



## ARKANSAS

### BIOSOLIDS MANAGEMENT 2018 - STATE SUMMARY

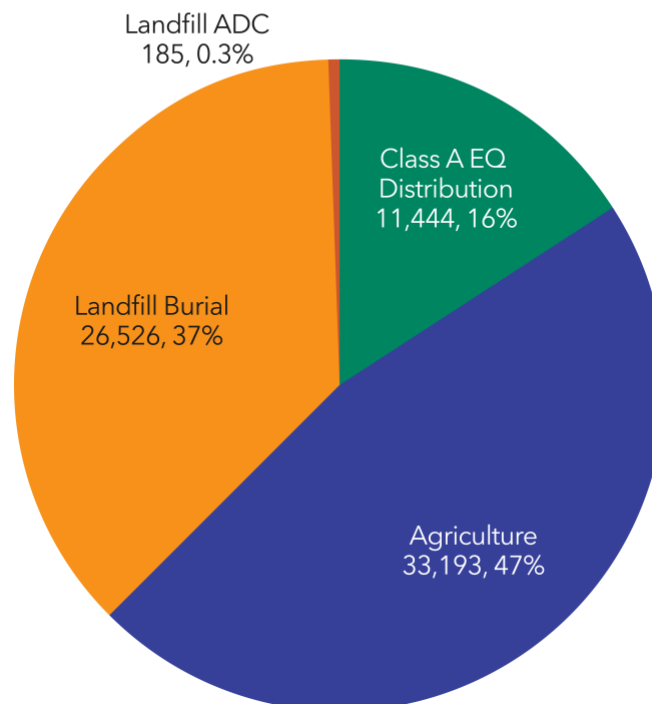
This summary, a dashboard of state statistics, & further data are at [www.biosolidsdata.org](http://www.biosolidsdata.org)

#### Biosolids Management and Oversight in Arkansas

- About 2/3<sup>ds</sup> of Arkansas biosolids are applied to agricultural or other lands to support local farms and crops. As noted by the AR Division of Environmental Quality (AR DEQ), “1000s of acres are land applied to – e.g. one contractor has 50 permits, over 600 acres per permit (but not all for biosolids, other types of waste too). Some smaller communities landfill, who don’t have land application permits nor contractors to handle [their wastewater solids].” Much of the land-applied biosolids are liquid slurries pumped from lagoons, which are common for wastewater treatment in Arkansas. These biosolids are mostly Class B, treated in a few places (e.g. Little Rock) with anaerobic digestion or alkaline stabilization, but mostly by aerobic digestion. Some Class A and EQ biosolids are produced by heat drying (e.g. Fayetteville) and composting (e.g. Hot Springs). No incineration of wastewater solids occurs in Arkansas.
- Roughly half of the state’s public water resource recovery facilities (WRRFs) manage their solids with their own staff, and about half contract with private companies to manage their land application, complying with state and federal regulations. Contracted biosolids management companies active in AR include HydroAg, Denali Water Solutions, Mannco, and Synagro.
- AR DEQ regulates biosolids land application, applying state guidance that is similar to the federal U.S. EPA Part 503 regulations, but with additional setbacks and nutrient management and other requirements. According to AR DEQ, beyond meeting Part 503, land application requires: “test biosolids for NPK, SAR [sodium adsorption ratio], salt content, electrical conductivity, pH; also test soils for metals listed in 503.” For land application sites, they must obtain a no-discharge permit, plus “provide AR DEQ maps of site, buffers from houses, wells, property lines – these submissions are to prove that they will not be discharging to waters in the state. Most specifics are adopted from 40 CFR Part 503, Table 3 and 1 – have to meet all of that for land application – these requirements are included in the AR state no-discharge permit.” Also required for submission to AR DEQ are “adjacent landowner notifications...[and] a waste management plan [that must] explain type of process of land application (surface or subsurface application), and explain loading rates.” In most of AR, loading rates are based on N, but “in NW AR there’s a nutrient surplus area (P) [where] they need [a] NMP [nutrient management plan] that’s based on N and P (use a P index)”.
- Producers of EQ biosolids “have to send a copy of certification to AR DEQ – same as provided to EPA Region 6.” For distributing and marketing EQ products, no site permit or no-discharge permit is required.

- Permit compliance is demonstrated by self-reporting. AR DEQ “has inspectors for all water inspections, so they’re limited on time – some routine inspections, every 3 years or so, mostly complaint-driven.”
- In the early 2020s, AR DEQ is writing Rule 34, which will cover all land application of domestic and industrial wastes not already covered by Rule 5, which largely governs liquid animal waste (CAFOs, etc.). According to AR DEQ, the agency “wants a rule to be able to defend permits in court more easily.”
- AR DEQ notes that “Land application [of biosolids] is pretty well accepted.” Some fast-growing areas in north Arkansas (e.g. Fayetteville, Bentonville) and around Little Rock see more complaints. The biggest pressures on biosolids management are costs borne by WRRFs for biosolids management, as well as regulatory and public pressures. Notably there is also pressure created by the need for upgrades and [increased wastewater treatment capacity](#) in some parts of the state.
- About 1/3 of the state’s households [rely on septic systems](#). Septage disposal and septic systems (anything less than 1000 gallons, domestic, individual homes) are regulated through the AR Department of Health (AR DOH). Larger tanks (>1000 gallons) serving more than 20 people are permitted by both AR DOH and AR DEQ. An estimated 100 WRRFs accept septage, and that is where most AR septage goes. However, septage land application is allowed and is done some.

**Arakansas Biosolids Use & Disposal 2018**  
(dry metric tons, %)  
Total: 71,000



## Major WRRFs and Notable Projects

- **Little Rock Water Reclamation Authority** owns and operates 3 water resource recovery facilities (WRRFs) for the state's capitol and largest city (~195,000 population): Adams Creek (36 MGD design flow), Fourche Creek (16 MGD design flow), and Little Maumelle (4 MGD design flow). Solids from Adams and Fourche Creek are treated at the Fourche Creek facility in anaerobic digestion lagoons, generating renewable electricity used to power the facility. Those solids and the solids from Little Maumelle are all land applied in area agriculture. In recent years, Denali Water has pumped out solids from Little Rock lagoons, removing "approximately 15-20 million gallons of biosolids annually," the company notes. "Each year they certify a portion of it as Class A and the rest is Class B. The City of North Little Rock also does a lagoon cleanout annually." Little Rock has more than 300 acres permitted for land application, some for Class A and some for Class B or both. They have been permitting more acreage in recent years – up to 600 acres total, according to AR DEQ.
- **Fayetteville**, the 2<sup>nd</sup> largest city in AR (~90,500 population), treats solids at its Biosolids Management Facility, which sits on 670 acres owned by the City adjacent to one of the two City WRRFs. The [solids are dewatered](#) with belt filter presses, dried in a solar greenhouse system, and then further dried in a heat dryer. The resulting Class A fertilizer is sold to farmers for ~\$20/ton. Much is used on the [farmland at the Biosolids Management Facility](#), mostly for growing hay. In early 2022, the heat dryer had failed, and a new one was being installed; [in the meantime, solids were being landfilled at considerably higher cost](#).
- **Fort Smith** (3<sup>rd</sup> largest city, population ~88,000) and Barling have relied on a trickling filter for wastewater treatment since 1966 at the Massard facility, one of 2 WRRFs. As of 2021, [that system is failing](#) and upgrades are being planned. Together, the two facilities treat about 8 MGD. Fort Smith biosolids go to the landfill.
- **Springdale** (5<sup>th</sup> largest city, population ~82,000, 24 MGD capacity), **Huntsville**, and **Rogers** (~72,000) also have heat-drying systems, and the dried biosolids are mostly land applied on nearby farms.
- **Pine Bluff** (population ~43,000) claims to have the largest wastewater lagoon system in the U.S. The solids are dredged now and then, dewatered, and land applied.
- **Russellville, Harrison, Van Buren, North Little Rock, Magazine, Jonesboro** (4<sup>th</sup> largest city, population 82,000), **Newport, Morrellton, and Benton** – all have land application permits, a mixture of Class A, B, and a bit of EQ.
- **Conway** is served by 2 WRRFs, operated by the private company Conway Corp since the 1970s. The Tupelo Bay WRRF (16 MGD initial capacity) was a recent upgrade, replacing the former Stone Dam Creek facility. It treats solids by anaerobic digestion, utilizing the biogas for digester heating. All Conway solids are treated to Class B standards and land applied on area farms.

- **Hot Springs** (pop. ~39,000) has been composting anaerobically-digested biosolids for many years. The biosolids are composted with spent race-track animal bedding and yard and wood waste.

#### References:

Information was provided by the state biosolids coordinator and other state biosolids experts. Additional information was gleaned from the following sources.

<https://www.nwaonline.com/news/2019/aug/11/sewer-capacity-threatens-northwest-arka/>

<https://www.arkansasonline.com/news/2021/feb/07/program-to-help-area-homeowners-repair-replace/>

<https://www.arkansasonline.com/news/2022/jan/30/fayetteville-evaluating-biosolids-options-after/>

<https://www.fayetteville-ar.gov/400/Biosolids-Management-Site>

[https://www.arml.org/static/arml/03\\_2017\\_CityNTown\\_WEB.pdf](https://www.arml.org/static/arml/03_2017_CityNTown_WEB.pdf)

<https://www.swtimes.com/story/news/2021/06/11/fort-smith-wastewater-plant-danger-failure/7616866002/>