Permit Number: AR0038857
AFIN: 14-00028

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

Albermarle Corporation
Albemarle Corporation - South Plant

is authorized to discharge treated cooling tower blowdown, steam boiler blowdown, steam condensate, clean water car rinse (no chemicals), non-contact cooling water, stormwater, ultrafiltration backwash water, RO reject water, seasonal supplemental water, and treated sanitary wastewater (from internal outfall 02A) from a facility located as follows: Highway 79 South, Magnolia, AR 71753, in Columbia County.

Facility Coordinates: Latitude: 33° 10’ 39.25” N; Longitude: 93° 12’ 57.71” W

Discharge is to receiving waters named:

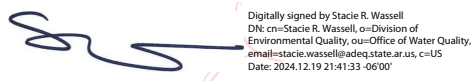
an unnamed tributary of Horsehead Creek, thence to Horsehead Creek, thence to Dorcheat Bayou, thence to the Red River in Segment 1A of the Red River Basin.

The outfall is located at the following coordinates:

Outfall 004: Latitude: 33° 10’ 17” N; Longitude: 93° 12’ 32” W

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

Effective Date: January 1, 2025
Expiration Date: December 31, 2029



Stacie R. Wassell
Associate Director, Office of Water Quality
Arkansas Department of Energy and Environment
Division of Environmental Quality

December 20, 2024
Issue Date

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 004 - treated treated cooling tower blowdown, steam boiler blowdown, steam condensate, clean water car rinse (no chemicals), non-contact cooling water, stormwater, ultrafiltration backwash water, RO reject water, seasonal supplemental water,and treated sanitary wastewater (from internal outfall 02A).

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 004. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/day	totalizing meter
Total Suspended Solids (TSS)	N/A	N/A	50.0	90.0	once/quarter	grab
Oil and Grease (O&G)	N/A	N/A	10	15	once/quarter	grab
Chlorides	N/A	N/A	Report	Report	once/quarter	grab
Sulfates	N/A	N/A	Report	Report	once/quarter	grab
Total Dissolved Solids	N/A	N/A	Report	Report	once/quarter	grab
Dissolved Oxygen (DO)	N/A	N/A	2.0 (Inst. Min.)		once/quarter	grab
Total Recoverable Lead[4]	0.0677	0.16	3.41 µg/l	7.62 µg/l	once/quarter	grab
Total Recoverable Arsenic[4, 5]	N/A	N/A	Report µg/l	Report µg/l	once/quarter	grab
Temperature	N/A	N/A	86°F, Inst. Max.		twice/month	in-situ
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	continuous	recorded

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Whole Effluent Toxicity[1, 2]						
P. promelas Limits 51714			7-Day Minimum Lethality Not < 100 %		once/quarter	composite
			7-Day Minimum Sub-Lethality Not < 80 %		once/quarter	composite
C. dubia Limits 51710			7-Day Minimum Lethality Not < 100 %		once/quarter	composite
			7-Day Minimum Sub-Lethality Not < 80 %		once/quarter	composite
***Pimephales promelas* (Chronic)[1]**	N/A		7-Day Minimum			
Pass/Fail Lethality (7-day NOEC) TLP6C			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC) TGP6C			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C			Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C			Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C			Report %		once/quarter	composite
***Ceriodaphnia dubia* (Chronic)[1]**			7-Day Minimum			
Pass/Fail Lethality (7-day NOEC) TLP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Reproduction (7-day NOEC) TGP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B			Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B			Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B			Report %		once/quarter	composite

1. See Part II.7 (WET Testing Requirements).
2. As per Part II.7 (WET Testing Condition), the permittee shall submit the results of the valid monthly increased frequency toxicity tests on the Unscheduled DMRs (51714, TLP6C, TOP6C, TPP6C, TGP6C, TQP6C, 51710, TLP3B, TOP3B, TPP3B, TGP3B, TQP3B). This condition applies to *P. promelas* and *C. dubia*.
3. (reserved).
4. See Part II.4 (Metals Requirements).
5. Monitoring and reporting requirements for Total Recoverable Arsenic is only required for the first four quarters of the permit.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the final treatment unit and prior to the receiving stream.

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: INTERNAL OUTFALL 02A - treated sanitary wastewater.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Internal Outfall 02A. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/month	instantaneous
Biochemical Oxygen Demand (BOD5)	7.5	11	30	45	once/quarter	grab
Fecal Coliform Bacteria (FCB)			col/100 ml			
	N/A	N/A	1000	2000	once/quarter	grab

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the chlorination unit associated with the activated sludge package plant and prior to commingling with any other wastewaters.

SECTION B. PERMIT COMPLIANCE SCHEDULE

None

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall hold at least a Basic Industrial license from the State of Arkansas in accordance with APC&EC Rule 3.

2. In accordance with 40 C.F.R. §§ 122.62(a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

3. Other Specified Monitoring Requirements

   The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

   - The monitoring and analytical instruments are consistent with accepted scientific practices.
   - The requests shall be submitted in writing to the Permits Branch of the Office of Water Quality of the DEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 C.F.R. Part 136 or approved in accordance with 40 C.F.R. § 136.5.
   - All associated devices are installed, calibrated, and maintained to ensure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Assurance/Quality Control (QA/QC) program.

   Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. DEQ must be notified in writing and the permittee must receive written approval from DEQ if the permittee decides to return to the original permit monitoring requirements.

4. The permittee may use any EPA approved method based on 40 C.F.R. Part 136 provided the minimum quantification level (MQL) for the chosen method is equal to or less than what has been specified in chart below:

Pollutant	MQL (µg/l)
Total Recoverable Arsenic	0.5
Total Recoverable Lead	0.5

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 C.F.R. Part 136. For any pollutant for which the permittee determines a site specific MDL, the permittee shall send to DEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a site specific MDL was correctly calculated. A site specific MQL shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

Upon written approval by Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

5. Stormwater runoff commingling with non-contact cooling water and treated sanitary wastewater discharged from Outfall 004 shall be managed in accordance with Best Management Practices (BMPs) to control the quality of stormwater discharges associated with industrial activity that are authorized by this permit. Use of BMPs in lieu of numeric effluent limitations in NPDES permits is authorized under 40 C.F.R. § 122.44(k) when the Permitting Authority finds numeric effluent limitations to be infeasible to carry out the purposes of the Clean Water Act. All spilled products and other spilled wastes must be immediately cleaned up and properly disposed. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

6. In accordance with 40 C.F.R. § 415.292, there shall be no discharge of process wastewater pollutants to Waters of the State, except that residual brine and depleted liquor may be returned to the body of water from which the process brine solution was originally withdrawn.

7. <u>WHOLE EFFLUENT TOXICITY LIMITS (7 DAY CHRONIC NOEC)</u>

It is unlawful and a violation of this permit for a permittee or his designated agent, to manipulate test samples in any manner, to delay sample shipment, or to terminate or to cause to terminate a toxicity test. Once initiated, all toxicity tests must be completed unless specific authority has been granted by EPA Region 6 or the State NPDES permitting authority (DEQ).

A. SCOPE AND METHODOLOGY

i. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

Applicable To Final Outfall	004
Reported On DMR As Final Outfall	004
Critical Dilution (%)	100%
Effluent Dilution Series (%)	32%, 45%, 56%, 80%, 100%
Chronic Limit - Lethality	not < 100%

Chronic Limit - Sub-Lethal	not < 80%
Schedule Of Compliance	No
Testing Frequency:	Once/Quarter
Sample Type	"Composite Sample (defined in Paragraph B.iii)"
Test Species/Methods:	40 C.F.R. § 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013, or the most recent update thereof.

ii. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

iii. This permit may be reopened to require chemical specific effluent limits, additional testing, a Toxicity Reduction Evaluation, and/or other appropriate actions to address toxicity.

iv. The conditions of this item are effective beginning with the effective date of the WET limit. When the effluent fails the lethal or sub-lethal endpoint at or below the critical dilution, the permittee shall be considered in violation of this permit limit and the frequency for the affected species will increase to monthly until compliance with the No Observed Effect Concentration (NOEC) effluent limitation is demonstrated for a period of three consecutive months, at which time the permittee may return to the testing frequency stated in PART I of this permit. The purpose of the increased frequency for WET testing after a violation is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

B. REQUIRED TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

Condition/Criteria	***Ceriodaphnia dubia***	***Pimephales promelas***
Test Duration	Until 60% or more of surviving control females have 3 broods (max 8 days)	7 days
# of replicates per concentration	10	5
# of organisms per replicate	1	8
# of organisms per concentration	10	40 (minimum)
# of test concentrations per effluent	5 and a control	5 and a control
Sample Holding Time *	36 hours for first use	36 hours for first use
Sampling Requirement *	Minimum of 3 samples	Minimum of 3 samples
Test Acceptability Criteria	≥80% survival of all control organisms.	≥80% survival of all control organisms.
	Mean of 15 or more neonates per surviving control female.	Mean dry weight per surviving organism in control must be ≥0.25mg.
	60% of surviving control females must produce 3 broods.	
Coefficient of Variation **	40% or less, unless significant effects are exhibited.	40% or less unless significant effects are exhibited.
Percent Minimum Significant Difference (PMSD range) for Sub-lethal Endpoint **	13 – 47	12 – 30

* If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples and the minimum number of effluent portions are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent, and must meet the holding time between collection and first use of the sample. When possible, the effluent samples used for the toxicity tests shall be collected on separate days. The effluent composite sample collection duration and

the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item C of this section.

** Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%, or a PMSD value greater than the higher value on the range provided.

i. Statistical Interpretation

The statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in the appropriate method manual listed in Part II or the most recent update thereof.

ii. Dilution Water

a. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

(1) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

(2) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

b. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

(1) a synthetic dilution water control which fulfills the test acceptance requirements was run concurrently with the receiving water control;

(2) the test indicating receiving water toxicity has been carried out to completion,

(3) the permittee includes all test results indicating receiving water toxicity with the full report and information required; and

(4) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

iii. Samples and Composites

a. The permittee shall collect a minimum of three samples (flow-weighted composite if possible) from the outfall(s).

b. The permittee shall collect a second and third sample (composite samples if possible) for use during the 24-hour renewal of each dilution concentration for each test. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours for first use of the sample. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 0-6 degrees Centigrade during collection, shipping, and/or storage. A holding time up to 72 hrs is allowed upon notification to DEQ of the need for additional holding time.

c. The permittee must collect the composite samples such that the effluent samples are representative of the discharge duration, and of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.

C. REPORTING

i. The permittee shall prepare a full report of the results of all tests conducted pursuant to this part in accordance with the Report Preparation Section of the most current publication of the method manual, for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report and submit them to the Division via NetDMR. For any test which fails, is considered invalid, or which is terminated early for any reason, the full report must be submitted for Division review.

ii. A valid test for each species must be reported during each reporting period specified in PART I of this permit. One set of biomonitoring data for each species is to be recorded on the DMR for each reporting period. Additional results are reported on Unscheduled DMRs.

iii. The permittee shall submit the results of each valid toxicity test on the DMR for that reporting period in accordance with PART I of this permit, as follows below. Submit increased frequency test information clearly marked as such with Unscheduled DMR. Only results of valid tests are to be reported on the DMR.

Reporting Requirement	**Parameter STORET CODE**	
	Ceriodaphnia dubia	*Pimephales promelas*
Enter a “1” if the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, otherwise enter a “0.”	TLP3B	TLP6C
Report the NOEC value for survival	TOP3B	TOP6C
Enter a “1” if the NOEC for growth or reproduction is less than the critical dilution,	TGP3B	TGP6C

Reporting Requirement	**Parameter STORET CODE**	
	Ceriodaphnia dubia	*Pimephales promelas*
otherwise enter a "0."		
Report the NOEC value for growth or reproduction	TPP3B	TPP6C
Report the highest (critical dilution or control) Coefficient of Variation	TQP3B	TQP6C
Report the lowest NOEC value (survival, reproduction, or growth) LIMIT CODE	51710	51714
The permittee shall submit the results of the monthly increased frequency toxicity tests on the Unscheduled DMRs.		

iv. DMR parameters

Report the following parameters on the DMR:

Scheduled DMR: TLP6C, TOP6C, TPP6C, TGP6C, TQP6C, 51714, TLP3B, TOP3B, TPP3B, TGP3B, TQP3B, 51710.

Unscheduled DMR: TLP6C, TOP6C, TPP6C, TGP6C, TQP6C, 51714, TLP3B, TOP3B, TPP3B, TGP3B, TQP3B, 51710.

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. **Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; and/or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report (DMR) which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

2. **Penalties for Violations of Permit Conditions**

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. **Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

A. Violation of any terms or conditions of this permit.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APC&EC Rule 9 (Permit fees) as required by Part III.A.11 herein.

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.

4. **Toxic Pollutants**

Notwithstanding Part III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APC&EC Rule 2, as amended, or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under APC&EC Rule 2, as amended, or Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. **Civil and Criminal Liability**

Except as provided in permit conditions for "Bypass of Treatment Facilities" (Part III.B.4), and "Upset" (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statutes or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

7. **State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

8. **Property Rights**

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

9. **Severability**

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

10. **Applicable Federal, State or Local Requirements**

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal, state, or local requirement, statute, ordinance, or regulation.

11. **Permit Fees**

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APC&EC Rule 9 (Rule for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 C.F.R. §§ 122.64 and 124.5(d), as adopted in APC&EC Rule 6 and the provisions of APC&EC Rule 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

A. 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 backup 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.

B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit.

2. **Need to Halt or Reduce 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. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or discharges or both until the facility is restored or an alternative method of treatment is provided.

This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. **Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment or the water receiving the discharge.

4. **Bypass of Treatment Facilities**

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 C.F.R. § 122.41(m)(1)(i).

A. Bypass not exceeding limitation

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 Parts III.B.4.B and 4.C.

B. Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part III.D.6 (24-hour notice).

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(b) 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 the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
(c) The permittee submitted notices as required by Part III.B.4.B.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.C(1).

5. **Upset Conditions**

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 Part III.B.5.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 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:

1. An upset occurred and that the permittee can identify the specific cause(s) of the upset.
2. The permitted facility was at the time being properly operated.
3. The permittee submitted notice of the upset as required by Part III.D.6.
4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. **Removed Substances**

A. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 C.F.R. Parts 257, 258, and 503.

B. Any changes to the permittee's disposal practices described in the Statement of Basis, as derived from the permit application, will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. **Power Failure**

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

SECTION C – MONITORING AND RECORDS

1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before

the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Division approved method (i.e., as allowed in the *Other Specified Monitoring Requirements* condition under Part II), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Division.

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 C.F.R. Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to ensure accuracy of measurements and shall ensure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to ensure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. **Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

5. **Reporting of Monitoring Results**

40 C.F.R. § 127.11(a)(1) and 40 C.F.R. § 127.16(a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory

Authorities must initially request access for a NetDMR account. Once a NetDMR account is established, use the following link to access electronic filing: https://cdx.epa.gov. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 C.F.R. § 127.15. Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR dated and submitted no later than the 25th day of the month, following the completed reporting period beginning on the effective date of the permit.

6. **Additional Monitoring by the Permittee**

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 C.F.R. Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. **Retention of Records**

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 this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. **Record Contents**

Records and monitoring information shall include:

A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any.
B. The individual(s) who performed the sampling or measurements.
C. The date(s) and time analyses were performed.
D. The individual(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The measurements and results of such analyses.
G. The chain of custody that records the sequence of custody, control, transfer, analysis, and measurement of the analyses.

9. **Inspection and Entry**

The permittee shall allow the Director, or an authorized representative, upon the 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 this 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.
D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. **Planned Changes**

The Permittee shall give notice to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 C.F.R. § 122.41(l)]. Notice is required only when:

A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 C.F.R. § 122.29(b).
B. 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 the notification requirements under 40 C.F.R. § 122.42(b).

2. **Anticipated Noncompliance**

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. **Transfers**

The permit is nontransferable to any person except after notice to the Director. The Director 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 Act.

4. **Monitoring Reports**

Monitoring results shall be reported at the intervals and in the form specified in Part III.C.5. **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. **Compliance Schedule**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the

cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. **Twenty-four Hour Report**

Please be aware that the notifications can be sent by email to EE.Water.Enforcement.Report@arkansas.gov or at 501-682-0624 for immediate reporting:

A. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances to the Enforcement Branch of the Office of Water Quality of DEQ. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:

1. A description of the noncompliance and its cause.
2. 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.
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit.
2. Any upset which exceeds any effluent limitation in the permit.
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit.

C. The Director may waive the written report on a case-by-case basis if the notification has been received within 24 hours by the Enforcement Branch of the Office of Water Quality of the DEQ.

7. **Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Parts III.D.4, 5, and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.6.

8. **Changes in Discharge of Toxic Substances for Industrial Dischargers including Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers**

The Director shall be notified as soon as the permittee knows or has reason to believe:

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant including those listed in 40 C.F.R. § 401.15 which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 C.F.R. § 122.42(a)(1).

B. That any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant including those listed in 40 C.F.R. § 401.15 which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 C.F.R. § 122.42(a)(2).

9. **Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director 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 Director, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner, and time frame requested by the Director.

10. **Duty to Reapply**

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. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be implemented through procedures outlined by APC&EC Rule 6.

11. **Signatory Requirements**

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

A. All **permit applications** shall be signed as follows:

1. 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.
(b) The manager of one or more manufacturing, production, or operation 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.

2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively.

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   (a) The chief executive officer of the agency.
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above.
2. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section shall make 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 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."

12. **Availability of Reports**

Except for data determined to be confidential under 40 C.F.R. Part 2 and APC&EC Rule 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Environmental Quality. As required by the Rules, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. **Penalties for Falsification of Reports**

The Arkansas Water and Air Pollution Control Act 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 under this permit shall be subject to civil penalties specified in Part III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

14. **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 Director, it shall promptly submit such facts or information.

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 C.F.R. § 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"7-Day Average"** means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week, divided by the number of "daily discharges" measured during that week (also known as "average weekly"). The 7-Day Average for Fecal Coliform Bacteria (FCB), or *E. coli*, is the geometric mean of the "daily discharges" of all effluent samples collected during a calendar week in colonies, or most probable number (MPN) per 100 ml.
2. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
3. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
4. **"APC&EC"** means the Arkansas Pollution Control and Ecology Commission.
5. **"Applicable standards and limitations"** means all State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the Act, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the Act.
6. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Rule 2, as amended.
7. **"Best Management Practices (BMPs)"** means activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may include structural devices or nonstructural practices.
8. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 C.F.R. § 122.41(m)(1)(i).
9. **"Composite sample"** means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
10. **"CV"** means coefficient of variation.
11. **"Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
    A. **Mass Calculations:** For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of pollutant discharged over the sampling day.

B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

12. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
13. **"Director"** means the Director of the Division of Environmental Quality.
14. **"Dissolved oxygen limit"** means
    A. when limited in the permit as a minimum monthly average, the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month; **OR**
    B. when limited in the permit as an instantaneous minimum value, that no value measured during the reporting period may fall below the stated value.
15. **"Division"** means the Division of Environmental Quality (**DEQ**).
16. **"E. coli"** means a sample that consists of one effluent grab portion collected during a 24-hour period at peak loads. For *E. coli*, report the Daily Maximum as the highest "daily discharge" during the calendar month, 7-Day Average as the geometric mean of all "daily discharges" within a calendar week, and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies or MPN per 100 ml.
17. **"Fecal Coliform Bacteria (FCB)"** means a sample that consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest "daily discharge" during the calendar month, 7-Day Average as the geometric mean of all "daily discharges" within a calendar week, and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies or MPN per 100 ml.
18. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
19. **"Industrial User"** means a source of Indirect Discharge. Indirect Discharge means the introduction of pollutants into a POTW from any non-domestic source regulated under section 307(b), (c), or (d) of the Act.
20. **"Instantaneous flow measurement"** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
21. **"Instantaneous Maximum"** (when limited in the permit as an instantaneous maximum value) means that no value measured during the reporting period may fall above the stated value.
22. **"Instantaneous Minimum"** (when limited in the permit as an instantaneous minimum value) means that no value measured during the reporting period may fall below the stated value.
23. **"Interference"** means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
    A. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use, or disposal; and
    B. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations, or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act

(RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

24. **"Monitoring and Reporting"**
    NPDES permits specify monitoring and reporting requirements for specific periods defined as follows:
    A. **"MONTHLY"** means a calendar month, or any portion of a calendar month, for monitoring requirement frequency of once/month or more frequently.
    B. **"BI-MONTHLY"** means two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.
    C. **"QUARTERLY"** means:
        1. a **fixed calendar quarter** (or any part of the fixed calendar quarter) for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December; **OR**
        2. a **fixed three month period** (or any part of the fixed three month period) of, or dependent upon, the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.
    D. **"SEMI-ANNUAL"** means the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months.
    E. **"ANNUAL" or "YEARLY"** means a fixed calendar year, or any portion of the fixed calendar year, for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.
25. **"Monthly Average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month, divided by the number of "daily discharges" measured during that month. For Fecal Coliform Bacteria (FCB) or *E. coli*, report the Monthly Average as the geometric mean of all "daily discharges" within a calendar month.
26. **"National Pollutant Discharge Elimination System (NPDES)"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Act.
27. "**NOEC**" means No Observed Effect Concentration.
28. **"Pass Through"** means a discharge which exits the POTW in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).
29. **"Percent Removal"** means a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the effluent pollutant concentrations for a given time period.
30. **"PMSD"** means Percent Minimum Significant Difference.
31. **"POTW"** means Publicly Owned Treatment Works, as defined in 40 C.F.R. § 403.3(q).

32. **"Severe property damage"** means 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 products.
33. **"Sewage sludge"** means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.
34. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.
35. **Units of Measure:**
    A. **"cfs"** means cubic feet per second.
    B. **"MGD"** means million gallons per day.
    C. **"µg/l"** means micrograms per liter, or parts per billion (ppb).
    D. **"mg/l"** means milligrams per liter, or parts per million (ppm).
    E. **"ppb"** means parts per billion.
    F. **"ppm"** means parts per million.
    G. **"s.u."** means standard units.
    H. **"lb/d"** means pounds per day.
    I. **"col/100 ml"** means colonies per 100 milliliters, or most probable number (MPN) per 100 milliliters.
36. **"Upset"** means 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. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless or improper operations.
37. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
38. **"Week"** means a calendar week, consisting of the 7-day period of Sunday through Saturday.
39. **"Weekday"** means Monday – Friday.

Final Statement of Basis

This Statement of Basis is for information and justification of the permit requirements only. Please note that it is not enforceable. This permitting decision is for the renewal of discharge Permit Number AR0038857 with Arkansas Department of Energy and Environment – Division of Environmental Quality (DEQ) Arkansas Facility Identification Number (AFIN) 14-00028 to discharge to Waters of the State.

1. PERMITTING AUTHORITY

The issuing office is:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT

The applicant's mailing address is:

Albermarle Corporation - South Plant
P.O. Box 729
Magnolia, AR 71754-0729

The facility address is:

Albermarle Corporation - South Plant
Highway 79 South
Magnolia, AR 71753

3. PREPARED BY

The permit was prepared by:

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4. PERMIT ACTIVITY

Previous Permit Effective Date:	May 1, 2018
Previous Permit Expiration Date:	April 30, 2023

The permittee submitted a permit renewal application on October 21, 2022. The discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 C.F.R. § 122.46(a).

The permittee requested to add ultrafiltration system backwash water, reverse osmosis (RO) reject water, and hot season supplemental water to the effluent description for Outfall 004. In order to decrease reliance on the Sparta Aquifer for fresh water, the permittee intends to reclaim the artificial marsh effluent water to be reused as fresh water in the plant. This water will be treated to remove suspended materials and then fed through the ultrafiltration system before being fed to the RO system. The RO water will be used to supplement the boiler feed tank but may be used anywhere in the manufacturing process.

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

APC&EC - Arkansas Pollution Control and Ecology Commission
BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management practice
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
C.F.R. - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH_3-N - ammonia nitrogen
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Rule 2 - APC&EC Rule 2

Rule 6 - APC&EC Rule 6
Rule 8 - APC&EC Rule 8
Rule 9 - APC&EC Rule 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS - United States Geological Survey
WET - whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

The compliance and enforcement history for this facility can be reviewed by using the following web link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_Enforcement%20Review_20230123.pdf

A review in February 2024 of the DMR data from 2023 showed that there were exceedances of the monthly average BOD_5 concentration limit for the monitoring periods ending June 30, 2023, and September 30, 2023.

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. The Twenty-four Hour Report condition in Part III.D.6 has been revised.
2. The Changes in Discharge of Toxic Substances for Industrial Dischargers condition in Part III.D.8 has been revised.
3. The TSS decimal places at Outfall 004 have been revised to correspond with the requirements in the OWQ's updated rounding policy.
4. The WET language has been updated.
5. The effluent description has been updated based on the permittee's request. See Item No. 4 of this Statement of Basis for additional information.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

The outfall is located at the following coordinates based on the previous permit, and confirmed with Google Earth using WGS84:

Latitude: 33° 10’ 17” N; Longitude: 93° 12’ 32” W

The receiving waters named:

an unnamed tributary of Horsehead Creek, thence to Horsehead Creek, thence to Dorcheat Bayou, thence to the Red River in Segment 1A of the Red River Basin. The receiving stream with Assessment Unit AR_11140203_021 (closest downstream 3-digit reach code assigned to Horsehead Creek) is a Water of the State classified for secondary contact recreation, raw water source for industrial and agricultural water supplies; propagation of desirable species of fish and other aquatic life; and other compatible uses.

7. 303(d) LIST, TOTAL MAXIMUM DAILY LOADS, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS

A. 303(d) List

The receiving stream is not listed on the 2018 303(d) list. Therefore no permit action is needed.

B. Applicable Total Maximum Daily Load (TMDL) Reports

TMDLs for Chloride, Copper, Dissolved Oxygen, Lead, pH, Sulfate, TDS, and Turbidity in the Bodcau Creek and Dorcheat Bayou Watersheds, Arkansas contains a WLA for Total Recoverable Lead which is applicable to this facility. The WLA has been included in the permit at Outfall 004. No other WLAs were assigned to this facility in the TMDL.

C. Endangered Species

No comments on the application were received from the USF&WS.

D. Anti-Degradation

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APC&EC Rule 2.

8. OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION

The following is a description of the facility described in the application:

A. Average Flow: Internal Outfall 02A: 0.024 MGD (August 2021)
Outfall 004: 1.47 MGD (April 2023)

Two higher monthly average flows were reported at Outfall 001. However, these were determined to be outliers and were therefore not used in the determination of permit limits and/or reasonable potential for this permit. The higher flows occur due to heavy rain events. At those times, the background flow in the receiving waters will be higher than normal.

See the following link:
https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_Flow%20Outliers_20240722.pdf

B. Type of Treatment: Internal Outfall 02A: activated sludge with chlorination
Outfall 004: unaided biological treatment in a man-made marsh system

C. Discharge Description: Internal Outfall 02A: treated sanitary wastewater
Outfall 004: Treated non-contact cooling water, stormwater, ultrafiltration backwash water, RO reject water, seasonal supplemental water, and treated sanitary wastewater (from internal outfall 02A)

D. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 40 is less than 80, this facility is classified as a minor industrial.

E. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Rule 6.202.

9. ACTIVITY

Under the Standard Industrial Classification (SIC) code of 2819 and 2869 or North American Industry Classification System (NAICS) code of 325188, the applicant's activities are the operation of an organic and inorganic chemical manufacturing facility.

10. SEWAGE SLUDGE AND SOLIDS PRACTICES

Sewage sludge and solids are hauled off site as necessary.

11. DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS

The Division of Environmental Quality has determined to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 C.F.R. Parts 122, 124, and Subchapter N), and rules promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 C.F.R. § 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations and Conditions

Following regulations promulgated at 40 C.F.R. § 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 C.F.R. § 122.44(a) or on State water quality standards and requirements pursuant to 40 C.F.R. § 122.44(d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
OUTFALL 004								
TSS	N/A	N/A	50.0	90.0	50	90	50.0	90.0
Chlorides	N/A	N/A	Report	Report	Report	Report	Report	Report
Sulfates	N/A	N/A	Report	Report	Report	Report	Report	Report
TDS	N/A	N/A	Report	Report	Report	Report	Report	Report
DO	2.0 (Inst. Min.)		N/A		N/A		2.0 (Inst. Min.)	
O & G	10	15	N/A	N/A	10	15	10	15
Total Recoverable Lead	3.41 µg/l	7.62 µg/l	N/N	N/A	N/A	N/A	3.41 µg/l	7.62 µg/l
Total Recoverable Arsenic	N/A	N/A	Report µg/l**	Report µg/l**	N/A	N/A	Report µg/l**	Report µg/l**
Temperature	86°F, Inst. Max.		N/A		86°F, Inst. Max.		86°F, Inst. Max.	
pH	6.0-9.0 s.u.		N/A		6.0-9.0 s.u.		6.0-9.0 s.u.	
Lethal WET Limit*	Not < 100%		N/A		Not < 100%		Not < 100%	
Sub-Lethal WET limit*	Not < 80%		N/A		Not <80%		Not < 80%	
INTERNAL OUTFALL 02A								
BOD_5	N/A	N/A	30	45	30	45	30	45
FCB, col/100 ml	N/A	N/A	1000	2000	1000	2000	1000	2000

*Limits are effective for *P. promelas* and *C. dubia*.
**Monitoring and reporting is only required for the first year of the permit.

A. Justification for Limitations and Conditions of the Final Permit

Parameter	Water Quality or Technology	Justification
OUTFALL 004		
TSS	Technology	Previous permit, 40 C.F.R. § 122.44(l), and judgment of permit writer
Chlorides	Technology	CPP (page 7 of Chapter IX), 40 C.F.R. § 122.44(l), and previous permit
Sulfates	Technology	CPP (page 7 of Chapter IX), 40 C.F.R. § 122.44(l), and previous permit
TDS	Technology	CPP (page 7 of Chapter IX), 40 C.F.R. § 122.44(l), and previous permit
DO	Water Quality	Rule 2.505, CWA § 402(o), and previous permit
O&G	Water Quality	Rule 2.510, CWA § 402(o), and previous permit
Total Recoverable Lead	Water Quality	Rule 2.508, TMDL, CWA § 402(o), and previous permit
Total Recoverable Arsenic	Technology	Rule 2.409
Temperature	Water Quality	Rule 2.502, CWA § 402(o), and previous permit
pH	Water Quality	Rule 2.504, CWA § 402(o), and previous permit
INTERNAL OUTFALL 02A		
BOD_5	Technology	40 C.F.R. § 122.44(l), previous permit and judgment of permit writer
FCB	Technology	Rule 2.507, 40 C.F.R. § 122.44(l), previous permit and judgment of permit writer

The new waste streams (ultrafiltration backwash water, RO reject water, and seasonal supplemental water) have been reviewed. Since the new waste streams consist of recycled water taken from the wastewater treatment plant, no additional parameters are expected to be added to the waste stream.

Minerals

A reasonable potential analysis was performed for Chlorides, Sulfates, and TDS using the data submitted on the DMRs during the term of the previous permit. This data showed that there is not reasonable potential for exceedances of the water quality standards for minerals due to the discharge from this facility. Therefore, limits are not necessary at this time. The monitoring and reporting requirements will be continued as required by the CPP due to the applicable UAA.

The minerals levels will be evaluated at the time of the next permit renewal to determine if reasonable potential exists.

Outlier Determinations

Chlorides

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_Chlorides%20Outlier%20Calculations_20230317.pdf

Sulfates

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_Sulfates%20Outlier%20Calculations_20230317.pdf

TDS

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_TDS%20Outlier%20Calculations_20230317.pdf

RP Calculations

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_Updated%20Minerals%20Calculations_20240722.pdf

According to the updated minerals calculations linked above, the unnamed tributary of Horsehead Creek has an IWC of 61.1/20.6/220.2 mg/l (Cl/SO4/TDS) at a total flow of 6.27 cfs. The IWCs for Horsehead Creek and Bayou Dorcheat were calculated using the methods in the UAA and are as follows:

Horsehead Creek:

$IWC_{chloride}$ = [(4.0*5) + (6.27*61.1)]/(4.0+6.27) = 39.4 mg/l <85 mg/l
$IWC_{sulfate}$ = [(4.0*13) + (6.27*20.6)]/(4.0+6.27) = 17.6 mg/l <37.2 mg/l
IWC_{TDS} = [(4.0*67) + (6.27*220.2)]/(4.0+6.27) = 160.5 mg/l<383 mg/l

Bayou Dorcheat:

$IWC_{chloride}$ = [(4.0*5) + (6.27*39.4)]/(4.0+6.27) = 26.0 mg/l <54 mg/l
$IWC_{sulfate}$ = [(4.0*13) + (6.27*17.6)]/(4.0+6.27) = 15.8 mg/l < 16 mg/l
IWC_{TDS} = [(4.0*67) + (6.27*160.5)]/(4.0+6.27) = 124.1 mg/l <250 mg/l

B. **Anti-backsliding**

The permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 C.F.R. § 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 § 402(o)(2), CWA § 303(d)(4), or 40 C.F.R. § 122.44(l)(2)(i).

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

C. **Limits Calculations**

1. Mass Limits:

In accordance with 40 C.F.R. § 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 C.F.R. § 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

Outfall 004

The mass limits for Total Recoverable Lead at Outfall 004 are based on the assigned WLA in the TMDL.

Mass limits for other parameters have not been included in the permit because the effluent flows are highly variable due to stormwater runoff and non-contact cooling water.

Internal Outfall 02A

BOD_5 mass limits have been continued from the previous permit and were calculated using the design flow of the sanitary wastewater treatment system (0.03 MGD) and the following equation:

lbs/day = concentration (mg/l) * flow (MGD) * 8.34

2. Daily Maximum Limits:

The daily maximum limit for TSS (Outfall 004) and BOD_5 (Internal Outfall 02A) are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control:

daily maximum limits = monthly average limits x 1.5 (BOD_5) and 1.8 (TSS)

The daily maximum limits for FCB (Internal Outfall 02A) and O&G (Outfall 004) are based on Rules 2.507 and 2.510, respectively.

The daily maximum limits for Total Recoverable Lead are based on the applicable TMDL.

D. **208 Plan (Water Quality Management Plan)**

The 208 Plan, developed by the DEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary. The 208 Plan is being updated to revise the facility flow from 2.38 MGD to 1.47 MGD.

E. **Applicable Effluent Limitations Guidelines**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines promulgated under 40 C.F.R. Part 415, Subpart AC – Inorganic Chemicals Manufacturing Point Source Category, Bromine Production Subcategory.

40 C.F.R. § 415.292 states that there shall be no discharge of process wastewater pollutants to navigable waters, except that residual brine and depleted liquor may be returned to the body of water from which the process brine solution was originally withdrawn.

F. **Priority Pollutant Scan (PPS)**

DEQ has reviewed and evaluated the effluent in accordance with the potential toxicity of each analyzed pollutant using the procedures outlined in the Continuing Planning Process (CPP).

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality Standards (AWQS), Rule 2 (Rule 2.508) and criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)."

Under Federal Regulation 40 C.F.R. § 122.44(d), as adopted by Rule 6, if a discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard, the permit must contain an effluent limitation for that pollutant. Effluent limitations for the toxicants listed below have been derived in a manner consistent with the Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA, March 1991), the CPP, and 40 C.F.R. § 122.45(c).

The following items were used in calculations:

Parameter	Value	Source
Discharge Flow = Q	1.47 MGD = 2.27cfs	Application
7Q10 Background Flow	0 cfs	U.S.G.S.
LTA Background Flow	0 cfs	TSD for WQ-based Toxics Control, p. 88
TSS	5.5 mg/l	CPP
Hardness as $CaCO_3$	31 mg/l	CPP

The following pollutants were reported above detection levels:

Pollutant	Concentration Reported, µg/l	MQL, µg/l
Total Rec. Arsenic	9.7[2]	0.5
Total Rec. Copper	4[2]	0.5
Total Rec. Lead	0.525[1]	0.5

[1] Geometric Mean of 13 data points from DMRs.
[2] Single data point from PPS/EPA Form 2C from application.

Instream Waste Concentrations (IWCs) were calculated in the manner described in Appendix D of the CPP and compared to the applicable Criteria. The following tables summarize the results of the analysis. The complete evaluation can be viewed on the Division's website at the following address:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_PPS%20with%20Updated%20Flow%20Rate_20240722.pdf

1. **Aquatic Toxicity Evaluation**

a. Acute Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Acute, µg/l	Acute, µg/l	
Total Rec. Copper	4	8.52	8.52	14.79	No
Total Rec. Lead	0.525	1.12	1.12	87.29	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Rule 2.508 unless otherwise specified.

b. Chronic Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Chronic, µg/l	Chronic, µg/l	
Total Rec. Copper	4	8.52	8.52	10.93	No
Total Rec. Lead	0.525	1.12	1.12	3.40	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Rule 2.508 unless otherwise specified.

DEQ has determined from the submitted information that the discharge does not pose the reasonable potential to cause or contribute to an exceedance above a listed Criteria.

Total Recoverable Lead limits based on the applicable TMDL are continued from the previous permit. The concentration limits are as follows.

Final Limits		
Substance	Monthly Average µg/l	Daily Maximum µg/l
Total Rec. Lead	3.41	7.62

2. **Human Health (Bioaccumulation) Evaluation**

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
Total Rec. Arsenic	9.7	20.66	20.66	1.4	Yes

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.

[2] Unless otherwise specified, criteria are adapted from "National Recommended Water Quality Criteria – Human Health Criteria Table," EPA. The respective WQC from the noted reference are Consumption of Organism Only values. The values from the reference are for a lifetime risk factor of 10^{-6}. These values have been multiplied by 10 to correspond to human health criteria lifetime risk factor of 10^{-5} as stated in Rule 2.508.

[3] Maximum Contaminant Level (MCL) specified in the National Primary Drinking Water Regulations.

As can be seen in the tables above, the calculated IWC for Arsenic is higher than the EPA Water Quality Criterion. A.C.A. § 8-4-216 authorizes the Division to require the submission of any information relevant to meeting the requirements of the Arkansas Water and Air Pollution Control Act. A requirement to monitor and report for Arsenic once per quarter for one year has been added to the permit so that, in the event that a WQS for Arsenic is added to Rule 2.508, data will be available to perform a reasonable potential analysis. This is in accordance with the procedure in Appendix D of the CPP (Appendix D, Part IV – Chemical Specific Standards and Criteria, Section E – Protection of Human Health Criteria of the Discharge Permit, Toxic Control Implementation Procedure).

12. **WHOLE EFFLUENT TOXICITY**

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited....." To ensure that the CWA's prohibitions for toxics are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants (49 FR 9016-9019, 3/9/84)." In support of the national policy, EPA Region 6 adopted the "Policy for Post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. In addition, DEQ is required under 40 C.F.R. § 122.44(d)(1), adopted by reference in Rule 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act.

The Regional policy and strategy are designed to ensure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State Water Quality Standard (WQS) resulting in non-conformance with the provisions of 40 C.F.R. §122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

Whole effluent toxicity (WET) testing has been established for assessing and protecting against impacts upon water quality and designated uses caused by the aggregate toxic effect of the discharge of pollutants. The stipulated test species, which are appropriate to measure whole effluent toxicity, are consistent with the requirements of the State Water Quality Standards. The WET testing frequency has been established to reflect the likelihood of ambient toxicity

and to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 C.F.R. § 122.48.

Implementation

Arkansas has established a narrative water quality standard under the authority of Section 303 of the CWA which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or waterbody, at the appropriate instream critical dilution. Pursuant to 40 C.F.R. § 122.44(d)(1)(v), DEQ has determined from the permittee's self-reporting that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative standard within the applicable State Water Quality Standards, in violation of Section 101(a)(3) of the Clean Water Act. Therefore, the permit must establish chronic effluent limitations following regulations promulgated by 40 C.F.R. § 122.44(d)(1)(v). These chronic effluent limitations (7-day NOEC) are applied at Outfall 004 on the effective date of the permit. For Outfall 004, the 7-day NOEC value for lethality shall not be less than 100% (Critical Dilution) and the 7-day NOEC value for sub-lethality shall not be less than 80%. WET testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The WET testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
Chronic WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs (ft^3/sec), chronic WET testing requirements will be included in the permit.

The calculations for dilution used for chronic WET testing are as follows:

Critical dilution (CD) = (Qd/(Qd + Qb)) × 100

Qd = Average flow = 1.47 MGD = 2.73 cfs
7Q10 = 0 cfs
Qb = Background flow = 0.67 × 7Q10 = 0 cfs
CD = (2.73) / (2.73 + 0) × 100 = 100%

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are 32%, 42%, 56%, 80%, and 100% (See the CPP). The low-flow effluent

concentration (critical dilution) is defined as 100% effluent. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 C.F.R. § 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be reported according to EPA-821-R-02-013, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing data submitted to the Division shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 C.F.R. § 122.62, as adopted by reference in APC&EC Rule 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8- 4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

The following information summarizes toxicity tests submitted by the permittee during the term of the current permit at Outfall 001.

Permit Number:	AR0038857	AFIN:	14-00028	Outfall Number:	004
Date of Review:	2/22/2024	Reviewer:	M. Barnett		
Facility Name:	Albermarle Corporation - Albemarle Corporation - South Plant				
Previous Dilution series:	32, 42, 56, 80, 100	Proposed Dilution Series:	32, 42, 56, 80, 100		
Previous Critical Dilution:	100	Proposed Critical Dilution:	100		
Previous TRE activities:	*C. dubia* TRE began 1/4/2021. Final report due 5/4/2023				

Frequency recommendation by species	
Pimephales promelas (Fathead minnow):	once per quarter
Ceriodaphnia dubia (water flea):	once per quarter

TEST DATA SUMMARY

	Vertebrate		Invertebrate		
TEST DATE	Lethal	Sub-Lethal	Lethal	Sub-Lethal	
	NOEC	NOEC	NOEC	NOEC	Lab & treatment
3/31/2019	100	100	100	**32**	
6/30/2019	100	100	100	**80**	BA UV Filtration
6/30/2019	100	100	100	**32**	AI UV Filtration
9/30/2019	100	100	100	100	AI
12/31/2019	100	100	100	**56**	AI
12/31/2019	100	100	100	100	BA UV Filtration
3/31/2020	100	100	100	100	AI
3/31/2020	100	100	100	100	BA UV Filtration
6/30/2020	100	100	100	**56**	AI
6/30/2020	**80**	**80**	100	**45**	BA UV Filtration
9/30/2020	100	100	100	100	AI
9/30/2020	100	100	100	**32**	BA UV Filtration
9/30/2020	100	100	100	100	BA UV Filtration
10/30/2020	100	100	100	**32**	AI UV Filtration
10/31/2020	100	100	100	**32**	BA UV Filtration
12/7/2020			100	**32**	AI
12/9/2020			100	**0**	BA UV Filtration
12/30/2020			100	**32**	AI
12/31/2020			100	**32**	BA UV Filtration
1/31/2021	100	100	100	**0**	AI
1/31/2021	100	100	100	**0**	BA UV Filtration
2/28/2021			100	**0**	AI
3/31/2021			100	**0**	AI
3/31/2021			100	**0**	BA
4/30/2021	100	**32**	100	**32**	AI
4/30/2021	100	100	100	**0**	BA
5/30/2021			100	**0**	BA
6/30/2021			100	**32**	AI
6/30/2021			100	**32**	BA
7/30/2021	100	100	100	**32**	AI
7/31/2021	100	100	100	**0**	BA
8/29/2021			100	**56**	AI
8/30/2021			100	**80**	BA
9/29/2021			100	**32**	AI
9/30/2021			100	**0**	BA
10/31/2021	100	100	100	**45**	AI
10/31/2021	100	100	100	**56**	BA UV Filtration
11/30/2021			100	**32**	AI
12/31/2021			100	**32**	AI
12/31/2021			100	100	BA UV Filtration
6/30/2022	100	**32**	100	**32**	AI
6/30/2022	100	100	100	**80**	BA

9/30/2022			100	100	AI
9/30/2022	100	100	100	100	BA
12/31/2022	100	**0**	100	100	AI
12/31/2022	100	100	100	100	BA
3/31/2023	100	100	100	100	EF
3/31/2023	100	100	100	100	BA
6/30/2023	100	100	100	100	BA
9/30/2023	100	100	100	**0**	EF
9/30/2023	100	100	100	100	BA
12/31/2023	100	100	100	100	EF
12/31/2023	100	100	100	100	BA
Failures noted in BOLD					
REASONABLE POTENTIAL CALCULATIONS					
	Vertebrate Lethal	**Vertebrate Sub-lethal**	**Invertebrate Lethal**	**Invertebrate Sub-Lethal**	
Min NOEC Observed	80	16	100	16	
TU at Min Observed	1.25	6.25	1.00	6.25	
Count	35	35	53	53	
Failure Count	1	4	0	36	
Mean	1.007	1.279	1.000	2.851	
Std. Dev.	0.042	0.999	0.000	1.959	
CV	0	0.8	0	0.7	
RPMF	0	1.5	0	1.4	
Reasonable Potential	0.000	9.375	0.000	8.750	
100/Critical dilution	1.000	1.000	1.000	1.000	
Does Reasonable Potential Exist	No	Yes	No	Yes	
PERMIT ACTION					
P. promelas Chronic - Limit 51714 Lethal not <100% and Sub-Lethal not <80%					
C. dubia Chronic - Limit 51710 added. Lethal not <100% and Sub-Lethal not <80%					

13. STORMWATER REQUIREMENTS

All stormwater runoff associated with industrial activity discharged by this facility is routed through Outfall 004. Therefore, only BMPs are required in Part II of the permit.

14. SAMPLE TYPE AND FREQUENCY

Outfall 004

It is recognized that the requirements for sample type and sampling frequency in the OWQ guidance memorandum "Recommended Monitoring Frequencies and Sample Types for NPDES Permits," April 14, 2022, would be three per week based on the highest monthly average flow of 1.47 MGD over the past two years. However, this memo was based on sanitary sewer and process wastewater discharges. The effluent from this outfall consists of the treated sanitary wastewater from Internal Outfall 02A, cooling tower blowdown, boiler blowdown, steam condensate, clean water car rinse (no chemicals), non-contact cooling water, and stormwater.

The volume of sanitary wastewater discharged through Internal Outfall 02A to the man-made marsh system associated with Outfall 004 is generally less than its design flow of 0.03 MGD

(approximately 1.6% of the effluent volume at Outfall 004). Therefore, the sample type and sampling frequency requirements should be based on the other waste streams at this outfall.

ARG250000, the general permit for non-contact cooling water, cooling tower blowdown, and boiler blowdown facilities located within the State of Arkansas, has requirements of twice per month (with the exception of flow) and grab samples (with temperature being required in-situ). ARG250000 requires flow to be measured twice per week instantaneously. Because most of the effluent types covered under AR0038857 matches what is covered under the general permit or is stormwater runoff, it is appropriate to base the monitoring frequencies and sample types on the general permit.

The OWQ will therefore use the monitoring frequency reduction memorandum to determine if any of the frequency requirements in ARG250000 can be reduced.

The flow and the pH frequencies and sample types will not be changing from the previous permit because the totalizing meter and pH meter are already in place.

The monitoring frequencies for Total Rec. Lead, O&G, and TSS will be reduced from the ARG250000 requirement of twice per month to the current permit requirement of once per quarter based on the performance based monitoring frequency reduction requirements.

The temperature monitoring frequency will be reduced to two per month to match the requirements of ARG250000 since the permittee was in compliance with the instantaneous maximum temperature limit for the past two years.

The minerals requirements are in the permit based on a UAA and the ensuing requirements in the CPP. As the permittee continues to show no reasonable potential for exceedances of the water quality standards, the frequency requirements will remain unchanged from the previous permit.

Grab samples are continued from the previous permit. The effluent is held for sufficient time in the man-made marsh so composite samples are not necessary to get a representative sample for testing purposes.

The monitoring frequency reduction worksheet can be found using the following link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0038857_Monitoring%20Frequency%20Reduction_20230317.pdf

Internal Outfall 02A

The sample types for BOD_5 and flow are based on the requirements in the April 2022 memo. The sample type for FCB is always required to be grab based on the test method.

The sampling frequencies will remain at once per quarter for BOD_5 and TSS and once per month for flow since this is an internal outfall with no applicable ELGs.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
OUTFALL 004				
Flow	once/day	totalizing meter	once/day	totalizing meter
TSS	once/quarter	grab	once/quarter	grab
O&G	once/quarter	grab	once/quarter	grab
Chlorides	once/quarter	grab	once/quarter	grab
Sulfates	once/quarter	grab	once/quarter	grab
TDS	once/quarter	grab	once/quarter	grab
DO	once/quarter	grab	once/quarter	grab
Total Rec. Lead	once/quarter	grab	once/quarter	grab
Total Rec. Arsenic[1]	once/quarter	grab	once/quarter	grab
Temperature	once/week	in-situ	two/month	in-situ
pH	continuous	recorder	continuous	recorder
INTERNAL OUTFALL 02A				
Flow	once/month	instantaneous	once/month	instantaneous
BOD_5	once/quarter	grab	once/quarter	grab
FCB	once/quarter	grab	once/quarter	grab

1. Monitoring and reporting requirements for Total Recoverable Arsenic is only required for the first four quarters of the permit.

15. PERMIT COMPLIANCE SCHEDULE

A Schedule of Compliance has not been included in this permit.

16. MONITORING AND REPORTING

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

17. SOURCES

The following sources were used to draft the permit:

A. Application No. AR0038857 received October 21, 2022.
B. Arkansas Water Quality Management Plan (WQMP).
C. APC&EC Rule 2.
D. APC&EC Rule 3.
E. APC&EC Rule 6, which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Rule 6.104.
F. 40 C.F.R. Parts 122 and 125.
G. 40 C.F.R. Part 415

H. Discharge permit file AR0038857.
I. Discharge Monitoring Reports (DMRs).
J. "2018 Integrated Water Quality Monitoring and Assessment Report," DEQ.
K. "2018 List of Impaired Waterbodies (303(d) List)," DEQ, May 2020.
L. *TMDLs for Chloride, Copper, Dissolved Oxygen, Lead, pH Sulfate, TDS, and Turbidity in the Bodcau Creek and Dorcheat Bayou Watersheds, Arkansas*.
M. "Identification and Classification of Perennial Streams of Arkansas," Arkansas Geological Commission.
N. USGS StreamStats web-based program.
O. Continuing Planning Process (CPP).
P. "OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits" documented in a June 12, 2020 Interoffice Memorandum.
Q. OWQ guidance memorandum "Recommended Monitoring Frequencies and Sample Types for NPDES Permits," April 14, 2022.
R. Technical Support Document for Water Quality-based Toxic Control.
S. Inspection Report dated June 2, 2022.
T. CAO LIS-22-022.
U. Compliance Review Memo from Tiana Toups to Loretta Carstens, P.E. dated January 23, 2023.
V. Planning Review Memo dated January 25, 2023.
W. NPDES Permit Rating Spreadsheet (MRAT) dated February 27, 2023.

18. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on August 11, 2024. The last day of the comment period was thirty (30) days after the publication date. No public comments were received on 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.

19. PERMIT FEE

In accordance with Rule 9.403(D), the annual fee for the permit is calculated from the Average Flow (Q, in MGD) as follows:

Fee = \$200 + (5,600 × Q) = \$200 + (5,600 × 1.47) = \$8,432

This facility is billed under Fee Code U.

20. **POINT OF CONTACT**

For additional information, contact:

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