

Permit No. 5321-W  
AFIN 60-01021

**AUTHORIZATION FOR A NO-DISCHARGE WATER PERMIT UNDER 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. Sec. 8-4-101 *et seq.*)

**Little Rock Water Reclamation Authority - Fourche Creek Water Reclamation  
Facility**

is authorized to land apply municipal biosolids from the Fourche Creek Water Reclamation Facility on sites listed in Condition No. 6 of Part II of the permit in Pulaski County, AR.

Operation shall be in accordance with all conditions set forth in this permit.

Effective Date: April 1, 2021

Expiration Date: March 31, 2026



02/25/2021

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Robert E. Blanz Ph.D., P.E.  
Associate Director, Office of Water Quality  
Division of Environmental Quality

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Issue Date

**Part I**  
**PERMIT REQUIREMENTS**

**LIMITATIONS AND MONITORING REQUIREMENTS:**

The following tables detail the constituent limits, monitoring frequencies, and the requirements for reporting results to Division of Environmental Quality (DEQ) for each respective parameter listed in the table heading.

<b>TABLE I</b>			
<b>Biosolids Analysis, Reporting, and Record Keeping</b>			
Parameter	Ceiling Concentrations (mg/kg) <sup>1</sup>	Cumulative Pollutant Loading Rate (lb/ac) <sup>4</sup>	Monitoring Frequency
Arsenic	75	37	Annually, prior to the 1 <sup>st</sup> application of the calendar year
Cadmium	85	35	
Copper	4300	1350	
Lead	840	270	
Mercury	57	15	
Molybdenum	75	Report	
Nickel	420	378	
Selenium	100	90	
Zinc	7500	2520	
Polychlorinated Biphenyls (PCB's)	50	N/A	
Parameter	Maximum Limit	Reporting Units	Monitoring Frequency
Total Solids	Report	Percentage (%)	Annually, prior to the 1 <sup>st</sup> application of the calendar year
Electrical Conductivity		µmhos/cm	
pH		S.U.	
Nitrate Nitrogen		mg/kg <sup>1</sup>	
Nitrite Nitrogen			
Ammonia Nitrogen			
Total Kjeldahl Nitrogen			
Total Phosphorus			
Total Potassium			
Sodium Absorption Ratio (SAR)			
Total Volume of Biosolids Applied		Dry tons/acre/year	Prior to each application
Nitrogen Application Rate	<sup>2,3</sup> Depends on Crop	Lbs N/acre/year	

<sup>1</sup> Dry-weight Basis

<sup>2</sup> The land application of biosolids must not exceed the limits for Nitrogen Application Rate or Total Volume of Biosolids Applied, whichever is less.

<sup>3</sup> Refer to Condition No. 3 of Part II of the permit.

<sup>4</sup> Refer to Condition No. 5 of Part II of the permit.

<b>TABLE II</b>		
<b>Soils Analysis, Reporting, and Record Keeping</b>		
Parameter	Limit (Reporting Units)	Monitoring Frequency
Electrical Conductivity	4.0 (mmhos/cm)	Annually, Prior to the 1 <sup>st</sup> application of the calendar year per application site <sup>2</sup>
Cation Exchange Capacity	Report (meq/100g)	
pH <sup>1</sup>	Report (s.u.)	
Sodium Adsorption Ratio (SAR)	12.0 (unitless)	
Nitrate-Nitrogen	Report (mg/kg)	Once every five (5) years per application site <sup>2</sup>
Phosphorus		
Potassium		
Arsenic		
Cadmium		
Copper		
Lead		
Mercury		
Molybdenum		
Nickel		
Selenium		
Zinc		

<sup>1</sup> If the resulting pH is 5.7 or lower, lime must be applied in accordance with guidance from the University of Arkansas Cooperative Extension Service.

<sup>2</sup> One composite soil sample must be taken for every 40 acres.

**Part II**  
**Specific Conditions**

1. This permit is for the land application of municipal biosolids from the Fourche Creek Water Reclamation Facility.
2. The land application operation shall be managed in accordance with the June 7, 2019, Waste Management Plan (WMP) and additional information received on August 12, 2020. If the WMP is inconsistent with this permit, the land application operation shall be managed in accordance with the terms of the permit and the WMP shall be revised to conform to the permit conditions.
3. Plant Available Nitrogen (PAN) shall be calculated using the following equations:

<b>PAN Equations</b>	
For Surface applied biosolids, PAN(mg/kg)	$0.3(\text{TKN} - \text{NH}_3) + 0.5\text{NH}_3 + \text{NO}_3 + \text{NO}_2$
For Subsurface applied or Incorporated biosolids, PAN(mg/kg)	$0.3(\text{TKN} - \text{NH}_3) + \text{NH}_3 + \text{NO}_3 + \text{NO}_2$
Conversion from PAN(mg/kg) to PAN(lbs/Dry Ton(DT))	$0.002 * \text{PAN}(\text{mg}/\text{kg})$

The biosolids must be applied at a rate (calculated in units of DT/acre) that provides a quantity of PAN (lbs N/acre) that is equal to or less than the nitrogen uptake rate of the cover crop (lbs/acre). See the table below for a list of Nitrogen uptakes for crops authorized for land application under this permit. Any crop not listed in the following table may be added to the permit by requesting a permit modification.

<b>Nitrogen Uptake of Cover Crops</b>	
Crop Name	Uptake (lbs/acre)
Bermuda	300
Soybeans	226
Rice	124

4. Land application sites shall maintain adequate vegetation to ensure the nitrogen uptake rate of the cover crop used to calculate the limit in Condition No. 3 is accurate. Land application sites containing forage crops shall maintain 100% coverage with minimum of 80% density. Land application site containing row crops shall be planted in a manner to produce a typical yield.
5. The permittee shall not land apply biosolids in a manner that would exceed the Cumulative Pollutant Loading Rate in Table I of Part I of the permit. All records demonstrating compliance with this condition shall be made available to DEQ personnel upon request. Pollutant Loading Rate shall be calculated per application event using the following equation. Cumulative Pollutant Loading Rate is determined by cumulative summation of the each application event.

$$\frac{\text{Pounds}}{\text{Acre}} = \text{Concentrations} \left( \frac{\text{mg}}{\text{kg}} \right) * 0.002 * \text{Application Rate} \left( \frac{\text{DT}}{\text{acre}} \right)$$

6. Land application sites are as follows:

Name	Section(s)	Township	Range	Acreage	Latitude	Longitude
JT-3	27	1N	11W	79.87	34° 40' 54.12"N	92° 10' 50.54"W
JT-4	10	1S	11W	36.25	34° 38' 58.92"N	92° 11' 2.30"W
JT-5	10	1S	11W	161.50	34° 38' 32.08"N	92° 11' 9.14"W
D-1	33	1N	11W	87	34° 40' 4.50"N	92° 11' 25.98"W

7. Each land use agreement must be effective for the duration of the permit term. A copy of the signed land use agreement must be available on site during land application operations. If a land use agreement becomes void during the permit term, the permittee must notify the DEQ and request a modification of the permit.
8. The permittee shall determine if the land application sites are currently permitted or in use by another user. In the event that DEQ determines that any land application site under this permit is permitted for land application under another Office of Water Quality permit, DEQ may void this permit and enforcement action may be taken.
9. Biosolids shall be land applied by subsoil injection or surface applied. Surface applied biosolids must be evenly distributed over the entire application area. Incorporated biosolids shall be incorporated into the soil within 24-hours of application.
10. Biosolids shall not be discharged from this operation to the waters of the state or onto the land in any manner that may result in runoff to the waters of the state.
11. The allowable slope of land application site depends on biosolids application method. Biosolids shall not be applied to the land application site with slopes greater than allowed by the table below.

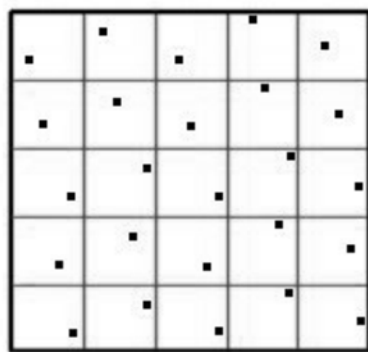
Maximum Slope %	Acceptable Application
6	<ul style="list-style-type: none"> <li>• Surface application of liquid biosolids</li> <li>• Injection of liquid biosolids</li> <li>• Surface application of dewatered biosolids</li> <li>• Surface application of dewatered biosolids with immediate incorporation</li> </ul>
12	<ul style="list-style-type: none"> <li>• Injection of liquid biosolids</li> <li>• Surface application of dewatered biosolids</li> <li>• Surface application of dewatered biosolids with immediate incorporation</li> </ul>
15	<ul style="list-style-type: none"> <li>• No application of liquid biosolids without extensive runoff control</li> <li>• Surface application of dewatered biosolids with immediate incorporation</li> </ul>

12. Land application is prohibited when the soils are saturated; frozen; covered with ice or snow; during precipitation events; or when precipitation is imminent (greater than a 50% chance of precipitation predicted by the nearest National Weather Service station) within a 24-hour period. All records demonstrating compliance with this condition shall be made available to DEQ personnel upon request and submitted to DEQ as part of the annual report.

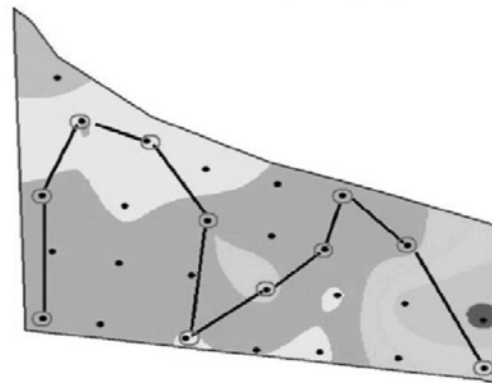
13. Land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.
14. Biosolids shall not be land applied on sites that are projected to be impacted by floodwaters from the Arkansas River. Prior to land application the permittee shall collect and maintain records that document the Arkansas River elevation is not expected to reach the action stage of eighteen (18) feet at the Arkansas River at Little Rock gauge station (LITA4) according to the National Weather Service. Land application shall not occur within one (1) week of an action stage of eighteen (18) feet or higher at the Arkansas River at Little Rock gauge station (LITA4).
15. The permittee shall not cause or contribute to the taking of any endangered or threatened species of plant, fish, or wildlife. Land application shall not result in the destruction or adverse modification of the known critical habitat of endangered or threatened species as identified in 50 C.F.R. Part 17.
16. Biosolids shall not be land applied within 100 feet of streams including intermittent streams, ponds, lakes, springs, sinkholes, rock outcrops, wells, and water supplies; or within 300 feet of extraordinary resource waters as defined by the Arkansas Pollution Control and Ecology Commission (APC&EC) Rule 2. Buffer distances for streams, ponds, and lakes must be measured from the ordinary high water mark.
17. Biosolids shall not be land applied within 50 feet of property lines or 500 feet of neighboring occupied buildings existing as of the date of the permit. The restrictions regarding property lines or neighboring buildings may be waived if the adjoining property is also approved as a land application site under a permit issued by DEQ or if the adjoining property owner consents in writing.
18. All boundaries, cited in Conditions 16 and 17 of Part II of the permit, must be flagged prior to and present during any land application event for all land application sites.
19. The biosolids generator must issue a signed certification to EPA Region 6 stating that the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits have been met. The permit incorporates the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits set forth in 40 C.F.R. Part 503.32, 40 C.F.R. Part 503.33, and 40 C.F.R. Part 503.13. All the above information must be made available to the land-applicator before the biosolids materials are delivered. Concurrently, a signed copy of each certification must be also submitted to the DEQ Office of Water Quality and that documentation should be included in the annual reports.
20. The containers used for the transportation of the biosolids must be of the closed type. Transportation equipment must be leak-proof and kept in sanitary condition at all times. Biosolids must be enclosed or covered as to prevent littering, vector attraction, or any other nuisances. Transportation of the biosolids must be such that will prevent the attraction, harborage, or breeding of insects or rodents.
21. The land application sites shall have the soils tested for the parameters listed in Table II of Part I of the permit. Soil samples shall be collected according to the following method:
  - a. One composite soil sample shall be representative of  $\leq$  40 acres.
  - b. Identify representative sampling areas/zones that are uniform in soil and previous management history. Soils that are contained within the same soil association according to the USDA Soil Survey are considered uniform for the purposes of this permit. These areas

shall be identified on a site map. The areas shall remain the same between each sampling event.

- c. Using a clean soil probe, soil auger, or spade, collect a minimum of 20 individual subsamples to a 4-inch depth per sample area in a random zigzag or grid pattern (see Fig. 1 below) in accordance with the sampling locations on the site map. If using a spade, avoid wedge shaped samples. One composite sample must be taken for every land application site identified in Condition 6 above.
- d. Combine individual subsamples in a clean plastic bucket and mix thoroughly. Place a subsample of the mixed composite in a clean soil box and label with the field ID name, and permittee information. Subsamples shall be representative of each land application site.



Grid Pattern



Zig Zag

**Figure 1. Representative Soil Sampling of Land Application Area Patterns**

22. The permittee shall provide annual training before any person that will be responsible for land applying biosolids or any person that will be overseeing the land application of biosolids can land apply the biosolids under this permit. The annual training shall consist of, at a minimum, training on all permit conditions and WMP. The permittee shall maintain written certification that any person that will be responsible for land application or any person that will be overseeing the land application is familiar with the permit and WMP requirements. The permittee shall submit written records of the annual trainings and training certifications to DEQ as part of the annual report. All certifications shall be made available to DEQ personnel on request and maintained for three (3) years.
23. Annual Reports are due by May 1st of each year for the previous permitted months from January to December (i.e. Annual report is due on May 1st, 2022 for the 2021 calendar year). Annual reports shall be sent to DEQ and to the owner of the land receiving biosolids and include the following:
  - a. land application dates;
  - b. land application locations;
  - c. quantities of biosolids applied in dry tons per acre per year and in gallons per acre per year;
  - d. methods of application;
  - e. cover crop grown on each field;
  - f. amounts of nitrogen applied;
  - g. total elements added (in that particular year) in lbs per acre;
  - h. total elements applied to date;

- i. copies of the biosolids analysis, soil analyses, and the biosolids certification;
- j. map of locations of soil subsamples;
- k. records of compliance with Specific Condition 12 for land application dates;
- l. records of annual trainings and training certifications.

The annual reports shall be submitted to the following address:

Division of Environmental Quality  
Office of Water Quality, No-Discharge Section  
5301 Northshore Dr.  
North Little Rock, Arkansas 72118

Or

[Water-permit-application@adeq.state.ar.us](mailto:Water-permit-application@adeq.state.ar.us)



**Part III**  
**Standard Conditions**

**1. Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.) and is grounds for civil and administrative enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

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

The Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.) provides that any person who violates any provision 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 both 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**

- A. This permit may be modified; revoked and reissued; or terminated for cause including, but not limited to the following:
- i. Violation of any terms or conditions of this permit;
  - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
  - iii. 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; or
  - iv. Failure of the permittee to comply with the provisions of Arkansas Pollution Control and Ecology Commission (APC&EC) Rule 9 (Fee Rule).
- B. The filing of a request by the permittee for a permit modification; revocation and reissuance; termination; or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

**4. Civil and Criminal Liability**

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 statutes or rules that 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.).

**5. 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 under Section 311 of the Clean Water Act and Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

**6. 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 rule.

**7. 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 rules.

**8. 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.

**9. 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 no-discharge permits as described in APC&EC Rule 9 (Fee Rule). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to revoke this permit.

**10. 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) that 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 that 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 and trained operating staff that is duly qualified to carry out the operation, maintenance, and testing functions required to insure compliance with the conditions of this permit.

**11. Duty to Mitigate**

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

**12. Removed Substances**

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in an approved manner such as to prevent any pollutant from such materials from entering the waters of the state.

**13. Reporting of Violations and Unauthorized Discharges**

- A. Any violations to this permit must be reported to the Enforcement Branch of the DEQ-OWQ immediately (within 24 hours). Any leaks or seeps shall be reported to the DEQ-OWQ and appropriately corrected. Any discharge from the fluids storage system such as an overflow, a broken pipe, etc., shall be immediately reported to the DEQ-OWQ.
- B. The operator shall visually monitor and report immediately (within 24 hours) to the Enforcement Branch any unauthorized discharge from any facility caused by dike or structural failure; equipment breakdown; human error; etc., and shall follow up with a written report within five (5) calendar days of such occurrence. The written report shall contain the following:
  - i. A description of the permit violation and its cause;
  - ii. The period of the violation, including exact times and dates;
  - iii. If the violation has not been corrected, the anticipated time expected to correct the violation; and
  - iv. Steps taken or planned to reduce, eliminate, and prevent the recurrence of the violation.
- C. Reports shall be submitted to the Enforcement Branch at the following address:

Division of Environmental Quality  
Office of Water Quality, Enforcement Branch  
5301 Northshore Dr.  
North Little Rock, Arkansas 72118  
Fax (501) 682-0880

Or

[Water-enforcement-report@adeq.state.ar.us](mailto:Water-enforcement-report@adeq.state.ar.us)

**14. Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.) 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.

**15. Laboratory Analysis**

All laboratory analyses submitted to the OWQ shall be conducted by a laboratory accredited by Arkansas Department of Energy and Environment (ADEE) under Ark. Code Ann. § 8-2-201 *et*

*seq.* Analyses for the permittee's internal quality control or process control do not need to be performed by an ADEE-accredited laboratory.

**16. Retention of Records**

The permittee shall retain records of all monitoring information, 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.

**17. 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 individuals(s) who performed the sampling or measurements;
- C. The date(s) the analyses were performed;
- D. The individual(s) who performed the analyses;
- E. The analytical techniques or methods used; and
- F. The measurements and results of such analyses.

**18. 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 any substances or parameters at any location.

**19. Planned Changes**

The permittee shall give notice and provide the necessary information to the Director for review and approval prior to any planned physical alterations or additions to the permitted activities.

**20. Anticipated Noncompliance**

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

**21. 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.

**22. Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information that 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.

**23. 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. Conditions of this permit will continue in effect past the expiration date pending issuance of a new permit, if:

- A. The permittee has submitted a timely and complete application; and
- B. The Director, through no fault of the permittee, does not issue a new permit prior to the expiration date of the previous permit.

**24. Signatory Requirements**

- A. All applications, reports or information submitted to the Director shall be signed and certified. All permit applications shall be signed as follows:
  - i. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - a. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
    - b. The manager of one or more manufacturing, production, or 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 rules; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
  - ii. For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or

- iii. For a municipality, State, Federal, or other public agency; by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
  - a. The chief executive officer of the agency, or
  - 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:
  - i. The authorization is made in writing by a person described above.
  - ii. 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); and
  - iii. The written authorization is submitted to the Director.
- C. 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.”

**25. Availability of Reports**

Except for data determined to be confidential under the Arkansas Trade Secrets Act (Ark. Code Ann. § 4-75-601 et seq.), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of DEQ. The name and address of any permit applicant or permittee, permit applications, and permits shall not be considered confidential.

**26. 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 and/or criminal penalties.

**27. 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 statute, ordinance, policy, or rule.

**Part IV**  
Definitions

“**Act**” means the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 *et seq.*) as amended.

“**Annual Pollutant Loading Rate**” means the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

“**APC&EC**” means the Arkansas Pollution Control and Ecology Commission.

“**Application Site or Land Application Site**” means all contiguous areas of a users' property intended for sludge application.

“**Available Acreage**” means total acreage minus buffer zones.

“**Biosolids**” means any sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

“**Cumulative Pollutant Loading Rate**” means the maximum of an inorganic pollutant (dry-weight basis) that is applied to a unit area of land.

“**Department**” means the Department of Energy and Environment.

“**Director**” means the Director of the Division of Environmental Quality.

“**Division or DEQ**” means the Division of Environmental Quality.

“**Dry weight-basis**” means 100 percent solids (i.e., percent moisture).

“**Land application**” means the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the land so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the sludge).

“**OWQ**” means the Division of Environmental Quality - Office of Water Quality.

“**Ordinary High Water Mark**” means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a cleat, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

“**Pathogen**” means an organism that is capable of producing an infection or disease in a susceptible host.

“**Pollutant Limit**” means a numerical value that describes the maximum amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the maximum amount of a pollutant that can be applied to a unit area of land (e.g., pounds per acre); the maximum density of a microorganism per unit amount of sewage sludge (e.g., Most Probable Number per gram of total solids); the maximum volume of a material that can be applied to a unit area of land (e.g., gallons per acre); or the maximum amount of pollutant allowed in plant tissue (e.g., parts per million).

“**Runoff**” means rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.

“**Sewage sludge**” means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in a Treatment

Works. Sewage sludge includes, but is not limited to, domestic septage, scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the incineration of sewage sludge or grit and screenings generated during preliminary treatment of domestic sewage in a Treatment Works. These must be disposed of in accordance with 40 CFR Part 258.

**“Total solids”** means the materials in the sewage sludge that remain as residue if the sludge is dried at 103 to 105 degrees Celsius.

**“Vector Attraction”** means the characteristic of sewage sludge that attracts rodents, flies, mosquitoes or other organisms capable of transporting infectious agents.

**“Volatile Solids”** means the amount of the total solids in sewage sludge lost when the sludge is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

**“mg/kg”** means milligram per kilogram.

**“NH<sub>3</sub>”** means Ammonia Nitrogen.

**“NO<sub>3</sub> + NO<sub>2</sub>”** means Nitrate + Nitrite Nitrogen.

**“PAN”** means Plant Available Nitrogen.

**“TKN”** means Total Kjeldahl Nitrogen.

**“s.u.”** shall mean standard units.

**QUARTERLY:**

(1) is defined as 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) is defined as 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 May through July, August through October, November through January, and February through April.

**SEMI-ANNUAL:**

is defined as 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 or twice/year.

**ANNUAL or YEARLY**

is defined as 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.



## STATEMENT OF BASIS

This Statement of Basis is for information and justification of the permit limits only and is not enforceable. This permit decision is for issuance of a No-Discharge operation under permit number 5321-W and AFIN 60-01021.

### 1. Permitting Authority

Division of Environmental Quality  
Office of Water Quality  
5301 Northshore Dr.  
North Little Rock, Arkansas 72118-5317

### 2. Applicant

Little Rock Water Reclamation Authority  
11 Clearwater Drive  
Little Rock, AR 72204

### 3. Facility Location

The land application sites are designated for biosolids generated by: Fourche Creek Water Reclamation Facility, 9500 Birdwood Dr., Little Rock, AR, 72206 in Pulaski County. The Fourche Creek Water Reclamation Facility is located at the following coordinates:

Latitude: 34° 41' 52.24" N; Longitude: 92° 9' 58.2" W

The land application sites are listed in the permit, Specific Condition No. 6.

### 4. Waterbody Evaluation

The land application sites are located in Stream Segment 3C of the Arkansas River basin, which is not in the Nutrient Surplus Area. Surrounding areas were evaluated to determine if any Extraordinary Resource Waters (ERWs), Ecologically Sensitive Waterbodies (ESWs), Natural and Scenic Waterways (NSW), or waterbodies in the 2016 ADEQ 303(d) list of impaired waterbodies in the State of Arkansas are near the land application sites. The waterbody evaluation was determined that one of the land application sites is approximately 1.5 miles from Fourche Creek, which is a Category 5 stream impaired for dissolved oxygen, temperature, and siltation/turbidity due to surface erosion. The runoff from the land application sites will not flow in the direction of Fourche Creek and no other impaired streams are within 10 miles of the land application sites. The land application sites meet the required setbacks; therefore, no additional permit requirements are necessary.

### 5. Consultant for this Facility

Brad Wingfield, P.E.  
PMI  
3512 S. Shackelford Rd.  
Little Rock, AR 72205

**6. Permit History**

An application for permit coverage for the land application of biosolids was received on November 14, 2018. Its withdrawal was approved via a withdrawal letter dated January 22, 2019. A new application was received on June 7, 2019, with additional information received on August 21, 2020.

**7. Applicant Activity**

Under the standard industrial classification (SIC) code 4941 or North American Industry Classification System (NAICS) code 221310, the applicant's activities are the operation of a sewerage system. This permit is for the land application of municipal biosolids.

**8. Biosolids Application Method**

Biosolids are collected in a series of four holding lagoons located at the Fourche Creek Water Reclamation Facility. These biosolids are a combination of co-mingled sludge generated at the Fourche Creek, Adams Field, and Little Maumelle facilities and an industrial waste constituent that is fed directly into the anaerobic digestion process. The material is stored in four storage basins at the Fourche Creek Water Reclamation Facility. Biosolids produced by this facility are considered Class B biosolids.

A pump will be used to remove biosolids from the lagoons. The biosolids will be transported via tanker truck to the land application sites. At the site, biosolids will be distributed onto the property at the approved rate using a surface spreader.

**9. Total Available Acreage**

The permittee has 364.62 acres available to land apply the biosolids. The application of biosolids is limited by 40 C.F.R. Part 503 ceiling concentration limits, 40 C.F.R. Part 503 cumulative pollutant loading, plant available nitrogen (PAN) equation and the nitrogen uptake rate of the cover crop, refer to Condition No. 3 of Part II of the permit.

**10. Additional Site Information**

Little Rock Water Reclamation Authority also has maintains NPDES Permits under Permit Numbers AR0040177, AR0040177C, AR0050849, and ARR001276.

**11. List of all Land Application Sites**

See Condition No. 6 of Part II of the permit.

**12. Basis for Permit Conditions**

The Division of Environmental Quality has made a determination to issue a permit for the no-discharge facility as described in the application and waste management plan. Permit requirements and conditions are authorized pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq. and Ark. Code Ann. § 8-4-201 et seq.) and rules promulgated thereunder.

Permit conditions, limits, reporting requirements, and justifications are listed as follows:

A. Part I—Permit Requirements

i. Monitoring Frequency

The monitoring frequency of once annually prior to the first land application is to ensure that a representative sample of what is being applied to the land is measured and recorded. In order to ensure over application of nutrients does not occur, the total volume of biosolids and nitrogen application rate must be measured and recorded daily. The loading rates and application rates shall be calculated using the biosolids analysis and the volume of biosolids applied. The parameters that must be measured at this frequency can be compared to the soil parameters if a problem arises to determine if the land application is the pollutant source.

Some soil parameters only need to be measured once every 5 years because annual measurements do not show a significant accumulation.

ii. Biosolids Monitoring and Reporting Requirements

a. Limits and reporting requirements for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc in the biosolids

The associated limits and Cumulative Pollutant Loading Rates (CPLRs) are adapted from EPA's risk assessment Title 40 of the Code of Federal Regulations (C.F.R.) Part 503 rule that governs the land application of sewage sludge. This assessment considered 14 different pathways of exposure to highly exposed individuals, including humans, animals (including small organisms), and plants. These limits minimize the potential for the accumulation of metals in soils to concentrations that could have adverse effects on the environment.

b. Limit for polychlorinated biphenyls (PCBs) concentration in the biosolids

Biosolids can contain trace amounts of PCBs. The content of PCBs in biosolids to be land applied is limited to a maximum of 50 mg/kg under 40 C.F.R. Part 761. Annual reporting requirements for PCBs were included to verify compliance with the permit.

c. Reporting requirements for percent total solids in the biosolids

This parameter is required to convert the biosolids analysis values between a wet and dry basis.

d. Reporting requirements for pH of the biosolids

The pH of the biosolids must be reported to ensure that it will not negatively impact the pH of the soil. While a limit has not been implemented in the permit cycle, DEQ will review this information and may implement limits on pH in the future, if deemed necessary.

e. Reporting requirements for all nitrogen compounds in the biosolids

These concentrations are required to calculate the plant available nitrogen to comply with Condition No. 3 of Part II of the permit.

f. Reporting requirements for Sodium Adsorption Ratio (SAR) in the biosolids

SAR is a measure of sodicity hazard commonly used to evaluate irrigation water and soils for agricultural use. Because the biosolids will be land applied, the SAR needs to be evaluated to show the biosolids is acceptable for use. According to the *Practical Handbook of Disturbed Land Revegetation* (Munshower, 1994), when the SAR rises above 18 in the biosolids, serious physical soil problems arise and plants have difficulty absorbing water.

g. Reporting requirements for the electrical conductivity in the biosolids

The analysis of electrical conductivity is the measurement of the salinity of the biosolids. Over application of salt could affect plant growth. According to *Wastewater Engineering Treatment and Reuse, 4<sup>th</sup> Edition*, salts tend to concentrate in the root zone. With an increase in soil salinity in the root zone, plants expend more of their available energy on adjusting the salt concentration within the tissue to obtain needed water from the soil. Consequently, less energy is available for plant growth. While a limit has not been implemented in the permit cycle, DEQ will review this information along with the electrical conductivity of the soil and may implement limits on electrical conductivity in the future, if deemed necessary.

h. Total Volume of Biosolids Applied

The total volume of biosolids applied is also needed to calculate the loading of metals and nutrients to the land application site.

i. Nitrogen Application Rate

Land application of the biosolids covered under this permit is restricted by the nitrogen application rate. The nitrogen application rate is the amount of nitrogen applied to the land in pounds/acre/year. Using the nitrogen components of the biosolids analysis and the volume of biosolids applied, the nitrogen application rate shall be calculated using the equations provided in Condition No. 3 of Part II of the permit. In order to ensure the application of biosolids will not exceed the Plant Available Nitrogen (PAN) limit for the cover crop identified in Condition No. 3 of Part II of the permit, the nitrogen application rate must be calculated prior to each application.

iii. Soil monitoring and reporting requirements

a. Limit for the electrical conductivity of the soil

The measurement of the electrical conductivity (EC) of the soil is used to determine the salinity or the amount of salts in the soil. In *Soils: an Introduction to Soils and Plant Growth*, an EC of 4.0 mmhos/cm or less is considered normal. Once the EC exceeds 4.0

mmhos/cm, the soil becomes saline. Saline soils are known to reduce plant growth and affect soil permeability.

b. Reporting requirements for pH of the soil

Soil pH must be monitored to ensure compliance with Table II of Part I of the permit. The acidic limit of 5.7 was adapted from the University of Arkansas Cooperative Extension Service (UAEX) Self-study Guide 8: Soil Fertility Management in Pastures Essential Nutrient for Plant Growth to maintain an optimal pH for plant growth. Also when the pH becomes too low, heavy metals are more soluble and therefore more susceptible to leaching to the groundwater.

c. Reporting requirements for Sodium Adsorption Ratio (SAR) in the soil

In addition to evaluating SAR in the biosolids, it should also be monitored in the soils of the application site. According to the *Practical Handbook of Disturbed Land Revegetation* (Munshower, 1994), when the SAR rises above 12 to 15 in the soil serious physical soil problems arise and plants have difficulty absorbing water. According to the 2009 ADEQ Landfarm Study, University of Arkansas soil scientist, Dr. Kristofor Brye, recommends that the SAR in soil be less than 12. SAR values above this range are considered undesirable conditions for plant growth. High sodium content disperses the soil and causes it to crust. Sodium also negatively influences the ability of water to infiltrate the soil.

d. Reporting requirements for cation exchange capacity, nitrate-nitrogen, phosphorus, and potassium in soils

These parameters are indicators of soil quality. The chemical condition of soil affects soil-plant relations, water quality, buffering capacities, availability of nutrients and water to plants and other organisms, mobility of contaminants, and some physical conditions. (USDA Natural Resources Conservation Service "Indicators for Soil Quality Evaluation" April 1996.) Reporting requirements are included to verify that problems from over-application of biosolids or waste sources are not occurring. If results indicate that soil concentrations have increased, DEQ may require cessation of land application activities, further testing, or remediation activities.

e. Reporting requirements for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc in soils

The list of metal cations was adapted from 40 C.F.R. Part 503 for the land application of sewage sludge. Limits were not established due to the variability of analyzing the concentrations of these metals. Reporting requirements are included to verify that metals from land application of biosolids or waste sources are not being applied at a rate that causes accumulation of metals to levels that could have adverse effects on the environment. If results indicate that soil concentrations have increased, DEQ may require cessation of land application activities, further testing, or remediation activities.

B. Part II—Specific Conditions

i. Plant Available Nitrogen (PAN) application limit

DEQ has provided the proper Plant Available Nitrogen (PAN) equation in order to ensure the permittee does not exceed the nitrogen uptake of the cover crop. Any land application of biosolids is limited by the nitrogen uptake of the cover crop and the PAN. The application rate is designed to provide the amount of nitrogen needed by the crop or vegetation and reduce the risk of nutrients running off into the waters of the state.

ii. Vegetation Cover Requirement

In order to ensure proper uptake of nitrogen, the land application site shall maintain 100% vegetative coverage with a minimum of 80% density. Furthermore, the vegetative coverage and density is also used for stabilization purposes to reduce the risk of soil erosion and runoff.

iii. Cumulative Loading Rate

The Office of Water Quality has provided the proper Cumulative Pollutant Loading Rate equation in order to ensure the permittee does not exceed the metal loading rate. Land application of biosolids is limited by the metal loading on the soils. The application rate is designed to be protective of the environment and has been adapted from 40 C.F.R. Part 503.

iv. Land Use Agreement

Maintaining a land use agreement will aid in the prevention of over application of nutrients from multiple sources by acknowledging that a sole permittee has permission to land apply to the owner's field(s).

v. Permit termination if the land application site is currently permitted under a previously issued permit

A site covered in more than one permit is at risk of over application of nutrients and metals. This condition encourages the applicant to confirm with the landowner that the site is not currently covered under another active permit before permitting the site.

vi. Even Application

In order to avoid over application to one area of the land application site, the biosolids shall be distributed evenly over the entire land application site. If the biosolids are over applied to one portion of the application site, there is potential for over application on that portion of the site and potential for the biosolids to runoff to the waters of the State.

vii. No runoff or discharge requirement

A discharge from this site may result in pollutants entering the waters of the state in violation of Ark. Code Ann. § 8-4-217. Specific land application method requirements including even surface application or subsoil injection and precipitation and moisture limitations, are to ensure that no runoff containing potential pollutants will enter the waters of the state. These conditions are adaptations of APC&EC Rule 5.406 (A) & (B).

viii. Maximum allowable slope for the land application area

In order to protect waters of the state, additional measures must be taken to ensure contamination via runoff is prevented. Topography of the land application area affects the potential for runoff and erosion. The limits listed in Condition 11 of Part II of the permit were adapted from the *Wastewater Engineering: Treatment and Reuse, 4th Edition*, Table 14-51 as an acceptable maximum slope for the acceptable application of biosolids.

ix. Land application during precipitation and saturated conditions

In order to protect waters of the state, additional measures must be taken to ensure contamination via runoff is prevented. Therefore, DEQ adapted the associated conditions from APC&EC Rule 5.406(B) that governs the liquid animal waste management systems. Land application of biosolids is prohibited during a precipitation event or when significant precipitation is imminent. When land applying biosolids there is a critical time to prevent runoff to the waters of the state, which is during land application and right after land application before the biosolids has had time to absorb into the soil. In order to protect the environment, DEQ defined the word “imminent” to mean greater than a 50% chance of precipitation predicted by the nearest National Weather Service station. When the National Weather Service station predicts greater than 50% chance of precipitation DEQ believes there is a good chance of rain that could cause pollution to the waters of the state. In order to show compliance with the precipitation requirement, DEQ will require the permittee to submit records of the weather reports from land application days as part of the annual reports and have these records available for DEQ upon request.

x. Land application of biosolids to a floodplain

Land application of biosolids to a floodplain shall not increase the level of the base flood by one foot or more, to avoid increasing the velocity of the flow downstream of the site, reducing the temporary storage capacity of the floodplain, or increasing the levels of the flood waters.

xi. Flood stage monitoring

To prevent biosolids from entering the waters of the state or running off to adjacent properties during a flood event caused by the Arkansas River, land application should not occur if an action stage is predicted within one (1) week of the planned land application. When the Arkansas River elevation reaches eighteen (18) feet at the Arkansas River at Little Rock gauge station (LITA4), this is considered an action stage. Based on the site maps and FEMA’s flood zone determination maps, portions of the land application sites are located in the Base Flood Elevation; therefore, land application shall not occur when the river is at action stage elevation or above. According to the National Weather Service, at eighteen (18) feet farmlands downstream of Little Rock may be affected. This information can be found on the National Weather Service website at the following link:

[https://water.weather.gov/ahps2/hydrograph.php?wfo=lzk&prob\\_type=stage&gage=lita4](https://water.weather.gov/ahps2/hydrograph.php?wfo=lzk&prob_type=stage&gage=lita4)

xii. Habitat protection

This condition is adapted from 40 C.F.R. Part 503 and is included to ensure that endangered or threatened species are considered and protected during land application.

xiii. Buffer distances

Minimum buffer distances are required between land application areas and areas that may be vulnerable to water pollution in order to minimize the risk of nutrients or pollutants from leaving the field and reaching surface waters. Buffer distances were adapted from APC&EC Rule 5.406(D) and generally accepted scientific knowledge and engineering practices.

xiv. Flagged Boundaries

In order to be protective of surface waters, minimum buffer distances have been established. In order to verify that the permittee will be applying biosolids within all of the required boundaries of the land application site(s), DEQ will require all boundaries to be flagged prior to and be present during any land application events.

xv. Soil Sampling

The sampling requirements were included in the permit to ensure the samples of the soils are collected in an appropriate manner and to ensure representative samples are collected.

xvi. Training and Training Certifications

Due to non-compliance issues with land application operations through-out the State, DEQ will require the permittee to conduct annual training for any person that will be responsible for land applying biosolids or any person that will be overseeing the land application. The permittee shall certify that any person that will be responsible for land applying biosolids or any person that will be overseeing the land application of biosolids has knowledge and understanding of the permit conditions and WMP. These personnel shall be adequately trained prior to any person conducting land application operations. The permittee will be required to keep records and certification to document of the annual training. The permit will be required to maintain the training records for a period of at least three (3) years .

C. Part III—Standard Conditions

Standard Conditions have been included in this permit based on generally accepted scientific knowledge, engineering practices, and the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et. seq.).

D. Part IV—Definitions

All definitions in Part IV of the permit are self-explanatory.



### 13. Point of Contact

For additional information, contact

Sarah Cousins  
Engineer  
Permits Branch, Office of Water Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317  
501-682-0627  
E-mail: [cousins@adeq.state.ar.us](mailto:cousins@adeq.state.ar.us)

Technical review

Jamal Solaimanian Ph.D., PE  
Engineer Supervisor, No Discharge Section  
Permits Branch, Office of Water Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317  
501-682-0620  
E-mail: [jamal@adeq.state.ar.us](mailto:jamal@adeq.state.ar.us)

### 16. Annual Fee

In accordance with APC&EC Rule 9, the annual fee for this permit is \$500.

### 17. Sources

The following Sources were used to draft the permit:

- A. APC&EC Rule 2, Rule Establishing Water Quality Standards for Surface Waters of the State of Arkansas, as amended.
- B. APC&EC Rule 5, Liquid Animal Waste Management Systems, as amended.
- C. APC&EC Rule 8, Administrative Procedures, as amended.
- D. APC&EC Rule 9, Fee Rule, as amended.
- E. 40 C.F.R. Part 503 for land application of sewage sludge.
- F. Ark. Code Ann. § 8-4-101 et seq., Arkansas Water and Air Pollution Control Act.
- G. Ark. Code Ann. § 4-75-601 et seq., Arkansas Trade Secrets Act.
- H. Arkansas Department of Health (2014). *Rules and Regulations Pertaining to Onsite Wastewater Systems*.
- I. Integrated Water Quality and Assessment Report (305(b) Report).
- J. US Army Corps of Engineers Regulatory Guidance Letter No. 05-05.
- K. 2009 ADEQ Landfarm Study.
- L. *Practical Handbook of Disturbed Land Revegetation*, Munshower, 1994.
- M. *Wastewater Engineering: Treatment and Reuse, 4th Edition*.
- N. UAEX Self-Study Guide 8: Soil Fertility Management in Pastures essential Nutrient for Plant Growth.
- O. *Soils: An Introduction to Soils and Plant Growth*: 4<sup>th</sup> Edition; Donahue, Miller, & Shickluna; 1977.

- P. USDA Natural Resource Conservation Service, *Indicators for Soil Quality Evaluation*, April 1996.
- Q. Application No. 5321-W received June 7, 2019.
- R. Public Hearing on July 9, 2020, at 2:00 PM.
- S. Comments received during the draft public notice and the public hearing.
- T. Additional information submitted on August 12, 2020.

**18. Public Notice**

The public notice for the draft permit was published on January 26, 2020 and the public comment period ended on February 25, 2020. During this comment period, 19 comments were received from 107 commenters. A public hearing was held at the DEQ headquarters on July 9, 2020, at 2:00 PM. The meeting was also accessible via Zoom. During the public hearing one verbal comment was received from one commenter. The public comment period was also open for an additional 20 days starting on July 9, 2020, and ending on July 29, 2020. No additional comments were received during this extended comment period. There were a total of 20 comments and 108 commenters.

**RESPONSE TO COMMENTS  
FINAL PERMITTING DECISION**

Permit No.: 5321-W

Applicant: Little Rock Water Reclamation Authority  
Fourche Creek Water Reclamation Facility

Prepared by: Sarah Cousins

The following are responses to comments received regarding the draft permit number above and are developed in accordance with APC&EC Rule 8 Administrative Procedures and Ark. Code. Ann. § 8-4-203(e)(2).

**Introduction**

The above permit was submitted for public comment on January 26, 2020. The public comment period ended on February 25, 2020. The Arkansas Department of Energy and Environment – Division of Environmental Quality (“DEQ”) conducted one (1) public hearing on the proposed permit. The public hearing was held at DEQ headquarters on July 9, 2020, at 2:00 PM and was also accessible via Zoom. During the public hearing, the Hearing Officer extended the public comment period by twenty (20) days starting on July 9, 2020, and ending on July 29, 2020.

This document contains a summary of the comments that DEQ received during the public comment periods and public hearing. A summary of the changes to the No Discharge Permit can be found on the last page of this document. There were several similar issues raised throughout the comments; those are grouped together with one response from DEQ.

The following people or organizations sent comments to DEQ during the public comment period and public hearing. A total of 20 comments were raised by 108 separate commenters.

	Commenter	Number of Comments Raised
1.	Tim Davis	1
2.	Jim Davis	1
3.	David Spann	1
4.	Kenneth Owens	3
5.	Kathy Owens	3
6.	Johnny Robinson	2
7.	Peggy Robinson	2
8.	Rickey Thomas	1
9.	The Board of Commissioners of the Fourche Island Drainage District No.2 (Rickey Thomas, Bryan Day, and Tim Davis)	1
10.	Audubon Society of Central Arkansas (Cindy Franklin, President)	1
11.	Marcy Bujarski	1

12.	Eric Smith	1
13.	Vickie Minick	1
14.	Alyssa Zimmerman	2
15.	Bobbie Staton	1
16.	Bentlie Cook	1
17.	Bailey Baldrige	1
18.	Brooke Baldrige	1
19.	Carlavto Minick	1
20.	Stormy Coxman	1
21.	Katheryn Grace Tuttle	1
22.	Charnette Hill	1
23.	Donna Minick	1
24.	David Mitchell	1
25.	Iris Brockette	1
26.	Joel M. Bard	1
27.	Lillard Brockette	1
28.	Mark Cox	1
29.	Patricia Keatts	1
30.	Sherry Bryant	1
31.	Nicole DiBlasi	1
32.	Mark McElroy	1
33.	Mike Fryar	1
34.	Mathew Cloninger	1
35.	Myrtle Clifton	1
36.	Megan Cavanaugh	1
37.	Carroll Keatts Jr.	1
38.	Celeste Sapp	1
39.	Lori Wells	1
40.	Kelly Kendall	1
41.	Lonnie R. Staton Sr.	1
42.	Bobbie J. Staton	1
43.	Britten Hays	1
44.	Bill Huey	1
45.	Billie Jean Huey	1
46.	Brittney Smith	1
47.	Debra Gentry	1
48.	Cheryl Cockman	1
49.	Larry Needham	1
50.	Jimmie Richardson	1
51.	Jennifer Needham	1
52.	Rita Johnson	1
53.	Amanda Ghery	1
54.	Albert Pulven	1
55.	W A Dougherty	1
56.	William Bernard	1
57.	William Smith	1

58.	Waylon Williams	1
59.	Steven Rasdor	1
60.	Karla Needham	1
61.	James R. Yarbrough	1
62.	Steve Alison	1
63.	Pat Alison	1
64.	Susan Columbus	1
65.	Shayla Elrod	1
66.	Sherry Hale	1
67.	Shakeena McCoy	1
68.	Brandi Strickland	1
69.	Tony Strickland Jr.	1
70.	Jamie Baldrige	1
71.	James Cox	1
72.	James E. Elrod	1
73.	James Kennedy	1
74.	Derell Ghere	1
75.	Trudy A. Baldrige	1
76.	Todd Given	1
77.	Tanner Hill	1
78.	Todd McDonald	1
79.	Victoria Williams	1
80.	Dona Williams	1
81.	Donna Strickland	1
82.	Tony Strickland	1
83.	Rachel Cloninger	1
84.	Bettye Taylor	1
85.	Robert Taylor	1
86.	Rebecca Williams	1
87.	Joe D. Williams Jr.	1
88.	December Smith	1
89.	Andrea Jobe	1
90.	Harold Jobe	1
91.	Garry Dewayne Gurlen	1
92.	Emily Smith	1
93.	Deena Armstrong	1
94.	Deborah Balmaz	1
95.	D'Anna Elrod	1
96.	Brittney Martin	1
97.	Hunter Staton	1
98.	Kim Baldrige	1
99.	Buster Searcy	1
100.	Miranda Searcy	1
101.	Lonnie Staton Jr.	1
102.	Kristie Cox	2
103.	Mary Williams	2

104.	Gina Minick Welch	1
105.	Gary Minick	1
106.	Carl Minick	1
107.	Paul Minick	1
108.	Bryan Day (Little Rock Port Authority)	1

**Comment 1** This is to give notice of objection, request for public hearing and appeal to any such permit or project on Frazier Pike and Fourche Island.

Commenter: Tim Davis

**Response:** DEQ held a public hearing on July 9, 2020, at 2:00 PM. The meeting was also accessible via Zoom.

**Comment 2** This letter is in regards to a proposed permit to dump Toxic Human Waste and Chemicals (Sewage Sludge) on designated sites owned by Jack Tyler Farms and Davidson Ranch. I oppose any attempt to permit these locations or any locations on the Fourche Island area. Let this letter serve as notice that I request ALL notifications, documents and hearings required by regulation, statute, and laws of the State of Arkansas

Commenter: Jim Davis

**Response:** The proposed permit would authorize the permittee to land apply municipal biosolids on the sites identified by the permit. Biosolids are a product of the wastewater treatment process. During wastewater treatment the liquids are separated from the solids. Those solids are then treated physically and chemically to produce a semisolid, nutrient-rich product known as biosolids. The terms ‘biosolids’ and ‘sewage sludge’ are often used interchangeably. Biosolids or sewer sludge that are to be beneficially used must meet federal and state requirements. Biosolids are divided into “Class A” and “Class B” designations based on treatment methods. The different classes have specified treatment requirements for pollutants, pathogens and vector attraction reduction, as well as general requirements and management practices.

An example of beneficial use includes application to agricultural land. When applied to land at the appropriate agronomic rate, biosolids provide a number of benefits including nutrient addition, improved soil structure, and water reuse. Existing requirements and guidance help ensure that biosolids are processed, handled, and land-applied in a manner that minimizes potential risk to human health.

The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ’s

review of the application, the land application sites meet all of the requirements outlined in the permit application.

DEQ provided notification of a public hearing on July 9, 2020, at 2:00 PM to all commenters who submitted timely comments. DEQ also provided access to this meeting via Zoom. Information about this permit application is available on the DEQ website's Permit Database System (PDS) under the permit number 5321-W.

**Comment 3** This letter is to express my opposition to any permits to land apply sewage sludge (biosolids) to locations on Frazier Pike and Harper Road. Land application of this material will contaminate drinking wells, effect the health of those in application area, in addition will depreciate value of property surrounding application sites. I request all information and public hearings regarding ADEQ Permit No. 5321-W.

Commenter: David Spann

**Response:** The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

The activities authorized by this permit are not located within or nearby any Arkansas Department of Health designated Wellhead Protection Areas or Source Water Assessment Areas for a public drinking water source.

Consideration of property value is not within DEQ's regulatory authority.

DEQ provided notification of a public hearing on July 9, 2020, at 2:00 PM to all commenters who submitted timely comments. DEQ also provided access to this meeting via Zoom. Information about this permit application is available on the DEQ website's Permit Database System (PDS) under the permit number 5321-W.



**Comment 4** We as home owners here on 10324 Harper Road Little Rock Ark. I am writting to let you know we are against having you put the sludge down here in our neighborhood. We thought all of this was settle few years ago. We as a neighborhood on Harper and Tibault Rd do not want this in our neighborhood. Please rethink this and take another look at your papers.

Commenter: Kenneth and Kathy Owens

**Response:** The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

**Comment 5** As homeowners on Harper Road in Little Rock, AR we are still using a Well as our water means, we are writing to state that we OPPOSE to having this so-called Sludge dumped in the fields behind our home and property and that we **object to Permit #5321-W**. As a onetime "**Cancer Survivor**" already, I beg you not to jeopardize my life again by these potentially hazardous chemicals that could seep onto my property and cause me more health issues. Also, we have animals on our property that this could be hazardous to them as well. Please take time and read the attached article concerning a dairy farm in Maine that this same thing caused horrendous effects on this family. Absolutely Horrible!!!! WHO IS GOING TO PROTECT US??

\*Article attached

Commenter: Johnny and Peggy Robinson

**Response:** Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application. The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

**Comment 6** Dear Director, As owner of the RH & SL Family Trust, I am Highly opposed to the Granting by ADEQ of Permit #5321-W, To Water Reclamation, For the application to apply organic waste materials to Lands on Fourche “Island”  
\*Article attached

Commenter: Rickey Thomas

**Response:** The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ’s review of the application, the land application sites meet all of the requirements outlined in the permit application.

**Comment 7** A meeting of Board of Commissioners of Fourche Island Drainage District No. 2 of Pulaski County, Arkansas (the “District”) was held in the City of Little Rock, Arkansas, on the 17<sup>th</sup> day of Feb. 2020. All Commissioners were present. Ricky Thomas acted as Chairman of the meeting.

Prior to the commencement of the meeting, the Commissions were polled and responded that none had received any request of notice of the meeting. The Commissioners also unanimously stated that the meeting was a public meeting and that if anyone wished to attend that they could do so.

Upon motion made and seconded and after discussion of the following resolution was unanimously adopted:

WHEREAS, the Commissioners of Fourche Island Drainage District No. 2 of Pulaski County, Arkansas (the District), have been informed of filing on June 7, 2019 by Little Rock Water Reclamation Authority (the “Applicant”) with Environmental Quality (“ADEQ”) of an application for a no-discharge permit (Permit # 5321-W) for land application of organic wastewater residuals (sludge), on tracts of property located within the District (the “Application”); and

WHEREAS, the granting of Application by ADEQ and application of the organic wastewater residuals (sludge) on the property within the District would have a material adverse impact on the purposes of the District.

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the District that:

Section 1. The District is opposed to granting by ADEQ of the Application. The property on which the organic wastewater materials (sludge) are to be applied pursuant to the plan is located within a potential flood area. In the event of flooding of property, the District would be subject to substantial risk of liability due to materials potentially spreading to the property of adjacent landowners. Therefore, it is the position of the District that the application be DENIED.

Section 2. THIS RESOLUTION SHALL BE IN EFFECT FROM AND AFTER THE DATE OF ADOPTION.

There being no further business to come before the Board, the meeting was adjourned.

Commenter: The Board of Commissioners of the Fourche Island Drainage District No.2 (Rickey Thomas, Bryan Day, and Tim Davis)

**Response:** The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. DEQ has added a record-keeping component to Condition 12 of Part II to show compliance with the prohibition on land application when weather conditions or land application site conditions are not suitable for land application events. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

**Comment 8** The Audubon Society of Central Arkansas was recently apprised of the proposal made by the Little Rock Water Reclamation Authority to spread sewage sludge from its facility on Birdwood Drive onto certain fields along Frazier Pike. Our organization is opposed to this proposal due to the nature of the terrain in that area as well as the proximity of multiple drainage ditches and the Arkansas River itself.

The land in this area consists of farm fields, a small community at the junction of Harper Road and Frazier Pike, numerous woodlots along ditches and bayous, and standing water in low lying areas year round. This area is prone to flooding when the Arkansas River is at flood stage. The potential for contamination of the water supply in this area is high when flooding occurs and it seems obvious rainwater runoff from these fields will end up in the Arkansas River and further pollute the river.

Given the location of the proposed sewage fields, we also note this area is in the vicinity of the irrigation project currently being constructed in the Scott area to take water from the Arkansas River and pump it into the delta waterways with the potential to contaminate crop land east of Pulaski County as well as the underlying aquifers. The environmental consequences if this permit as approved have the potential to be as significant as the C&H hog farm decision and provoke a similar public reaction.

For these reasons the Audubon Society of Central Arkansas is opposed to the issuance of this permit.

Commenter: Audubon Society of Central Arkansas (Cindy Franklin, President)

**Response:** DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. DEQ has added a record-keeping component to Condition 12 of Part II to show compliance with the prohibition on land application when weather conditions or land application site conditions are not suitable for land application events. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

Biosolids are a product of the wastewater treatment process. During wastewater treatment the liquids are separated from the solids. Those solids are then treated physically and chemically to produce a semisolid, nutrient-rich product known as biosolids. The terms 'biosolids' and 'sewage sludge' are often used interchangeably. Biosolids that are to be beneficially used must meet federal and

state requirements. An example of beneficial use includes application to agricultural land. When applied to land at the appropriate agronomic rate, biosolids provide a number of benefits including nutrient addition, improved soil structure, and water reuse.

**Comment 9** A conservation issue for ASCA, and maybe AAS, has been brought to my attention. Jim Davis, a landowner on Frazier Pike (southeast side of Little Rock, heavily birded for Sandhill Crane, Inca Dove, White-winged Dove, and more) and his neighbors are fighting Little Rock Water Reclamation Authority's attempt to get a permit from ADEQ to spread sewage sludge on hayfields. They'll pay two landowners to do it while the rest of the people who live there have to smell it and breathe it in. The environmental concern is that this stuff contains what he calls "forever chemicals" that don't biodegrade and have been known to contaminate soil, water, crops, livestock, and probably wildlife. He pointed me to this article <https://katv.com/news/inside-yourworld/inside-your-world-investigates-toxic-soil-with-potential-links-to-cancer>

I oppose any permit to allow this.

Commenter: Marcy Bujarski

**Response:** The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits which the facility must monitor during operations under the terms of the permit. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

The Office of Water Quality does not specifically regulate odor. Certain permit conditions, such as buffer distances from occupied buildings, should aid in reducing odor. The presence of biosolids odors does not mean that the biosolids pose harm to human health and the environment.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

DEQ is committed to science based regulations for Per- and polyfluoroalkyl substances (PFAS). PFAS are a group of man-made chemicals that have been manufactured and used by a variety of industries since 1940. PFAS include a large number of important chemicals that can be used in some food packaging and can make things grease- and stain-resistant. They are also used in firefighting foams and in a wide range of manufacturing practices.

Most exposures occur through consumer products and food. Drinking water can be a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example,

- an industrial facility where PFAS were produced or used to manufacture other products, or
- locations where firefighting foam was used such as oil refineries, airfields or other training facilities for firefighters

The EPA is leading the national effort to understand PFAS and reduce PFAS risks to the public through implementation of its PFAS Action Plan and through active engagement and partnership with other federal agencies, states, tribes, industry groups, associations, local communities, and the public. Under its PFAS Action Plan, EPA is working to determine if there is enough available data and research to support the development of Clean Water Act (CWA) water quality criteria for PFAS. EPA is also developing a risk assessment to better understand the potential public health and ecological risks associated with PFOA and PFOS in land-applied biosolids. EPA expects to complete its development of the probabilistic risk assessment tool and screening tool for biosolids land application scenarios by the end of 2021. EPA is also working to develop and implement a plan to obtain the additional data needed to complete risk assessments and finalize safety determinations on various identified pollutants, including PFAS, in biosolids and promulgate regulations as needed by the end of 2022.

Once EPA completes its risk assessment tool and screening tool for biosolids, finalizes safety determinations, and determines if regulations are needed for PFAS, including possible Pollutant Concentration Limits or Cumulative Pollutant Loading Rates (CPLR), DEQ will implement those regulations through its permits and through rulemaking as appropriate. At this time, DEQ does not have a sufficient scientific basis for proposing rules concerning PFAS in biosolids.

**Comment 10** It has come to my attention that the Arkansas Department of Environmental Quality (ADEQ) is developing plans to spread solid waste from our municipal sewer plant over the surface of land in my neighborhood. This information came to me from concerned neighbors. I have not received communication about the matter from ADEQ, though I have been told I should have received a Certified Mail document containing full explanation.

From a variety of sources, I have obtained information about the content of this solid waste material which disturbs me to the greatest extent. This sludge, in addition to human waste, apparently contains material from a variety of dangerous and potentially toxic origins. When completely dry it is believed this waste could distribute its hazardous properties by water, by wind or possibly vectored by insects. In the neighborhood where sludge distribution is contemplated, it is a short nine feet down to the water table through the sandiest and fastest perking soil in Central Arkansas.

There must be a better method of disposing of this solid waste. The health of my family and that of my neighbors depends upon it. I will be willing to assist ADEQ in developing alternative approaches to dumping hazardous/toxic waste in our Fourche Island neighborhood. As it stands right now, I absolutely oppose the ADEQ plan of which I have been informed.

Commenter: Eric Smith

**Response:** The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

DEQ has met all of the regulatory requirements outlined in APC&EC Rule 8. DEQ public noticed the application for this permit in accordance with Ark. Code Ann. § 8-4-203(d)(1).

The permit application requires the permittee to notify all adjacent land owners of the proposed land application activities. The applicant provides copies of the Adjacent Landowner Notification letters and recipients with their Waste Management Plan. LRWRA provided copies of all notices sent to adjacent land owners as determined at the time of application submittal.

Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

**Comment 11** My next door neighbor brought over a certified letter that they received on May 19, 2019. It was concerning Land Application of Organic Residuals (or Biosolids), Notification to Adjacent Land Owners. We did not receive a letter. To my knowledge, he is the only land owner that received one of these letters.

Our neighborhood is very familiar with “sewage sludge” or “biosolids” which sounds like a nicer name. We have recently learned on January 13, 2020 that “sewage sludge” or “biosolids” contain “FOREVER CHEMICALS.”

Several times before this neighborhood has stood up to the Little Rock Waste Water Utility when they wanted to apply “sewage sludge” to land adjacent to our property. At that time the entire neighborhood had wells and septic tanks. A couple of years ago the people in the neighborhood wanted city water, at a very high price, were able to obtain that. There are still many people that only have wells. We are some of those people. Our neighborhood has a great distrust with the Little Rock Waste Water Authority and the contractors that they hire. In previous years people in our neighborhood watched and recorded the Independent Contractor that worked for the LRWWA as they applied “sewage sludge” or “biosolids” or “FOREVER CHEMICALS.” They did not go by any of the policies or laws to apply sludge. It was not supposed to be applied in the rain, to try to control the runoff. It was not supposed to be applied within 10 yards of a water well, so as not to contaminate the well. When it was applied it was supposed to be put through a lengthy sprayer with a fine spray of sewage sludge, so it could be controlled. We sat in the LRWWA building down on Birdwood Lane having a meeting with Reggie Corbit and Rick Barger. It was raining heavy outside. It was late in the evening, nearly dark. We all watched a sludge truck pull through the LRWWA yard and out onto the road. Some members of the neighborhood followed them to the Galloway area. When the truck driver got to the location he got out of the truck to open up the sprayer. Instead of a fine spray, he opened a valve completely and the “sewage sludge” just poured full force onto the ground.

Our neighbors got a video of the application of “sewage sludge,” in the rain, within a couple of feet of someones water well. There was no controlling where the “sewage sludge” went, and with the rain, there was no controlling the runoff. The water wells adjacent to that field were compromised. The video showed condoms, hypodermic needles and other waste that you wouldn’t want next to your yard.

There was also speculation that the trucks were dumping sewage sludge into the river. Our neighbors observed the “sewage sludge” trucks going out behind the LRWWA plant. The speculation was raised at a meeting with the Little Rock Board of Directors, Reggie Corbit and Rick Barger. It was a very short time later that there were pine trees planted back there so that we couldn’t see what was happening. There is a large line of trees back there now.

At one of the meetings Reggie Corbit was trying to convince us that “sewage sludge” was safe. He got up and stated that it was so safe that he took some of it home to put on his rose bushes. One of the neighborhood members stood up and said, “that is against the law, you can’t take it home with you.” To our



knowledge, Reggie Corbit was fined \$1500.00. That's just a tiny thing compared to all the laws that Reggie Corbit broke.

One afternoon one of the sludge trucks was leaving LRWWA on Birdwood. I don't know what happened, but the truck overturned. It poured "sewage sludge" or "FOREVER CHEMICALS" all over the road and in the ditches. Rick Barger was down there immediately putting lime out on top of all the "sewage sludge." If this "sewage sludge is so harmless, why was Rick Barger in such a hurry to cover it up? He was in the ditch in boots with a shovel throwing lime on all of the "sewage sludge. He hated it when people from our neighborhood came by and asked questions and called all the neighbors. The people at the Little Rock Waste Water Authority have zero credibility with our neighborhood. They made themselves look like fools in the Little Rock Board of Directors meetings. Reggie Corbit told the board that his contractors would never apply "sewage sludge" in the rain, they would never apply "sewage sludge" near a well, they would never apply "sewage sludge" too thick. At that time our neighbor started the video they took, and the contractor did all of the things that Reggie Corbit said they didn't do.

My family plus several other families still have water wells that are our only source for water. We can NOT have our water wells contaminated. I have had two different blood cancers that are probably due to the environment we live in. I DO NOT WANT CANCER AGAIN!!!! My next door neighbor has also had a blood cancer.

Why don't you guys continue to apply "sewage sludge" near Galloway or in other areas there are not homes with families living in them. This is our home. This is our Sanctuary. We have lived on this property for fifty years this month. The land owners down here have mostly all been here most of their entire lives. Two of our children are still in the neighborhood raising their families, which includes several of our grandchildren and our great grandchildren. My Mother still lives in the neighborhood.

Please deny this permit. Please leave our neighborhood alone. Don't contaminate it with "Forever Chemicals."

Commenter: Vickie Minick

**Response:** The permit application requires the permittee to notify all adjacent land owners of the proposed land application activities. The applicant provides copies of the Adjacent Landowner Notification letters and recipients with their Waste Management Plan. LRWRA provided copies of all notices sent to adjacent land owners as determined at the time of application submittal.

The activities authorized by this permit are not located within or nearby any Arkansas Department of Health designated Wellhead Protection Areas or Source Water Assessment Areas for a public drinking water source.

The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. DEQ has added a record-keeping component to Condition 12 of Part II to show compliance with the prohibition on land application when weather conditions or land application site conditions are not suitable for land application events.

DEQ has added Condition 22 of Part II requiring annual training for any person that will be responsible for land applying biosolids or any person that will be overseeing the land application. This condition will ensure that persons responsible for land application events and persons overseeing land application events have knowledge and an understanding of the permit conditions and the waste management plan.

DEQ is committed to science based regulations for Per- and polyfluoroalkyl substances (PFAS). PFAS are a group of man-made chemicals that have been manufactured and used by a variety of industries since 1940. PFAS include a large number of important chemicals that can be used in some food packaging and can make things grease- and stain-resistant. They are also used in firefighting foams and in a wide range of manufacturing practices.

Most exposures occur through consumer products and food. Drinking water can be a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example,

- an industrial facility where PFAS were produced or used to manufacture other products, or
- locations where firefighting foam was used such as oil refineries, airfields or other training facilities for firefighters

The EPA is leading the national effort to understand PFAS and reduce PFAS risks to the public through implementation of its PFAS Action Plan and through active engagement and partnership with other federal agencies, states, tribes, industry groups, associations, local communities, and the public. Under its PFAS Action

Plan, EPA is working to determine if there is enough available data and research to support the development of Clean Water Act (CWA) water quality criteria for PFAS. EPA is also developing a risk assessment to better understand the potential public health and ecological risks associated with PFOA and PFOS in land-applied biosolids. EPA expects to complete its development of the probabilistic risk assessment tool and screening tool for biosolids land application scenarios by the end of 2021. EPA is also working to develop and implement a plan to obtain the additional data needed to complete risk assessments and finalize safety determinations on various identified pollutants, including PFAS, in biosolids and promulgate regulations as needed by the end of 2022.

Once EPA completes its risk assessment tool and screening tool for biosolids, finalizes safety determinations, and determines if regulations are needed for PFAS, including possible Pollutant Concentration Limits or Cumulative Pollutant Loading Rates (CPLR), DEQ will implement those regulations through its permits and through rulemaking as appropriate. At this time, DEQ does not have a sufficient scientific basis for proposing rules concerning PFAS in biosolids.

**Comment 12** Regarding Permit # 5321-W Land Application of Organic Residuals to the Harper Road & Fraizer Pike neighborhood.

Our backyard lines up to where the land is you want to put the sewage sludge as fertilizer. We live at 10324 Harper Rd, LR. We have owned our property for 36 years and have fought against this for years.

It's not only ourselves I am writing this. We have grand children and now great grand kids that comes from the City to run and play at Granny's and Poppaw house! And we want them to be in a safe area to do this and we feel it is not in the best interest for us to have this put out in our neighborhood.

We have city water, however we have neighbors who depend on their wells for their drinking water.

If it not good for us to have our septic tank close to our home I can't see this being safe for us putting sludge on the property. Our land also floods at the back so I am concern about that also. This has been an ongoing issue for years. There are more of us out here against this, than for it.

This is our homes our neighborhood where we have enjoyed it except for having to fight against this sludge issue.

Please stop this now and let us live in peace. We have seen 3<sup>rd</sup> generation on our land we get and keep clean.

Commenter: Kathy and Kenneth Owens

**Response:** The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. DEQ has added a record-keeping component to Condition 12 of Part II to show compliance with the prohibition on land application when weather conditions or land application site conditions are not suitable for land application events. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

The activities authorized by this permit are not located within or nearby any Arkansas Department of Health designated Wellhead Protection Areas or Source Water Assessment Areas for a public drinking water source. The permit prohibits the land application of biosolids within 100 feet of streams including intermittent streams, ponds, lakes, springs, sinkholes, rock outcrops, wells and water supplies.

DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

**Comment 13** I am a resident of Harper Rd in Little Rock. This permit would allow biosolids – sewage sludge – to be dumped very near to my home & community. The Little Rock Water Reclamation Plant signed a document many years ago promising not to dump biosolids on land south of their plant on Birdwood Dr. It seems they'd like to break that promise. We live very close to the Arkansas River & live very near areas frequently affected by flooding. This causes run off into our property – which if this permit is allowed – would cause sewage biosolids to creep into my yard & neighbors yards. This is extremely concerning not only for my health, but for the health of our community.

Please do not allow permit 5321-W to go into affect.

We are Little Rockers – living in the capitol city of this Natural State. Please keep this very unnatural “fertilizer” away from our homes & families.

Commenter: Alyssa Zimmerman

**Response:** The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. DEQ has added a record-keeping component to Condition 12 of Part II to show compliance with the prohibition on land application when weather conditions or land application site conditions are not suitable for land application events. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements. Based on DEQ’s review of the application, the land application sites meet all of the requirements outlined in the permit application.

**Comment 14** We have fought this battle many times in the Little Rock City Board, Pulaski County Qualm Court and with ADEQ as well as APC&E Commission.

We have won this ongoing battle to apply Little Rock Waste Water Sewer (now known as Little Rock Water Reclamation) Sludge and BioSolids to the low lying properties in our neighborhood.

In the past we have provided video of it being applied next to wells, in the rain, and it is not a safe sludge that they so pretend it to be. I have shown videos taken where it came straight out of the tanker truck large pipes and it had syringes, condoms and other hazardous material and by no means was being monitored as to how much was being applied per acre. I interview and recorded a L.R. Waste Water permission so I could get the facts straight to take back to the community. I ask Reggie Corbett about it being applied in the rain and he assured me that was against All Regulations and would never happen, which was a total lie because I

had videoed them hauling it out from the sewer plant in the down pour of rain as I was going into my meeting with them. I left that meeting and followed their trucks to N.L.R. and video them applying it in hard rain.

I also have previous letters as late as last year from L.R. Waste Water assuring our community that they would NEVER let their sludge/bio solids be applied south of their plant at 9500 Birdwood dr. L.R. AR 72206 and that is exactly who is applying for the permit #5321-W. If this is allowed I think the labilities of the city and county could be great.

I have photos to show that Jack Tyler's property that is next to my sons property off of Frazier Pike goes under water that runs off said permit property on his yard and his neighbors also. A lot of the proposed property is on the 100 year flood plain and some of the other said properties are on the 500 year flood plain. I have many pictures of the late May and early June flood in 2019 showing just how bad the runoff water was from the rains that no one can contain. We are all concerned because we have grandchildren that play outside all the time and this will contaminate the ground. I also have proof that it does cause contamination to the land and animals as well. There is record of a dairy farmer who was told it was safe, let them apply it on his farm, then the milk was contaminated and could be sold, nor could the cows, or the land and now him and his wife are forced into bankruptcy.

This will definitely cause the value of our properties to go way down and pose not only a health risk, an awful smell as well as a financial burden should we try to sell our property.

One last consideration, the city spent a lot of money to extend the Bike Trail from Little Rock south through our community and a lot of large groups of cyclist ride through on weekends and afternoons. I'm sure that when the word gets out about your permit plan to apply sludge they will be very concerned with the health risk and definitely won't like the smell they will definitely be enduring as they are riding through.

My home is directly across from Skip Davidson's land that is in the purposed permit area and some of my neighbors are still depend on their well water for all the water needs such as cooking, drinking, etc. I have a letter that Mr. Davidson sent during one of the previous fights against his permit application where he stated he wanted to withdraw the permit application because he wanted to be a good neighbor. What has happened to change his mind? He has applied it on other property in N.L.R. where there are no homes around. And that worked out well for everyone. Back in 2016 I signed a contract with Dena the company hauling it and ADEQ to withdrawn my complaint and ongoing battle if they would remove the properties that were in our community. This was agreed on and a copy was sent to the county judge. I was sure that would have been the last time we would have to fight this but evidentially this is going to be a fight every year or two. I will assure you that our neighborhood will once again stick together and fight and oppose these permits every time the come up to the bitter end. We have been fighting this battle over 25 years now and won so far every time and we ALL will continue to do whatever it takes to keep this health risk,

awful smell, and risk of it making our property worthless for our families and children who have made this area our homes for generations.

It amazes me that saving a few dollars is in your opinion more important than the safety and health concerns for our family's and our children and grandchildren's health.

Please think about if this was your property and the safety risk of your families and children who would be affected by this Permit 5321-w if it is allowed. Our community deserves to live in peace and raise our families in the healthiest possible environment just as much as you and your families do. If you think this is such a great idea, then take it to your neighborhood and apply it there.

I will be sending copies of this letter to all local officials along with the many letters and signatures we have gotten that oppose this Permit #5321-w.

\*Submitted with attachments

Commenter: Bobbie Staton

**Response:** This is a new permit application. No land application has occurred under this permit.

The location of land application sites is selected by the permit applicant and proposed to DEQ through the permit application. The application is reviewed by DEQ to verify that the sites meet the permit requirements.

Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application. The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. DEQ has added a record-keeping component to Condition 12 of Part II to show compliance with the prohibition on land application when weather conditions or land application site conditions are not suitable for land application events. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

DEQ has added Condition 22 of Part II requiring annual training for any person that will be responsible for land applying biosolids or any person that will be overseeing the land application. This condition will ensure that persons responsible for land application events and persons overseeing land application events have knowledge and an understanding of the permit conditions and the waste management plan.

Consideration of property value is not within the Division's regulatory authority.

**Comment 15** I am a child/teen. I live in the Frazier Pike / Harper Road neighborhood. I hear my parents and grandparents talking about someone putting harmful chemicals on the fields around our houses. I hear them say that these chemicals never go away, that they are "FOREVER CHEMICALS." That makes me afraid because I play in the yard at home and at my grandparents home. We have animals and I am afraid for my animals. When we have a lot of rain some of the fields flood and our yards flood. Please don't let these people put "FOREVER CHEMICALS" in our neighborhood.

Commenters: Bentlie Cook, Bailey Baldrige, Brooke Baldrige, Carlavto Minick, Stormy Coxman, Katheryn Grace Tuttle

**Response:** The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

DEQ is committed to science based regulations for Per- and polyfluoroalkyl substances (PFAS). PFAS are a group of man-made chemicals that have been manufactured and used by a variety of industries since 1940. PFAS include a large number of important chemicals that can be used in some food packaging and can make things grease- and stain-resistant. They are also used in firefighting foams and in a wide range of manufacturing practices.



Most exposures occur through consumer products and food. Drinking water can be a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example,

- an industrial facility where PFAS were produced or used to manufacture other products, or
- locations where firefighting foam was used such as oil refineries, airfields or other training facilities for firefighters

The EPA is leading the national effort to understand PFAS and reduce PFAS risks to the public through implementation of its PFAS Action Plan and through active engagement and partnership with other federal agencies, states, tribes, industry groups, associations, local communities, and the public. Under its PFAS Action Plan, EPA is working to determine if there is enough available data and research to support the development of Clean Water Act (CWA) water quality criteria for PFAS. EPA is also developing a risk assessment to better understand the potential public health and ecological risks associated with PFOA and PFOS in land-applied biosolids. EPA expects to complete its development of the probabilistic risk assessment tool and screening tool for biosolids land application scenarios by the end of 2021. EPA is also working to develop and implement a plan to obtain the additional data needed to complete risk assessments and finalize safety determinations on various identified pollutants, including PFAS, in biosolids and promulgate regulations as needed by the end of 2022.

Once EPA completes its risk assessment tool and screening tool for biosolids, finalizes safety determinations, and determines if regulations are needed for PFAS, including possible Pollutant Concentration Limits or Cumulative Pollutant Loading Rates (CPLR), DEQ will implement those regulations through its permits and through rulemaking as appropriate. At this time, DEQ does not have a sufficient scientific basis for proposing rules concerning PFAS in biosolids.

**Comment 16** I live in the Frazier Pike/Harper Road Neighborhood. It seems as if every time that we turn around we are having to fight for our health, our families health, our property and our animals again. It is a constant headache worrying about someone else wanting to apply “sewage sludge” or “biosolids,” which is a nicer name. There has recently been a story on the news that “sewage sludge” or “biosolids” contain “**FOREVER CHEMICALS.**” *They never go away.* They contaminate people, animals and the soil. It makes people sick and our properties and animals worthless. Our neighborhood has been fighting this for many, many years. We don’t want these “**FOREVER CHEMICALS**” applied near our families and our homes. Some families in this neighborhood have as many as five generations that still live in the neighborhood. This is a neighborhood where kids grow up and choose to live and raise their families here.

In 2012 city water was proposed for this neighborhood. Over the next two to three years it became a reality. There are still many people that do not have city water. Several families still have water wells for their water consumption. We have always had to make sure that the wells were far enough from the septic tanks so that our wells were not contaminated. Now once again, people want to contaminate our land and possibly our water. We cannot allow this to happen.

A lot of proposed property that they want to apply "**FOREVER CHEMICALS**" to is on the 100 year flood plain. Other properties are on the 500 year flood plain. If you were in our neighborhood the end of May and the first half of June, 2019, you would have seen that when we have heavy rains, no one can control the runoff. If there had been "**FOREVER CHEMICALS**" on these fields, it would have wound up in everyone's yards and near water wells. It would have contaminated our yards where we walk and our Children and our Grandchildren play.

Please leave our neighborhood alone to live and raise our families in Peace. We don't want the "**FOREVER CHEMICALS**" and all that could possibly come with them.

Commenters: Charnette Hill, Donna Minick, David Mitchell, Iris Brockette, Joel M. Bard, Lillard Brockette, Mark Cox, Patricia Keatts, Sherry Bryant, Nicole DiBlasi, Mark McElroy, Mike Fryar, Mathew Cloninger, Myrtle Clifton, Megan Cavanaugh, Carroll Keatts Jr., Celeste Sapp, Lori Wells, Mary Williams, Kristie Cox, Kelly Kendall, Lonnie R. Staton Sr., Bobbie J. Staton, Britten Hays, Bill Huey, Billie Jean Huey, Brittney Smith, Debra Gentry, Cheryl Cockman, Larry Needham, Jimmie Richardson, Jennifer Needham\*, Johnny Robinson, Rita Johnson, Amanda Ghere, Albert Pulven, Alyssa Zimmerman, W A Dougherty, William Bernard, William Smith, Waylon Williams, Steven Rasdor, Karla Needham, James R. Yarbrough, Steve Alison, Pat Alison, Susan Columbus, Shayla Elrod, Sherry Hale, Shakeena McCoy, Brandi Strickland, Tony Strickland Jr., Jamie Baldrige, James Cox, James E. Elrod, James Kennedy, Derell Ghere, Trudy A. Baldrige, Todd Given, Tanner Hill, Todd McDonald, Victoria Williams, Dona Williams, Donna Strickland, Tony Strickland, Peggy Robinson, Rachel Cloninger, Bettye Taylor, Robert Taylor, Rebecca Williams, Joe D. Williams Jr., December Smith, Andrea Jobe, Harold Jobe, Garry Dewayne Gurlen, Emily Smith, Deena Armstrong, Deborah Balmaz, D'Anna Elrod, Brittney Martin, Hunter Staton, Kenneth Owens, Kathy Owens, Kim Baldrige, Buster Searcy, Miranda Searcy, Lonnie Staton Jr.

**Response:** DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application. The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

The activities authorized by this permit are not located within or nearby any Arkansas Department of Health designated Wellhead Protection Areas or Source Water Assessment Areas for a public drinking water source.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

DEQ has added Condition 14 of Part II to the final permit to prevent the land application of biosolids when there is a potential of flooding from the Arkansas River.

DEQ is committed to science based regulations for Per- and polyfluoroalkyl substances (PFAS). PFAS are a group of man-made chemicals that have been manufactured and used by a variety of industries since 1940. PFAS include a large number of important chemicals that can be used in some food packaging and can make things grease- and stain-resistant. They are also used in firefighting foams and in a wide range of manufacturing practices.

Most exposures occur through consumer products and food. Drinking water can be a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example,

- an industrial facility where PFAS were produced or used to manufacture other products, or
- locations where firefighting foam was used such as oil refineries, airfields or other training facilities for firefighters

The EPA is leading the national effort to understand PFAS and reduce PFAS risks to the public through implementation of its PFAS Action Plan and through active engagement and partnership with other federal agencies, states, tribes, industry groups, associations, local communities, and the public. Under its PFAS Action

Plan, EPA is working to determine if there is enough available data and research to support the development of Clean Water Act (CWA) water quality criteria for PFAS. EPA is also developing a risk assessment to better understand the potential public health and ecological risks associated with PFOA and PFOS in land-applied biosolids. EPA expects to complete its development of the probabilistic risk assessment tool and screening tool for biosolids land application scenarios by the end of 2021. EPA is also working to develop and implement a plan to obtain the additional data needed to complete risk assessments and finalize safety determinations on various identified pollutants, including PFAS, in biosolids and promulgate regulations as needed by the end of 2022.

Once EPA completes its risk assessment tool and screening tool for biosolids, finalizes safety determinations, and determines if regulations are needed for PFAS, including possible Pollutant Concentration Limits or Cumulative Pollutant Loading Rates (CPLR), DEQ will implement those regulations through its permits and through rulemaking as appropriate. At this time, DEQ does not have a sufficient scientific basis for proposing rules concerning PFAS in biosolids.

**Comment 17** My parents live on Harper Road in Little Rock in the area that you are wanting to “Dump Sludge” or as it is also called, “Biosolids” behind their home. They have been home owners there for 30 years. I grew up there as well.

My Dad has already been through devastating health issues and to have these chemicals dumped behind their land and possibly seep into their soil and potentially cause more health issues to them and to the animals that live there is NOT something they need to have to worry about.

I cannot believe this community of neighbors is having to fight to get this stopped from happening to them...AGAIN. **Unreal!!!** Would you want this to happen in your neighborhood, or to your parents or family? I bet not!!

Property values will be worthless in this community to the next generations that would want to raise their families here. Children would not even be able to enjoy the outdoors like I did as a child. So, I ask you *please* think of the stress you are causing on this neighborhood and DO NOT allow this to happen.

Commenter: Kristie Cox

**Response:** DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application. The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

Consideration of property value is not within the Division's regulatory authority.

**Comment 18** This letter is to **OPPOSE** the pending **Permit #5321-W**.

Hello, my name is Mary Williams and I live at 15308 Frazier Pike, Little Rock AR 72206. I have lived in this community my entire life. I grew up with no worries or concerns to running bare foot in the grass and mud in this neighborhood and enjoyed my childhood so much. I chose to continue to live in this area and to raise my children for those exact reasons. I am now a grandmother who has my grandchild everyday and playing outside is some of the greatest times we have together. I'm stating all of this because I know this will come to an end if Permit #5321-W is allowed! The health concerns for the sewer sludge (aka "BIOSOLIDS") is overwhelming. This sewer sludge has human fecal matter, heavy metals, pathogens, pharmaceuticals, and hundreds of contaminants that are not fully removed even after treatment, I have read article after article and there is NOTHING that leads me to see anything good coming from this. My community has fought this for years and have had promise after promise that it would not be placed in our neighborhood and yet here we are again. My property has standing water and runoff water from other properties surrounding me (which includes runoff from one of the Tyler properties included in the permit request) every time it rains. Not to mention if this Permit #5321-W is allowed and the "Biosolids" once they have dried they become air born. My neighbors and I DO NOT want to breathe in the dried sewer sludge in the air. For us to breathe in the bacteria, viruses, chemicals and every other foul thing you can imagine floating around once this sludge dries...I hate to imagine us having to inhale this and the possible long-term effects it will have on our health! Living in a rural area as we do, there is always wildlife running (deer, coyote, skunks, opossums, raccoons etc.) and once again they run through the sludge, track to our properties and what is the outcome for us...**nothing good!** If the Permit #5321-W is granted my other issue is I have a well that I use daily and what does this mean, it means that as the sewer sludge seeps down it will get in to our underground water and then we use the well water, thus contaminating ourselves with the chemicals that never go away and it is not by our choice!!! This sewer sludge – BIOSOLIDS should NEVER be placed in any residential area or business area! I would hope that people in our community, their health and livelihoods mean something and for that **I DO NOT WANT PERMIT # 5321-W to be granted! Please put yourselves and your families in our places and tell me that you would want this?!**

Commenter: Mary Williams

**Response:** Based on DEQ's review of the application, the land application sites meet all of the requirements outlined in the permit application. The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits which the facility must monitor during operations under the terms of the permit. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

DEQ emailed public notice of the draft permit to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Arkansas Game and Fish Commission, the Division of Arkansas Heritage, and the Department of Health for review and comments. During the comment period, no concerns were raised in regards to public health or Endangered and Threatened Species from the agencies with the jurisdiction over these matters.

**Comment 19:** My family and I grew up in the Frazier Pike/Harper Road Neighborhood. It has come to our attention that there has been a request for a permit to apply "sewage sludge" or "biosolids" to property adjacent to my parents, my brothers and my Grandmothers property. There is other proposed property adjacent to my nephew and my great niece and nephew, as well as other places in the neighborhood. This is a major concern to me. Most of my family members live in this neighborhood, my Grandmother, my parents, my brothers, my sisters in law, my nieces and nephew and a great niece and nephew. This is where I grew up. We are totally against "sewage sludge" or "biosolids" applied in our neighborhood.

My Mother has had two different blood cancers that were probably the results of the environment. We do not need any "**FOREVER CHEMICALS**" to be applied in our neighborhood.

My family lives on property that is in the 100 year flood plain, and other proposed property is on the 500 year flood plain. Anytime that we have heavy rains there are fields that flood and if there were "**FOREVER CHEMICALS**" on those fields the "**FOREVER CHEMICALS**" would go anywhere and everywhere. No one can control the flooding or the runoff.

Most of my family still have water wells. That is the water that they use for everything. They drink their well water, they cook with their well water, they bathe with their well water and they feed and water their animals with their well water. We have to make sure that their water wells are not contaminated. If there is runoff with "**FOREVER CHEMICALS**" in it, we cannot be certain that their water will remain safe for five generations of my family.

We have seen reports of “**FOREVER CHEMICALS**” bankrupting farmers and making their animals and their property worthless. It also caused very dangerous health risks.

These “biosolids” “**FOREVER CHEMICALS**” may contain PCB’s, dioxins, pharmaceuticals, hormones, surfactants, heavy metals, plastics and disease causing pathogens.

Please don’t approve the permit and let this neighborhood enjoy their home places without all the dangers of “**FOREVER CHEMICALS.**”

Commenter: Gina Minick Welch

Similar comments received from: Gary Minick, Carl Minick, and Paul Minick

**Response:** Based on DEQ’s review of the application, the land application sites meet all of the requirements outlined in the permit application. The permit contains protective monitoring and operational requirements in place to protect human health and the environment such as the Cumulative Pollutant Loading Rates (CPLR) and the Ceiling Concentration limits which the facility must monitor during operations under the terms of the permit. These protective monitoring and operational requirements have been adapted from applicable laws and rules, including 40 C.F.R. Part 503 and Ark. Code Ann. § 8-4-203, to protect the environment and human health.

The activities authorized by this permit are not located within or nearby any Arkansas Department of Health designated Wellhead Protection Areas or Source Water Assessment Areas for a public drinking water source.

Conditions in the permit prohibit land application when the soils are saturated, frozen, covered with ice or snow, during precipitation events, or when precipitation is imminent. The permit also includes a condition stating that land application of biosolids in a floodplain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human, wildlife, or land and water uses.

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Most exposures occur through consumer products and food. Drinking water can be a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example,

- an industrial facility where PFAS were produced or used to manufacture other products, or
- locations where firefighting foam was used such as oil refineries, airfields or other training facilities for firefighters

The EPA is leading the national effort to understand PFAS and reduce PFAS risks to the public through implementation of its PFAS Action Plan and through active engagement and partnership with other federal agencies, states, tribes, industry groups, associations, local communities, and the public. Under its PFAS Action Plan, EPA is working to determine if there is enough available data and research to support the development of Clean Water Act (CWA) water quality criteria for PFAS. EPA is also developing a risk assessment to better understand the potential public health and ecological risks associated with PFOA and PFOS in land-applied biosolids. EPA expects to complete its development of the probabilistic risk assessment tool and screening tool for biosolids land application scenarios by the end of 2021. EPA is also working to develop and implement a plan to obtain the additional data needed to complete risk assessments and finalize safety determinations on various identified pollutants, including PFAS, in biosolids and promulgate regulations as needed by the end of 2022.

Once EPA completes its risk assessment tool and screening tool for biosolids, finalizes safety determinations, and determines if regulations are needed for PFAS, including possible Pollutant Concentration Limits or Cumulative Pollutant Loading Rates (CPLR), DEQ will implement those regulations through its permits and through rulemaking as appropriate. At this time, DEQ does not have a sufficient scientific basis for proposing rules concerning PFAS in biosolids.

**Comment 20:** We had a long conversation with Little Rock Water Reclamation Authority this morning. On parcels number 1 and 2, we have those under contract and we will not support biosolids being placed on those two parcels so those need to be removed from the permit. The owner of the property, Jack Tyler, tells me that he has notified somebody, I don't know if it's at the Water Reclamation Authority or the Arkansas Department of Energy and Environment, that those two parcels can no longer be considered.

Commenter: Bryan Day (Little Rock Port Authority)

**Response:** The Division received additional information from LRWRA after this comment was made. The additional information requested that the two parcels in question be removed from the permit.



**Summary of Changes to the permit**

Part	Draft Permit	Final Permit	Comment #																					
II.2	The land application operation shall be managed in accordance with the June 7, 2019, Waste Management Plan (WMP).	The land application operation shall be managed in accordance with the June 7, 2019, Waste Management Plan (WMP) <i>and additional information received on August 12, 2020.</i>	Additional information received from LRWRA on August 12, 2020																					
II.6	<table border="1" data-bbox="333 540 1083 646"> <thead> <tr> <th>Name</th> <th>Section</th> <th>Township</th> <th>Range</th> <th>Acreage</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>JT-1</td> <td>21</td> <td>1N</td> <td>11W</td> <td>16.25</td> <td>34° 41' 49.68"N</td> <td>92° 11' 15.25"W</td> </tr> <tr> <td>JT-2</td> <td>21</td> <td>1N</td> <td>11W</td> <td>21.25</td> <td>34° 41' 49.68"N</td> <td>92° 11' 15.25"W</td> </tr> </tbody> </table>	Name	Section	Township	Range	Acreage	Latitude	Longitude	JT-1	21	1N	11W	16.25	34° 41' 49.68"N	92° 11' 15.25"W	JT-2	21	1N	11W	21.25	34° 41' 49.68"N	92° 11' 15.25"W		Additional information received from LRWRA on August 12, 2020
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II.12	Land application is prohibited when the soils are saturated; frozen; covered with ice or snow; during precipitation events; or when precipitation is imminent (greater than a 50% chance of precipitation predicted by the nearest National Weather Service station) within a 24-hour period.	Land application is prohibited when the soils are saturated; frozen; covered with ice or snow; during precipitation events; or when precipitation is imminent (greater than a 50% chance of precipitation predicted by the nearest National Weather Service station) within a 24-hour period. <i>All records demonstrating compliance with this condition shall be made available to DEQ personnel upon request and submitted to DEQ as part of the annual report.</i>	7, 8, 11, 13, and 14																					

<p>II.14</p>		<p><i>14. Biosolids shall not be land applied on sites that are projected to be impacted by floodwaters from the Arkansas River. Prior to land application the permittee shall collect and maintain records that document the Arkansas River elevation is not expected to reach the action stage of eighteen (18) feet at the Arkansas River at Little Rock gauge station (LITA4) according to the National Weather Service. Land application shall not occur within one (1) week of an action stage of eighteen (18) feet or higher at the Arkansas River at Little Rock gauge station (LITA4).</i></p>	<p>7, 8, 12, 13, 14, 15, 16, and 19</p>
<p>II.22</p>		<p><i>22. The permittee shall provide annual training before any person that will be responsible for land applying biosolids or any person that will be overseeing the land application of biosolids can land apply the biosolids under this permit. The annual training shall consist of, at a minimum, training on all permit conditions and WMP. The permittee shall maintain written certification that any person that will be responsible for land application or any person that will be overseeing the land application is familiar with the permit and WMP requirements. The permittee shall submit written records of the annual trainings and training certifications to DEQ as part of the annual report. All certifications shall be made available to DEQ personnel on request and maintained for three (3) years.</i></p>	<p>11 and 14</p>

<p>Statement of Basis No. 12.B.ix</p>	<p><u>Land application during precipitation and saturated conditions</u></p> <p>In order to protect waters of the state, additional measures must be taken to ensure contamination via runoff is prevented. Therefore, DEQ adapted the associated conditions from APC&amp;EC Rule 5.406(B) that governs the liquid animal waste management systems. Land application of biosolids is prohibited during a precipitation event or when significant precipitation is imminent. When land applying biosolids there is a critical time to prevent runoff to the waters of the state, which is during land application and right after land application before the biosolids has had time to absorb into the soil. In order to protect the environment, DEQ defined the word “imminent” to mean greater than a 50% chance of precipitation predicted by the nearest National Weather Service station. When the National Weather Service station predicts greater than 50% chance of precipitation DEQ believes there is a good chance of rain that could cause pollution to the waters of the state.</p>	<p><u>Land application during precipitation and saturated conditions</u></p> <p>In order to protect waters of the state, additional measures must be taken to ensure contamination via runoff is prevented. Therefore, DEQ adapted the associated conditions from APC&amp;EC Rule 5.406(B) that governs the liquid animal waste management systems. Land application of biosolids is prohibited during a precipitation event or when significant precipitation is imminent. When land applying biosolids there is a critical time to prevent runoff to the waters of the state, which is during land application and right after land application before the biosolids has had time to absorb into the soil. In order to protect the environment, DEQ defined the word “imminent” to mean greater than a 50% chance of precipitation predicted by the nearest National Weather Service station. When the National Weather Service station predicts greater than 50% chance of precipitation DEQ believes there is a good chance of rain that could cause pollution to the waters of the state. <i>In order to show compliance with the precipitation requirement, DEQ will require the permittee to submit records of the weather reports from land application days as part of the annual reports and have these records available for DEQ upon request.</i></p>	<p>7, 8, 11, 13, and 14</p>
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<p>Statement of Basis No. 12.B.xi</p>		<p><i>12.B.xi <u>Flood stage monitoring</u></i></p> <p><i>To prevent biosolids from entering the waters of the state or running off to adjacent properties during a flood event caused by the Arkansas River, land application should not occur if an action stage is predicted within one (1) week of the planned land application. When the Arkansas River elevation reaches eighteen (18) feet at the Arkansas River at Little Rock gauge station (LITA4), this is considered an action stage. Based on the site maps and FEMA's flood zone determination maps, portions of the land application sites are located in the Base Flood Elevation; therefore, land application shall not occur when the river is at action stage elevation or above. According to the National Weather Service, at eighteen (18) feet farmlands downstream of Little Rock may be affected. This information can be found on the National Weather Service website at the following link:</i></p> <p><i><a href="https://water.weather.gov/ahps2/hydrograph.php?wfo=lzk&amp;prob_type=stage&amp;gauge=lita4">https://water.weather.gov/ahps2/hydrograph.php?wfo=lzk&amp;prob_type=stage&amp;gauge=lita4</a></i></p>	<p>7, 8, 12, 13, 14, 15, 16, and 19</p>
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<p>Statement of Basis No. 12.B.xvi.</p>		<p><i>12.B.xvi. <u>Training and Training Certifications</u></i></p> <p><i>Due to non-compliance issues with land application operations through-out the State, DEQ will require the permittee to conduct annual training for any person that will be responsible for land applying biosolids or any person that will be overseeing the land application. The permittee shall certify that any person that will be responsible for land applying biosolids or any person that will be overseeing the land application of biosolids has knowledge and understanding of the permit conditions and WMP. These personnel shall be adequately trained prior to any person conducting land application operations. The permittee will be required to keep records and certification to document of the annual training. The permit will be required to maintain the training records for a period of at least three (3) years.</i></p>	<p>11 and 14</p>
<p>Statement of Basis No. 6</p>	<p>A new application was received on June 7, 2019.</p>	<p>A new application was received on June 7, 2019, with additional information received on August 21, 2020.</p>	<p>Additional information received from LRWRA on August 12, 2020</p>

Statement of Basis No. 17		<i>R. Public Hearing on July 9, 2020, at 2:00 PM.</i> <i>S. Comments received during the draft public notice and the public hearing.</i> <i>T. Additional information submitted on August 12, 2020.</i>	Public comments, public hearing, and additional information from LRWRA
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