



Nutrient Management Fact Sheet: Missouri

Updated APRIL 2021

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Nutrient Management Plans

Topic	Summary
Coverage	<p>CAFOs subject to an NPDES permit must have a Nutrient Management Plan (NMP).</p> <p>Operations that are Class I CAFOs and Class II AFOs defined as CAFOs that do not discharge and are not seeking coverage under an NPDES may be covered under an operating permit that requires a Nutrient Management Plan (NMP). CAFOs are required to be covered under a state operating permit or an NPDES permit.¹</p> <p>A fact sheet on the two permits can be found here. A description of AFOs and CAFOs can be found here.</p> <p>Class IA = 4900 or more mature dairy cows. Class IB = 2100 to 4899 mature dairy cows. Class IC = 700 to 2099 mature dairy cows. Class II = 200 to 699 mature dairy cows.</p>
Content	<p>The NMP, at a minimum, must address the following areas:²</p> <ul style="list-style-type: none"> - Ensure adequate storage of manure, litter and process wastewater and procedures for proper operation and maintenance of the storage facilities. - Ensure proper mortality management. - Ensure that clean water is diverted from the production area. - Prevent direct contact of confined animals with waters of the state. - Ensure that chemicals and other contaminants are disposed of properly. - Identify site-specific conservation practices to be implemented. - Identify protocols for testing manure, litter and process wastewater and soil. - Establish protocols for land application of manure, litter, and process wastewater that ensure appropriate agricultural utilization of nutrients. - Ensure appropriate record-keeping. <p>NMPs must also use the Missouri Concentrated Animal Feeding Operation Nutrient Management Technical Standards.</p>
Frequency of Updates	<p>NPDES and operating permits require annual reports.</p>
Paperwork	<p>NPDES and operating permit applications must include an NMP.</p>



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Planner Qualifications	The NPDES permit asks if the NMP was developed or approved by a certified nutrient management planner.
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Manure Storage and Application

Topic	Summary
Overview	<p>CAFOs may be required to have a certified waste management system operator under regulation 10 CSR 20-14-020. Additional information can be found here.</p> <p>CAFOs may also be subject to an odor control plan.³</p>
Storage	<p>Facility Siting/Setback⁴</p> <p>Facility buffer distances are required based on an operation’s class size. Buffers of 1000 feet for Class IC, 2000 feet for Class IB and 3000 feet for Class IA are required between waste storage or confinement facilities and public buildings or occupied residences.</p> <p>Setback distances for confinement buildings, open lots, manure storage structures and mortality composters include:</p> <ul style="list-style-type: none"> - 10 feet from public water supply lines - 50 feet from property lines and public roads - 100 feet from wetland or impoundment for non-human water consumption and perennial or intermittent streams - 300 feet from a lake or impoundment for human water consumption and perennial or intermittent losing streams or sinkholes - Additional setback distances from wells based on construction date and type of facility. <p>Structure</p> <p>Missouri has extensive design standards for animal waste storage systems. Specifics can be found in the regulations in section 300.</p>
Application	<p>Spreading⁵</p> <p>Application of manure is not allowed on slopes greater than 20 percent when soil is frozen, snow-covered, or saturated and if there is a precipitation event that is likely to create runoff. Setback distances for land application include:</p> <ul style="list-style-type: none"> - 300 feet from public and private drinking water well or impoundment, or drinking water intake structure; losing stream cave, spring or sinkhole; perennial or intermittent losing stream or sinkhole. - 100-foot buffer (or 35 foot permanently vegetated buffer) from public or private impoundments not used as a water source; perennial or intermittent stream or wetland; tile line inlet. Additional requirements may apply depending on the gradient.



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An application must be in compliance with the [Missouri Concentrated Animal Feeding Operation Nutrient Management Technical Standard](#).

Testing

Soil and manure testing should be detailed in the NMP.

Technical Assistance

Topic	Summary
Software Tools	<p>The Missouri Clipper is a national data access tool that will generate a ZIP file containing support files needed for MMP.</p> <p>The Plant Available Nitrogen (PAN) calculator must be used by concentrated animal feeding operations (CAFOs) to determine the nitrogen fertilizer value of manure.</p> <p>The AgSite Assessment Tool allows producers to generate a report describing the selected land parcel's physical, demographic, and environmental characteristics and surroundings.</p> <p>The Nutrient Management Tracker (NMTracker) is a suite of tools supporting strategic and tactical nutrient management planning.</p> <p>The Missouri Historical Agricultural Weather Database model is used to query the Missouri Agricultural Weather Database to obtain hourly and daily weather data from the Commercial Agriculture Automated Weather Station Network.</p> <p>Manure Management Planner (MMP) is a software tool created by Purdue University that includes state-specific information for MO producers to create manure management plans for crop and animal feeding operations.</p>
Guides / Handbooks	<p>University of Missouri (MU) Extension assists MO producers with:</p> <ul style="list-style-type: none"> - Manure Management and Nutrient Management publications. - CAFO Operator Certification website with a draft curriculum of the critical concepts that operators must know and will be tested on as part of the certification process. - Access to Horizon Point Site-Specific Weather System, an educational program of the MU Commercial Agriculture Program designed to make precise weather information available to MO farmers. <p>MO Department of Natural Resources (DNR) published Wet Weather Management Practices for CAFOs so producers can meet manure storage facility design requirements.</p>



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Tailored Expert Assistance

MU Extension provides a [list](#) of available contract manure applicators and a [list](#) of manure testing labs in Missouri.

Financial Assistance

Summary

MO NRCS provides assistance through:

- Environmental Quality Incentives Program ([EQIP](#))- offers financial cost-share assistance to farmers for the adoption of conservation practices and development of nutrient management plans.
- Conservation Stewardship Program ([CSP](#)), which gives producers financial assistance to implement new conservation management practices and enhancements.

Through their Soil & Water Conservation Program, MO DNR provides cost-share assistance for implementing MO conservation practice N312- Dairy Waste Management Systems. Producers can find program policies, specifications, and further details [here](#).

MO Agricultural and Small Business Development Authority (MASBA) funds the [Animal Waste Treatment System Loan Program](#) to finance animal waste treatment systems for independent livestock producers below conventional interest rates. Loan proceeds may be used to finance 100% of the cost of an eligible animal waste treatment system.

The MASBA [Single-Purpose Animal Facilities Loan Guarantee Program](#) provides a 50% first-loss guarantee on collateralized loans up to \$250,000 that lenders make to independent livestock producers to finance animal waste facility operations.

¹ [Missouri Secretary of State: Code of State Regulations \(mo.gov\)](#)

² [Missouri Secretary of State: Code of State Regulations \(mo.gov\)](#)

³ [Missouri Secretary of State: Code of State Regulations \(mo.gov\)](#)

⁴ [PUB2351 \(mo.gov\)](#) , [Missouri Secretary of State: Code of State Regulations \(mo.gov\)](#) , [Missouri Secretary of State: Code of State Regulations \(mo.gov\)](#)

⁵ [PUB2351 \(mo.gov\)](#) , [Missouri Secretary of State: Code of State Regulations \(mo.gov\)](#)