSWs) in Part 1.3.1.
- 3.8 The exclusion in Part 1.3.4 for facilities that discharge to losing stream segments no longer applies to facilities that demonstrate that the pollutant limits and requirements of the permit are adequate to provide sufficient reduction of all pollutants of concern and protection of the designated uses of the receiving waters. APC&EC Rule 6.301 specifies additional effluent limitations only for facilities receiving domestic waste. Facilities proposing to discharge to a potentially losing stream segment may be required to submit additional documentation as part of the demonstration that the pollutant limits and requirements of the permit are adequate to protect the receiving waters. An additional statement on protecting underground drinking water resources and aquatic life was included.
- 3.9 Part 1.3.5 was added to exclude facilities that the Director determines to be reasonably expected to contribute to a violation of water quality standards.
- 3.10 Part 1.3.6 was added to exclude any multi-component waste discharge that is not solely comprised of wastewater discharge from water treatment plants.
- 3.11 A paragraph regarding facilities in significant non-compliance with previously issued permits was added in Part 1.3.
- 3.12 Part 1.4.1.5 regarding providing proof of good standing for corporations was revised to be more descriptive of the applicable notification requirements.
- 3.13 Part 1.4.2.5 now specifies the discharge path of the facility be included with the name of the receiving water(s) listed in the NOI.

- 3.14 The NOI minimum requirements were revised to add whether aluminum-based coagulants are used in the treatment process, whether chlorinated water is used for filter backwash, whether the wastewater retention pond(s) (if any) has a retention time greater than 24 hours, and the license number of the wastewater operator(s) working at the facility as Parts 1.4.2.8—1.4.2.11.
- 3.15 Part 1.4.3.2 of the previous permit regarding continuation of the expired general permit was moved. It is now Part 4.13 of the permit.
- 3.16 Part 1.4.3.2 of the permit regarding requests for coverage for new discharges specifies that an NOC must be received by the applicant.
- 3.17 Part 1.4.3.3 was added to address existing facilities applying for new coverage.
- 3.18 The NOI submission procedure in Part 1.4.4 now requires electronic submission of documents through ePortal in accordance with the NPDES Electronic Reporting Rule (80 FR 64063).
- 3.19 Part 1.4.5 of the previous permit regarding NOI review and public notification process was moved. It is now Part 1.5 of the permit.
- 3.20 Part 1.4.5 regarding operator license requirements now specifies minimum operator licensing for both Industrial and Municipal facilities. This clarifies that operators with more advanced wastewater licenses may operate the wastewater treatment system at the facility. Additionally, requirements for Industrial facilities were expanded to include municipal licenses.
- 3.21 A section on requesting general permit coverage solely because a facility already has an individual NPDES permit was added as Part 1.6.
- 3.22 Part 1.5 of the previous permit regarding requiring an individual permit was moved. It is now Part 1.7 of the permit and includes additional factors that may require obtaining an individual NPDES permit. Additionally, permittees are now required to submit a Notice of Termination (NOT) for the general permit coverage if an individual permit is issued to the permittee, rather than the coverage terminating automatically.
- 3.23 A timeliness requirement was added to Part 1.7.2 to require permittees to respond to a notification that individual permit applications or supplementary material is required in a timely manner.
- 3.24 Part 1.6 of the previous permit regarding Notice of Termination (NOT) was moved. It is now Part 1.8 of the permit and was expanded upon to specify permit termination requirements.
- 3.25 Part 1.7 of the previous permit regarding the re-opener clause was moved. It is now Part 4.12 of the permit.
- 3.26 The Daily Average Waste Discharge Flow definition was expanded on in Footnote 1 in Part 2.
- 3.27 Total Residual Chlorine (TRC) approved test method language was revised and now includes minimum quantification level (MQL) in Parts 2 and 3.2.

- 3.28 Part 3.1 regarding Daily Average Waste Discharge Flow was updated to include requirements for new facilities.
- 3.29 The approval of monitoring frequency reductions was updated to last through the term of the permit, as shown in Part 3.4.5. Additional language regarding the process of requesting continuation of reductions was also included.
- 3.30 Part 4.5 regarding civil and criminal liability was updated.
- 3.31 Part 4.11 of the previous permit regarding permit applicability was removed from the permit. Permit applicability is determined in accordance with Part 1.2 of the permit.
- 3.32 Part 5.6 regarding removed substances was updated.
- 3.33 Part 6.1 regarding representative sampling requirements was updated.
- 3.34 Part 6.3 regarding monitoring procedures was updated to include minimum spike and duplicate sampling requirements.
- 3.35 Part 6.5 regarding reporting of monitoring results was updated to require electronic reporting through NetDMR.
- 3.36 Part 6.8 regarding records and monitoring information was updated to include the name and model of equipment, calibration date and time of equipment, and the individual(s) who performed the calibration(s).
- 3.37 Part 7.1 regarding planned changes was updated.
- 3.38 Part 7.2 regarding permit transfers was updated to clarify that a permit transfer may not be required for a change in signatory authorization. A new section was added as Part 7.9.3 to specify the requirements for a change in signatory authorization.
- 3.39 Part 7.2 was updated to clarify that, when a permit transfer is requested due to a change in ownership, a disclosure statement is required for the new owner unless exempted by Arkansas Code Annotated § 8-1-106(b). Additionally, the liability statement for the previous owner was removed and compliance requirements added for the new owner during the interim period.
- 3.40 Part 7.4 regarding compliance schedules was added to the permit to be consistent with 40 CFR §122.41(l)(5). Parts 7.4 through 7.6 of the previous permit were renumbered as a result.
- 3.41 Part 7.5 regarding twenty-four hour reporting was updated.
- 3.42 Part 7.7 of the previous permit, which was reserved, was removed from the permit.
- 3.43 Part 7.8 regarding duty to provide information was updated.

- 3.44 Several definitions in Part 8 were updated for clarity, or for consistency with Section 502 of the Clean Water Act, 40 CFR §122.2, or APC&EC Rules, including:
 - 3.44.1 ADEQ (removed);
 - 3.44.2 CWA;
 - 3.44.3 DEQ (replaces ADEQ);
 - 3.44.4 Department (removed);
 - 3.44.5 Director:
 - 3.44.6 Division (replaces Department);
 - 3.44.7 Facility;
 - 3.44.8 Instantaneous flow measurement;
 - 3.44.9 Monthly;
 - 3.44.10 NOI;
 - 3.44.11 Operator (removed);
 - 3.44.12 Permittee;
 - 3.44.13 Quarterly (replaces once/quarter); and
 - 3.44.14 Units of Measure

4 Permit Coverage

This general permit provides coverage for wastewater discharges associated with water treatment plants, except facilities which are excluded in Part 1.3 of the general permit. Operations covered under this permit are authorized to discharge wastewater to waters of the State of Arkansas subject to the conditions contained in the permit. Water treatment plant operations may include, but are not limited to, potable water treatment and process feedwater purification through processes or other treatment. These processes may include iron and manganese removal, micro-filtration, chemical softening, coagulation, or sedimentation. Typical waste streams include sedimentation basin blowdown, lab sink water, pump cooling water, and filter backwash.

5 Monitoring Requirements

The requirements for sample type and sampling frequency are based on the previous permit.

6 Other Conditions

6.1 Geographic Area and Covered Facilities

The general permit, when issued, will authorize discharges from water treatment plants throughout the State of Arkansas. The permit will be applicable only to facilities which discharge to waters of the State and are, therefore, subject to the requirements of Sections 301 and 402 of the Clean Water Act.

6.2 Timing of Requests

Requests for coverage shall be submitted as follows:

6.2.1 For new dischargers, at least 30 days prior to the first proposed discharge,

6.2.2 For existing dischargers covered under ARG640000, no later than November 30, 2021.

6.3 Expiration Date

In accordance with 40 CFR §46(a), the general permit will expire five (5) years from the effective date of the permit. An expired permit will continue in effect until such time that the permit is renewed or a new permit is issued.

6.4 Individual Permits

The Director of DEQ may require the issuance of individual permits according to the criteria in 40 CFR §122.28(b)(3).

7 Development and Basis for Permit Conditions

Following regulations promulgated at 40 CFR §122.44(1)(2)(ii), the permit limits are based on either technology-based effluent limits pursuant to 40 CFR §122.44(a) or on State water quality standards and requirements pursuant to 40 CFR §122.44(d), whichever are more stringent. Regulations promulgated at 40 CFR §122.44(a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on Best Professional Judgment (BPJ) in the absence of guidelines, or on a combination of the two.

Effluent limitations in this general permit were established in previous permits using BPJ pursuant to 40 CFR §125.3, and are consistent with the EPA Region 7 (Midwest) memorandum concerning water treatment plant effluent guidelines and recommendations and the previous general permit issued for this group of facilities. No changes to numeric effluent limitations are proposed in the permit.

The following subsections are an explanation of the derivation of the conditions of the permit and the reasons for them, or in cases of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR §124.7.

7.1 Justification for Limitations and Conditions of the Permit

Outfall Type 101: Facilities with a Daily Average Waste Discharge Flow ≤ 0.5 MGD

Effluent Characteristics	Discharge Limitations (mg/l unless otherwise specified)		Monitoring Requirements	
	Monthly Avg.	Daily Max.	Frequency	Sample Type
Flow	Report, MGD	Report, MGD	five/week	instantaneous/ totalizing/ calculated
Total Suspended Solids (TSS)	20.0	30.0	once/quarter	grab
Iron (Dissolved)	1.0	2.0	once/quarter	grab
Manganese (Dissolved)	1.0	2.0	once/quarter	grab
Aluminum (Dissolved)	1.0	2.0	once/quarter	grab
Total Residual Chlorine (TRC)	0.011 (Inst. Max.)		once/quarter	grab
рН	Minimum 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/quarter	grab

Outfall Type 102: Facilities with a Daily Average Waste Discharge Flow > 0.5 But ≤ 1.0 MGD

Effluent Characteristics	Discharge Limitations (mg/l unless otherwise specified)		Monitoring Requirements	
	Monthly Avg.	Daily Max.	Frequency	Sample Type
Flow	Report, MGD	Report, MGD	five/week	instantaneous/ totalizing/ calculated
Total Suspended Solids (TSS)	20.0	30.0	once/month	grab
Iron (Dissolved)	1.0	2.0	once/month	grab
Manganese (Dissolved)	1.0	2.0	once/month	grab
Aluminum (Dissolved)	1.0	2.0	once/month	grab
Total Residual Chlorine (TRC)	0.011 (Inst. Max.)		once/month	grab
рН	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab

Outfall Type 103: Facilities with a Daily Average Waste Discharge Flow > 1.0 MGD

Effluent Characteristics	Discharge Limitations (mg/l unless otherwise specified)		Monitoring Requirements	
	Monthly Avg.	Daily Max.	Frequency	Sample Type
Flow	Report, MGD	Report, MGD	five/week	instantaneous/ totalizing/ calculated
Total Suspended Solids (TSS)	20.0	30.0	once/week	grab
Iron (Dissolved)	1.0	2.0	once/week	grab
Manganese (Dissolved)	1.0	2.0	once/week	grab
Aluminum (Dissolved)	1.0	2.0	once/week	grab
Total Residual Chlorine (TRC)	0.011 (Inst. Max.)		once/week	grab
рН	Minimum 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab

7.1.1 Total Suspended Solids (TSS)

Backwash from filters contains sediment removed from the drinking water source, and the sedimentation pond(s) used by most drinking water plants to treat the waste process water are to allow these solids to settle. TSS limits have been included in the permit because discharges have the potential to carry these suspended solids. Due to the lack of water quality limitations, the limits have been determined based on best engineering judgment using the typical values associated with this type of facility to ensure the narrative criteria for solids, floating material, and deposits are not exceeded.

The permittee may apply for a reduction in the monitoring and reporting frequency of TSS if the results of all analyses have been within permit limits for the previous 8 quarters.

7.1.2 Iron and Manganese

Iron and Manganese are common constituents of groundwater that are treated and removed by drinking water treatment facilities. There are no water quality-based limitations for these constituents. These technology-based (BPJ) limitations are based on the table on page 1 of the EPA Region 7 memorandum concerning water treatment plant effluent guidelines and recommendations. These limitations are judged to represent the level of treatment attainable through the application of the best conventional pollutant control technology (BCT). These limits are only applicable to facilities that use groundwater as source water.

The permittee may apply for a reduction in the monitoring and reporting frequency of Iron and Manganese if the results of all analyses have been within permit limits for the previous 8 quarters.

7.1.3 Aluminum

Aluminum-based coagulants are the most common settling agents used in drinking water treatment plants. There are no water quality-based limitations for this pollutant. These technology-based (BPJ) limitations are based on the EPA Region 7 memorandum concerning water treatment plant effluent guidelines and recommendations. These limitations are judged to represent the level of treatment attainable through the application of the best conventional pollutant control technology (BCT). These limits are only applicable to facilities that use aluminum-based coagulants.

The permittee may apply for a reduction in the monitoring and reporting frequency of Aluminum if the results of all analyses have been within permit limits for the previous 8 quarters.

7.1.4 Total Residual Chlorine (TRC)

APC&EC Rule 2.409 states "Discharges shall not be allowed into any waterbody which, after consideration of the zone of initial dilution, the mixing zone and critical flow conditions, will cause toxicity to human, animal, plant or aquatic life or interfere with normal propagation, growth, and survival of aquatic biota." Since residual chlorine may cause toxicity conditions in the receiving stream, and facilities covered under this general permit may discharge into waterbodies without sufficient background flow to dilute the residual chlorine concentration to levels that will prevent toxicity, a TRC limit has been included in the permit.

The human health toxicity level for chlorine is much higher than that of aquatic life, so when determining a limit for chlorine, aquatic life toxicity levels are used. Chronic toxicity levels are lower than acute toxicity levels, so when determining a limit for chlorine, the chronic toxicity level is used. In general, waterbodies in Arkansas contain freshwater. Thus, based on EPA's "Quality Criteria for Water, 1986," the aquatic life chronic toxicity level for chlorine in freshwater is 0.011 mg/l. Therefore, the limit for TRC has been set at 0.011 mg/l.

The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured with fifteen (15) minutes of sampling. To demonstrate compliance with the TRC limit, the permittee must determine the effluent concentration by using any EPA approved test method established in 40 CFR \$136 capable of meeting a detection level of 0.033 mg/l or lower. If TRC is not detected at the required detection level (i.e., lab result is "ND"), the permittee may report a value of "0" on the Discharge Monitoring Report (DMR), thereby demonstrating compliance with the limit of 0.011 mg/l. Please note that if the required detection level is not met, TRC must be reported at the detection level achieved.

The monitoring and reporting requirements for TRC do not apply to facilities that do not discharge chlorinated water, nor to facilities with wastewater retention ponds with a retention time greater than 24 hours. Facilities that do not discharge chlorinated water do not require a limit because no chlorine has been added to the wastewater. Facilities

with wastewater retention ponds with a retention time greater than 24 hours do not require a limit because added chlorine is expected to dissipate in less than 24 hours.

The permittee may apply for a reduction in the monitoring and reporting frequency of TRC if the results of all analyses have been within permit limits for the previous 8 quarters.

7.1.5 pH

Water quality-based limits for pH are based on the APC&EC Rule 2.504, 40 CFR §122.44(l), and the previous permit. These limitations are judged to represent the level of treatment attainable through the application of the best conventional pollutant control technology (BCT). Measurement of pH helps to ensure that the alkalinity of the discharge has not been altered by products or other items on-site so that the receiving stream and its intended uses are protected.

7.2 Anti-backsliding

This permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402 (o) [40 CFR §122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA Section 402(o)(2), CWA Section 303(d)(4), or 40 CFR §122.44(l)(2)(i).

The permit meets or exceeds the requirements of the previous permit.

7.3 Limits Calculations

The Daily Maximum limits for TSS, Iron, Manganese, and Aluminum are based on Section 5.4.2 of the Technical Support Document for Water Quality-based Toxics Control:

Daily Maximum limits = Monthly Average limits \times 1.5 (TSS) Daily Maximum limits = Monthly Average limits \times 2.0 (Iron, Manganese, and Aluminum)

8 Public Notice

The public notice of the draft permit was published for public comment on March 14, 2021. The last day of the comment period was April 13, 2021.

A summary of the comments received by DEQ during the public comment period and response to the comments are included with this permit decision. The response to comments also includes a discussion of any substantial changes from the draft permit.

Copies of the draft permit and public notice were sent via email to the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Department of Parks, Heritage, and Tourism, the EPA, and the Arkansas Department of Health.

9 Economic Impact

This permit does not place any additional undue burden on any private business entity, large or small. The inspection and control requirements are set at a level to protect water quality while minimizing the resources required for compliance. The permit fee of \$400 is allowed by APC&EC Rule 9.

No significant changes were made that would cause additional economic impact to a facility covered under this permit.

10 Contact Information

For additional information regarding this permit, please contact the NPDES Permits Branch of the Office of Water Quality:

via mail at:

NPDES Permits Branch Office of Water Quality 5301 Northshore Drive North Little Rock, AR 72218-5317

via phone at: (501) 682-0623; or

via email at water-draft-permit-comment@adeq.state.ar.us

11 Sources

- 11.1 APC&EC Rule 2.
- 11.2 APC&EC Rule 6, which includes Title 40 Code of Federal Regulations adapted verbatim by DEQ in Rule 6.104.
- 11.3 <u>APC&EC Rule 8.</u>
- 11.4 APC&EC Rule 9.
- 11.5 Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).
- 11.6 Act 731 of the 2011 Regular Session of the Arkansas Legislature.
- 11.7 40 CFR §122.
- 11.8 40 CFR §124.
- 11.9 40 CFR §125.
- 11.10 ARG640000 previous permit.
- 11.11 Arkansas Water Quality Management Plan (WQMP).
- 11.12 Discharge Monitoring Reports (DMRs) submitted by the facilities covered by the previous ARG640000 Permit.
- 11.13 Continuing Planning Process (CPP).
- 11.14 EPA, May 1, 1986 "Quality Criteria for Water, 1986."
- 11.15 EPA Region 7 (Midwest) memorandum concerning water treatment plant effluent guidelines and recommendations.
- 11.16 <u>Technical Support Document for Water Quality-based Toxics Control, [TSD (EPA-505-2-90-001, March 1991)].</u>
- 11.17 NPDES Electronic Reporting Rule (80 FR 64063).