



Agricultural and Resource Policy Report

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Matrix of State Level Policies for Animal Feeding Operations

M. Patton and A. Seidl¹

In this document, a matrix of state level animal feeding operation regulations is provided. The matrix represents a compilation of three recent surveys of state regulations (see sources below). The matrix organizes state level regulations into the following categories:

- Assistance;
- Environmental;
- Health and Safety;
- Management Tools;
- Waste Management; and
- Other regulations related to CAFOs.

Assistance provisions in state level regulations are bifurcated into Education, Training and Technical Assistance and Incentives Related to CAFOs. Environmental considerations are divided into five subcategories: Air Quality Regulations; Groundwater Related Requirements and Programs; Wetland Regulations; Water Use Regulations; and Other Environmental Regulations Related to CAFOs. Health and safety regulations are subdivided into Dead Animal Requirements and Well Construction requirements. Management tools considered include: Permitting; Siting and Construction; Setback Distances; and the Role of Local Government. Waste management regulations are divided among the following 12 categories: Allowed Lagoon Seepage; Land Application Limits; Land Required for Facility; Record Keeping On Site; Record Submitting; Liner Material Used; Storage Structure Capacity/Freeboard; Odor Control; Detailed Design Plans; Soil Borings; Waste Management Plans; and Permit Costs.

To our knowledge, one recent additional searchable data base of state level regulations for animal feeding operations exists. The Animal Confinement Policy National Task Force's 1998 National Survey of Animal Confinement Policies can be found at the following web site:

<http://cherokee.agecon.clemson.edu/confine.htm>.

We created this matrix of state level animal feeding operation regulations in order to provide the base-line information for further analysis, discussion, consideration and decision-making. Analyses and syntheses of this information are forthcoming.



Surveys included in the matrix:

Agena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources.

Anliker, Jeff. 1997. State Survey on Waste and Manure Management Regulations. National Association of State Departments of Agriculture.

Mo, Yin and Charles W. Abdalla. 1998. Environmental Regulations and Hog Production: A Survey of 16 States in the U.S.

¹ Patton is a Graduate Assistant and Seidl an Assistant Professor and Extension Economist with the Department of Agricultural and Resource Economics, Colorado State University, Ft. Collins, CO.

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | ASSISTANCE | | ENVIRONMENTAL | |
|-------------|--|---|---|--|
| | Education, Training, and Technical Assistance Related to CAFOs * | Incentives Related to CAFOs * | Air Quality Regulations Related to CAFOs * | Other Groundwater Related Requirements and Programs * |
| Arizona | environmental management seminars; BMP seminars; technical assistance from NRCS and universities | limited cost share w/ NRCS | regulations applied according to the Clean Air Act | conservation requirements under Groundwater Protection Act |
| California | ag. Extension programs/ implementation of Water Quality Assurance Plan | none | none | none |
| Colorado | | | local. Dust control | conservation; ag chemical handling, storage, and loading regs |
| Connecticut | encourages plans designed w/ USDA - NRCS, or Univ. of Connecticut Extension Service | EQUIP funding, State Environmental Assistance Funding, limited cost share | exempt if following BMPs | local, state, and federal regulations |
| Delaware | programs on nutrient management, manure application, storage and design | state and federal cost share, incentive funds, and low interest loans | state and federal | public water supply and well setbacks may apply |
| Georgia | available on continuing basis from EPD and NRCS | none | only recommendations | |
| Idaho | provided by NRCS, Coop. Extension System, Idaho Dept. of Ag., DEQ, and Soil Conservation Commission | "Dairy of Merit" award given by dairy industry | BMPs recommended | DEQ - Idaho Water Quality Standards; Water Resources - Recharge and Water Rights; EPA - Sole Source Aquifer and Hydrologic Ground/Surface water connection; Well Head Protection Program |
| Illinois | >300 AU, managed under direction of certified livestock manager; > 1000 AU, manager must pass competency exam; certification good for 3 yrs. | none except for EQUIP benefits, where applicable | no, but setbacks are intended to avoid odor complaints | NPDES, and all other state regulations |
| Indiana | required by law, but not yet in existence | EQUIP | not required | state water pollution laws |
| Iowa | none | | separation distances between CAFOs and residences, commercial enterprises, public use areas, etc. | |
| Kansas | | | | |
| Kentucky | | | | |
| Louisiana | local Soil and Water Conservation Districts operating under LA Dept. of Ag. and LA State Univ. Coop. Extension | none | state and federal | none |
| Maine | Coop. Extension, Soil and Water Conservation Districts, and NRCS programs | none | none | none |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | ENVIRONMENTAL | | | HEALTH AND SAFETY | |
|-------------|---|--|---|---|---|
| | Wetland Regulations Related to CAFO * | Water Use Restrictions * | Other Environmental Regulations Related to CAFOs * | Dead Animal Requirements * | Well Construction Requirements * |
| Arizona | flood control district/ NRCS general guidelines | conservation requirements under Groundwater Protection Act | solid waste disposal; hazardous materials; medical wastes | county health depts. | wellhead protection regulations |
| California | none | varies with counties/ regional water districts | none | varies by county | water hygiene programs |
| Colorado | none | | | state law, regulatory | wellhead protection program, well capping regs. |
| Connecticut | local, state, and/or federal regulations | local notification of diversion of any amount; state permit for > 50,000 GPD | encouraged to voluntarily develop and maintain farm RMPs and BMPs | incineration | local health permits |
| Delaware | state permit | permit for >50,000 GPD | voluntary guidelines available | no state standards | separation distances apply |
| Georgia | none | must not be used on crops for human consumption | none | none | none, but wells are subject to Well Head Protection Regulations |
| Idaho | no discharge into wetlands | private wells: 13,000 GPD, state restrictions of beneficial use | chemigation, private wells, water reuse hazardous waste treatment, storage, handling, or disposal | buried 6 ft. deep w/ lime and 100 ft. from waterways | Dept. of Water Resources standards |
| Illinois | | according to IL law, but not usually limiting | | IL statutes. Composting is an authorized method | per IL statutes and guidelines |
| Indiana | none | none | none | regulated by state veterinarian/ Board of Animal Health | none |
| Iowa | none | water use permit required if > 2500 GPD | all CAFOs, regardless of size and permit requirements are subject to enforcement, penalties, etc. if violating water quality criteria | composting; limited on-site burial | permit required; must meet design standards and use certified well contractor |
| Kansas | | | | | |
| Kentucky | | | | in process of drafting composting regs. | |
| Louisiana | none | none | BMP used in Waste Management Plan on site-by-site basis | approved by Animal Health Board, Louisiana Dept. of Agr. & Forestry | state and federal |
| Maine | none | none | none | state carcas disposal rules | Dept. of Health standards |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | |
|-------------------------|--|---|---|--|
| | Permitting | | Siting and Construction | Siting and Construction |
| | Permit Required * | Purpose of Permit * | Pre-development Site Appraisal * | Design Standard Required * |
| Arizona | Agricultural general permit;CAFOs | All CAFOs | yes, NRCS technical assistance performed | not required unless there is a violation |
| California | State/counties | Dairy facility construction | state appraisal | yes |
| Colorado | None | None. New facilities of >1000 AU must have oper. plan | none | for runoff control |
| Connecticut | local requirements; state individual ag permit and approvals | facility and structures for new AFOs and approvals for small operations | new operations | yes, if cost share and permitted |
| Delaware | state/federal | manure storage ponds or structures for > 40,000 gallons | none | USDA/NRCS guidelines may apply |
| Georgia | state only *; NPDES permit | large, new, or expanding operations, construction >1000 AU, oper. > 1000 AU | NRCS designed or approved systems | yes |
| Idaho | NPDES, milk permits, Livestock Confinement Operation or Conditional Use Permit (county) | Dairies, livestock waste systems, waste discharge with certain weather events | none, but input available from NRCS and state agencies and will be closely monitored | state standards |
| Illinois | state/federal NPDES; state registration/ certification of lagoons for > 300 AU; waste mgt. plans for > 1000 AU | NPDES ; new/ modified lagoons must register and certify according to Illinois Livestock Mgt. Facilities Act | not required. Must meet setback requirements. Dept. of Ag may inspect any time during process | Am. Society of Ag. Engineers or NRCS |
| Indiana | none, but approval of construction plans by state | facility w/ 600 or > swine, 300 or > cattle, or 30,000 or > poultry | yes | yes |
| Iowa | state/federal | federal, open feedlots w/ 1000 AU and discharging; state, depends on design | to verify distance | yes |
| Kansas | yes | construction >300 AU | | |
| Kentucky | Kentucky Pollution Discharge Elimination Permit | construction, oper., depends on number of animals | no | not required unless there is a violation |
| Louisiana | state/federal NPDES | existing, new, and expanding operations | case-by-case | yes |
| Maine | none | none | recommended | site-specific BMPs required for Right to Farm Protection |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | |
|-------------------------|--|--|--|---|
| Setback Distance | | | | |
| | Dwellings * | Property Line * | Water Wells * | Waste Structure Bottom to Groundwater * |
| Arizona | Local zoning. Varies across counties | Local zoning. Varies across counties | 100 ft. | Varies |
| California | County standards | Local zoning | 50-100 ft. to animal enclosure; 100-150 ft. to wster water lagoon 8 ft. or greater; counties may be more restrictive | county standards |
| Colorado | No standard | local zoning | 150 ft. | no standard |
| Connecticut | case-by-case, varies w/ town and type of structure | case-by-case, varies w/ town and type of structure | case-by-case, compliance with local health districts | state and/or federal approval, 2 to 4 ft. |
| Delaware | no specific state standards | no specific state standards | state regulations require 100 ft. separation | case-by-case, site specific basis |
| Georgia | 300 ft. | 150 ft. | none | none. Seepage limited to 1/8 in./day |
| Idaho | Varies; state requires min. of 300 ft. with 300 to 500 ft. preferred | varies;state recommends min. of 300 ft. | varies; min. of 100 ft., 300 ft. recommended; 1000 ft. from public wells | 2 ft. min. for earthen structures |
| Illinois | for 50 - 999 AU, 1/4 mi. from non-farm residence and 1/2 mi. from populated areas; for 1000-6999 AU, setback incr. 220 ft./addl. 1000 AU from non-farm residence and 440 ft./addl. 1000 AU from populated areas; for > 7000 AU, 1/2 mi. from any occupied residence and 1 mi. from populated areas | According to pre-existing rules, max. feasible distance | 100 ft. from exterior toe of lagoon berm to wells; waste applications, > 200 ft. from wells | For 0-20 ft., liner and monitoring wells required; 20-50 ft., liner only; > 50 ft., neither |
| Indiana | no state standards | no state standards | varies according to wells, roads, and water bodies | part of construction plan review/evaluation |
| Iowa | 1250 ft. from non-owned residences for <625,000 lb. Live wt., 1875 ft. for >625,000 lb. For cattle, distances apply to 1.6 million live wt., respectively. varies according to waste storage structure, animal weight capacity, incorporated/ unincorporated areas, animal species | 100 ft. for land application of waste with irrigation; none for others | 100 to 1000 ft. | 2 ft., unless synthetic liner used |
| Kansas | 1320 ft. from non-owned residences for 300-999 AU; 4000 ft. for > 1000 AU | | | |
| Kentucky | none | | | |
| Louisiana | none | none | none | according to site design |
| Maine | site-specific BMPs for Right to Farm protection | site-specific BMPs for Right to Farm protection | site-specific BMPs for Right to Farm protection | site-specific BMPs for Right to Farm protection |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | | |
|-------------------------|--------------------------------------|---|---|-----------------------------|------------------------------------|
| | | | | Local Government | |
| | Identification of Violators * | Routine On-site Inspection Required * | Provisions for Site Cleanup if Operation Closes ** | Zoning Authority *** | Public Health Authority *** |
| Arizona | complaints and inspections | no | | | |
| California | complaints and/or inspections | none | | | |
| Colorado | complaint driven | not required; most complaint driven | | | |
| Connecticut | complaints and/or inspections | state and/or federal | | | |
| Delaware | complaints and inspections | periodic inspections | | | |
| Georgia | | no | | | |
| Idaho | complaints and/or inspections | dairies, yes; livestock operations, no | | | |
| Illinois | inspection of complaint process | no, but can be inspected any time, complaint driven | no | no | no |
| Indiana | complaints | yes | | yea | yea |
| Iowa | complaint driven | not required; most complaint driven | no | no | no |
| Kansas | | | no | yes | no |
| Kentucky | monitoring and inspection | yes | | yes | yes |
| Louisiana | complaints or inspections | yes | | | |
| Maine | complaints | no | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| WASTE MANAGEMENT | | | | | |
|-------------------------|---|---|--|-----------------------------------|--|
| | Allowed Lagoon Seepage * | Land Application Limits * | Land Required for Facility * | Record Keeping On Site *** | Record Submitting *** |
| Arizona | none | manure/solids applied according to agronomic standards; liquids require effluent permits | | | |
| California | see left | reasonable rates not resulting in runoff | based on minimum acreage and animals per acre | | |
| Colorado | 1/32 in./day | not recommended on frozen ground or saturated conditions | based on nutrient need of crop | | |
| Connecticut | state and/or federal requirements | farm resource management plans and BMPs | no limitation; clay optional w/ State approval, require nutrient management plan | | |
| Delaware | 1 in./yr. or 1x10 ⁻⁷ cent/sec. | no standards. Agronomic rates may be used | no state standards | | |
| Georgia | 1/8 in./day | no, but groundwater nitrates shall not exceed 10 mg/L at feedlot operation's property line | none | yes | yes |
| Idaho | 1/8 in./day | based on developed application plan | adequate for appropriate waste application | | |
| Illinois | 1 x 10 ⁻⁷ cm/sec | agronomic nitrogen rates, based pm 5 year average yields | no limitations if agronomic levels for nitrogen possible | yes | yes, if the facility has discharge under NRDES |
| Indiana | part of plan evaluations | crop needs | crop nitrogen needs | no | no |
| Iowa | 1/16 in./day | agronomic nitrogen crop needs (exception when land is limited, then 250lb. Avail. N or 400lb. Total N/AC/yr.); not recommended on frozen ground; maximum slope 10%; no use of flood plain unless injected | crop nitrogen needs | no | no |
| Kansas | 1/4 in./day | | | yes | yes |
| Kentucky | | | | no | no |
| Louisiana | 1 x 10 ⁻⁷ cm/sec | yes, agronomic rates in waste management plan | varies based on site types and crop needs | | |
| Maine | not addressed | site-specific BMPs required for Right to Farm Protection | site-specific BMPs for Right to Farm protection | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | WASTE MANAGEMENT | | | |
|-------------|--|--|---|---|
| | Liner Material Used * | Storage Structure Capacity/ Freeboard * | Odor Control ** | Detailed Design Plans *** |
| Arizona | varies depending on soil types, exposure and NRCS technical assistance and standards | NRCS Standards | | |
| California | lined with or underlined with soils containing at least 10% clay and not more than 10% gravel or artificial materials of equivalent impermeability | 25 yr./24 hr. storm; retention ponds 20 yr. peak stream flows; new facilities 100 yr. | | |
| Colorado | any material meeting seepage requirements | dewater (15 days of rain fall event)/2 ft. | | |
| Connecticut | clay optional w/ state approval, NRCS standards | State and/or federal approval, design according to NRCS standards | | |
| Delaware | no state standards | no state standards | | |
| Georgia | compacted clay or synthetic liner | 2 ft. of freeboard in lagoons at all times | no | No |
| Idaho | 2 ft. compacted layer of soil, concrete or asphalt, and synthetic membrane liners | earthen: 1 ft. freeboard + direct precip. on pond; concrete: direct precip. on pond | | |
| Illinois | synthetic (vinyl, etc.) compacted clay or clay/bentonite \geq 2 ft. and constructed in 6 in. lifts w/ final hydraulic conductivity \geq 1×10^{-7} | per Amer. Society of Ag. Engineers standards. 1 ft. for <300 AU; 2 ft. for >300 AU (freeboard + top of berm vs max. design volume level) | yes, but low priority or difficult to enforce | No |
| Indiana | 2 ft. compacted clay/bentonite synthetic liners | 120 day holding; 25 yr. storm event; 2 ft. freeboard | no | 1993: 2 'compacted clay liner' for lagoon instead of 1 |
| Iowa | any material that meets seepage rate | sufficient capacity; 2 ft. | no | must be prepared by a registered engineer or NRCS engineer for anaerobic lagoons or other earthen storage structures, greater details required since 1990 |
| Kansas | | | no | Yes |
| Kentucky | | | yes | Yes, at least 3 months storage time |
| Louisiana | state/federal: compacted clay at 10^{-7} CM/sec hydraulic conductivity or NRCS Tech. Spec. | 24 hr., 25 yr. storm event and 21 days process wastewater w/ 2 ft. freeboard | | |
| Maine | site-specific BMPs required for Right to Farm Protection | site-specific BMPs for Right to Farm protection | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | WASTE MANAGEMENT | | | |
|-------------|---|---|---|---|
| | | | | |
| | Soil Borings or Others *** | Waste Management Plans *** | Permit Cost *** | Other Regulations Related to CAFOs * |
| Arizona | | | | animal health; feed quality; OSHA; air quality; water quality; packer and stockyard regs.; Dept. of Ag. Dairy Control |
| California | | | | |
| Colorado | | | | |
| Connecticut | | | | |
| Delaware | | | | Federal Coastal Management Program |
| Georgia | No | Yes | | 0 local regulations |
| Idaho | | | | |
| Illinois | No | No. of livestock, description of land areas, etc. | | 0 |
| Indiana | 2' below bottom of lagoons | construction materials, manure detention time, etc. | | 0 |
| Iowa | 3 borings minimum: 2 to 10' below bottom of lagoon; 1 to 25' below bottom of lagoon | No | | 0 |
| Kansas | No | total amounts of wastes produced and avail. For crops; type of crops grown; method of spreading | <1000 hd., 0 1000-4999, \$30 5000-9999, \$75 >10,000, \$150 | |
| Kentucky | No | No | | 0 |
| Louisiana | | | | |
| Maine | | | | none |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | ASSISTANCE | | ENVIRONMENTAL | |
|----------------|---|--|--|--|
| | Education, Training, and Technical Assistance Related to CAFOs * | Incentives Related to CAFOs * | Air Quality Regulations Related to CAFOs * | Other Groundwater Related Requirements and Programs * |
| Michigan | Michigan State Univ. Coop. Extension, local Soil and Water Conservation Districts | conditional exemption from state Polluter's Pay Law | conditional exemption for farms w/ Right to Farm Practices | Michigan Groundwater Stewardship Program |
| Minnesota | no requirements. Available from Extension Service and Dept. | state and federal cost share; low interest loans; and technical and engineering assistance | odors must not be a nuisance off site | case-by-case basis |
| Missouri | Technical Assistance Program from Dept. of Natural Resources; waste operators required to be trained and certified | EQIP and state revolving loans | none | large CAFOs restricted on water supply streams and lakes |
| Nebraska | | | | |
| New Jersey | none | limited EQIP cost share | NJDEP air quality regs. | NJPDES regs |
| New Mexico | NM Environment Dept. in conjunction with Coop. Extension Service | federal liability protection following a 25 yr/24 hr. event | varies by county or municipality | state abatement and spill reporting regulations |
| New York | Soil and Water Conservation Districts, Coop. Extension Service, NRCS, and State Soil and Water Conservation Committee and Dept. of Agr. And Markets | Technical anc cost share assistance for BMPs and ed. Assistance | no requirement | Dept. of Environmental Conservation; Agr. Nonpoint Source Abatement and Control Program; Interagency Agr. Environmental Mgt. Program |
| North Carolina | yes | yes | | |
| Ohio | | | | |
| Oklahoma | proper operation and maintenance of facility and good housekeeping practices | none except for EQIP benefits, where applicable | must have odor abatement plan; no unnecessary and unreasonable odors | irrigation systems must have: safety check valve; anti-syphon vent; low pressure escape drain; interlock device preventing operation of waste pump |
| Oregon | available from NRCS, Soil and Water Conservation Districts, Extension Service, and private engineers | federal cost share | exempted by state law | possible individual permits |
| Pennsylvania | all certified planners, conservation districts, USDA NRCS and associated state agencies | funding and limited liability | none; exempted because of ag. Status | 100-200 ft. setbacks from streams and sinkholes for waste storage |
| South Dakota | | | | |
| Tennessee | available from NRCS, Tennessee Dept. of Ag., and Univ. of Tennessee Extension Service | cost share through state | no state standards | no state standards |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | ENVIRONMENTAL | | | HEALTH AND SAFETY | |
|----------------|--|--|---|--|---|
| | Wetland Regulations Related to CAFO * | Water Use Restrictions * | Other Environmental Regulations Related to CAFOs * | Dead Animal Requirements * | Well Construction Requirements * |
| Michigan | State Wetland Protection Act | none | | Act no. 239, Bodies of Dead Animals | County Health Dept. regs. |
| Minnesota | only limited impacts on wetlands are allowed | appropriate permit needed if > 10,000 GPD | voluntary implementation of BMPs | burning, burial (discouraged), composting, or rendering | state |
| Missouri | tied to NPDES permit | none | monitoring wells; shutoff requirements; lagoon closure fund and indemnity fee; and spill containment structures | depends on location. rendering, on-site burial, or composting | proper installation and reporting of construction |
| Nebraska | | | | | |
| New Jersey | NJPDES regs | NJDEP water allocation permit regs. | BMPs are recommended by NRCS and state Extension Service | NJDA carcass disposal pending; composting via permit | NJDEP permit required |
| New Mexico | state water quality standards | set by state engineer | fly and nuisance ordinances | CAFO requirement of proper disposal within 3 days | state guidelines |
| New York | no requirement | no requirement | no requirement | buried min. 3 ft. or other sanitary disposal within 72 hr. after directed by peace officer | no requirements |
| North Carolina | | | | | per NC statutes and guidelines |
| Ohio | | | | | |
| Oklahoma | no standards | state rules | | burial, rendering, composting, and any other method approved by NRCS or OK Dept. of Ag; carcass disposal plan required | state and federal; must be installed by licensed water well driller |
| Oregon | state permits and land use ordinances | water right required for > 5000 GPD | land use compatibility | burial, incinerate or disposal at approved facility, and composting | no standards |
| Pennsylvania | state | water withdrawals > 10,000 and 20,000 GPD must be registered | Pennsylvania's Nutrient Management Act (Act 6) | rendering or burial within 48 hrs. | none |
| South Dakota | | | | | |
| Tennessee | no state standards | no state standards | no state standards | varies, based on local health codes | no state standards |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | | |
|-------------------------|--|---|---|---|--------------------------------|
| | | Permitting | | Siting and Construction | Siting and Construction |
| | Permit Required * | Purpose of Permit * | Pre-development Site Appraisal * | Design Standard Required * | |
| Michigan | none | soil erosion permit may be required | local land use zoning | USDA NRCS Technical Guide | |
| Minnesota | state, county, township | construction, expansion, and ownership change, >10 AU | yes | not required, but guidelines and recommendations are made | |
| Missouri | state/federal NPDES | depends on number of animals | yes, by design engineer | yes | |
| Nebraska | yes | construction and operation, all sizes | | | |
| New Jersey | state Pollutant Discharge Elimination Systems | discharge of animal waste via storm water runoff | yes | yes | |
| New Mexico | federal NPDES and NM groundwater discharge permit | all cow dairies, some goat and chicken facilities | yes | NPDES and as specified in state groundwater discharge permit and Dairy Policy | |
| New York | SPDES (point source) | any discharge or pollutant into the waters of the state | no requirements | no permit or regulatory requirement, but must follow NRCS standards and specs. to receive funding | |
| North Carolina | state/federal | >250 hogs required to have permit by end 1997 | eight sign-offs required | yes | |
| Ohio | EPA or Ohio Dept. of Natural Resources | construction or operation, waste mgt. Direct discharge, > 1000 AU | | | |
| Oklahoma | NPDES and state CAFO license | facilities discharging other than 25 yr./24 hr. storm; any facility deemed to be polluter; those with > 2000 AU in roof-covered structure w/ liquid waste mgt. System | yes | yes | |
| Oregon | State Water Pollution Control Facilities permit | any CAFO with a wastewater system that confines for 4 months or longer | yes | yes | |
| Pennsylvania | no permits required; general permits requiring an approved nutrient mgt. Plan and manure storage have been proposed; individual permits in special protection areas are applicable | facilities w/ > 1000 animals and CAFOs w/ > 2000 lbs of animals/acre | must be approved by registered engineer | must follow USDA NRCS standards | |
| South Dakota | | | | | |
| Tennessee | none | none | no state standards | no state standards | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | |
|-------------------------|--|--|---|---|
| Setback Distance | | | | |
| | Dwellings * | Property Line * | Water Wells * | Waste Structure Bottom to Groundwater * |
| Michigan | local land-use zoning | local land-use zoning | 150 ft. from private wells; 2000 ft. from public wells | recommended to follow USDA NRCS Technical Guide and/or Midwest Plan Service |
| Minnesota | various local requirements | various local requirements | 100 ft.; Health Dept standard | 2 ft. above seasonal high water level or saturated soils |
| Missouri | 1000-3000 ft., depending on number of animals | 50 ft. for storage structures and spreading | varies by date of well construction; after 6/30/96, 300 ft. from lagoon and waste storage | 4 ft. for earthen storage structures |
| Nebraska | none | | | |
| New Jersey | local rules may apply, no state standards | local ordinances may apply, no state standards | local ordinances may apply, no state standards | local ordinances may apply, no state standards |
| New Mexico | no standards | no standards | 100 ft. for private wells; 200 ft. for public wells | case-by-case basis |
| New York | no standards | no standards | only Dept. of Health standards for certain localities | no standard |
| North Carolina | 1500 ft. generally; 2500 ft. for schools, churches, and hospitals | 500 ft. for new and expanding operations; 50 ft. for spraying fields | 100 ft. | no standard, relies on seepage control |
| Ohio | none, but EPA recommendation of 1000 ft. | | | |
| Oklahoma | >1 mi. from 10 or more occupied residences; 3 > mi. from city limits or state parks; 1/4 to 3/4 mi. setback depending on area and size | no standards | > 300 ft. from a public or private drinking water well | 4 ft. |
| Oregon | local land use ordinances | local land use ordinances | 100 ft. from feedlot | no state standards |
| Pennsylvania | none | 100 to 300 ft. from property line for manure storage | 100 to 200 ft. for private well; 100 to 400 ft. for public well | based on nitrogen uptake |
| South Dakota | | | | |
| Tennessee | no standards | no standards | no state standards | no state standards |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | | |
|-------------------------|---|--|---|-----------------------------|------------------------------------|
| | | | | Local Government | |
| | Identification of Violators * | Routine On-site Inspection Required * | Provisions for Site Cleanup if Operation Closes ** | Zoning Authority *** | Public Health Authority *** |
| Michigan | Environmental Complaint Response Program | not required; most complaint driven | | yes | no |
| Minnesota | complaints and inspections | no | | yes | yes |
| Missouri | complaints and inspections | yes | no | | |
| Nebraska | | | county only | yes | no |
| New Jersey | complaints and inspections | not required | | | |
| New Mexico | complaints and compliance inspections | at least once/yr. | | | |
| New York | complaints | no requirement | | | |
| North Carolina | complaints, routine inspections, and other agencies | twice per year if > 250 hogs | county only | no | yes |
| Ohio | | | | no | no |
| Oklahoma | annual inspections, complaints, and unannounced inspections | annual inspections | | | |
| Oregon | complaints, aerial surveys, periodic inspections | not required | | | |
| Pennsylvania | complaints, inspections, and/or compliance checks | required once every three years | | no | no |
| South Dakota | | | county only | | |
| Tennessee | complaints | no state standards | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| WASTE MANAGEMENT | | | | | |
|-------------------------|--|---|--|------------------------------------|---|
| | Allowed Lagoon Seepage * | Land Application Limits * | Land Required for Facility * | Record Keeping On Site *** | Record Submitting *** |
| Michigan | USDA NRCS Technical Guide | agronomic rates for nitrogen and phosphorous | none | no | no |
| Minnesota | 500 gal/ac/day | agronomic rates for nitrogen and phosphorous, permit required for higher rates | adequate to utilize manure within required loading limitations | no | no |
| Missouri | no risk: 3500 gal/ac/day; risk: 500 gal/ac/day | yes, based on nutrient requirement, agronomic need for nitrogen; higher rate w/ limited land for disposal | varies for wet waste and dry litter systems | | |
| Nebraska | 1/4 in./day | hydrologic considerations | | yes | no, but Dept. may view records upon request |
| New Jersey | no | agronomic and hydrological rates per NRCS guidelines | local ordinances may apply, no state standards | | |
| New Mexico | 10 ⁻⁷ cm/sec | based on nitrogen loading and crop uptake of nutrients | based on nitrogen loading and crop uptake | | |
| New York | no | no requirement | no requirement | | |
| North Carolina | 1/28 in./day | agronomic nitrogen and phosphorus crop needs; apply within 30 days of when crop can use nutrients | needs of grown crops | yes | no |
| Ohio | | | | no, but Ohio EPA recommends 3 yrs. | no. may be required to submit soil and manure sampling results yearly |
| Oklahoma | 1 x 10 ⁻⁷ cm/sec or NRCS Technical Note 716 rates | nitrogen uptake of crop | no requirement | yes | during operation |
| Oregon | 10 ⁻⁷ cm/sec permeability; =< 1/8 ft./day | =< annual agronomic rate and must be dissipated by evapotranspiration | sufficient for waste application | | |
| Pennsylvania | SNTC Technical Note 716 | nitrogen uptake of crop and water infiltration rate of soil | based on nitrogen uptake | no | no |
| South Dakota | 1/8 in./day | | | | |
| Tennessee | no state standards | no state standards | no state standards | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| WASTE MANAGEMENT | | | | |
|-------------------------|---|--|------------------------|---|
| | Liner Material Used * | Storage Structure Capacity/ Freeboard * | Odor Control ** | Detailed Design Plans *** |
| Michigan | USDA NRCS Technical Guide Specifications and Guidelines | 25 yr., 24 hr. storm event rainfall for the year | no | No |
| Minnesota | any material that allows for a seepage loss of < 500 gal/ac/day | 1 ft. freeboard; capacity for 25 yr./ 24 hr. rainfall event | no | P.E. plan required for all earthen liners, P.E. plan required for concrete storage if >500,000 gal. |
| Missouri | compacted or synthetic clay | 90 to 365 days, depending on location in state and agronomic use of application site | no | |
| Nebraska | | | no | Yes |
| New Jersey | NRCS guidelines | local ordinances may apply, no state standards | | |
| New Mexico | case-by-case, but compacted clay or synthetic is standard | varies, but standard is 2 ft. freeboard | | |
| New York | no requirement | no requirement | | |
| North Carolina | any material that meets seepage rate | 180 days/1 to 2 ft. | no | Yes |
| Ohio | | | no | Yes |
| Oklahoma | natural, geomembrane or synthetic material | 21 days; 1 ft. of freeboard; runoff from 25 yr./24 hr. storm | | |
| Oregon | varies according to situation | 2 ft. freeboard | | |
| Pennsylvania | any materials meeting USDA NRCS seepage rate standards and specs. | state/federal; freeboard for earthen pond is 1 ft.; concrete/steel structure is .5 ft. | no | No |
| South Dakota | | | no | |
| Tennessee | no state standards | no state standards | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | WASTE MANAGEMENT | | | |
|----------------|---|--|---|--|
| | Soil Borings or Others *** | Waste Management Plans *** | Permit Cost *** | Other Regulations Related to CAFOs * |
| Michigan | No | No | 0 | |
| Minnesota | Min. of 2 soil borings for basins and concrete pits unless drain placed around perimeter: at least 5' below bottom of structure | large sites >2000 AU needed to implement soil/manure testing program; signed agreements w/ neighboring land owners | \$1230/yr. for NPDES permits | state environmental reviews |
| Missouri | | | | |
| Nebraska | No | application ground available; soil type; distance to surface water | 0 | |
| New Jersey | | | | none |
| New Mexico | | | | none |
| New York | | | | none |
| North Carolina | NRCS standards | NRCS standards | 0 | |
| Ohio | Full hydrogeologic investigation required under certain criteria; soil borings 5' below an impoundment | amount and topography of land available for application; methods and time of land application; condition and nutrient status of soil | one-time, \$200 + .65% of construction cost w/ max. of \$15,000 | |
| Oklahoma | | | | |
| Oregon | | | | Oregon Safety and Health (OSHA); food sanitary and safety requirements |
| Pennsylvania | No | No | 0 | Nutrient Mgt. Act |
| South Dakota | | | | |
| Tennessee | | | | no state standards |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | ASSISTANCE | | ENVIRONMENTAL | |
|---|---|---|--|--|
| | Education, Training, and Technical Assistance Related to CAFOs * | Incentives Related to CAFOs * | Air Quality Regulations Related to CAFOs * | Other Groundwater Related Requirements and Programs * |
| Texas | USDA and state agencies | limited EQIP cost share; limited Texas cost share fo non-permitted AFOs | > 1000 AU must have anaerobic treatment lagoon for wastewater and adhere to buffer distances | certification of absence or presence of recharge features with plan to prevent impacts |
| Vermont | | | no | state groundwater standards |
| Virginia | | | no | no |
| Wisconsin | | | no state standards specific to CAFOs | identified pollution sources subject to regulation |
| Wyoming | | | enforcement tied to formal complaints as a nuisance | permits to construct are used to protect groundwater classes; monitoring and reporting may be required |
| * National Association of State Departments of Agriculture State CAFO Regulation Survey, 11-1997. | | | | |
| ** Animal Waste Control Programs of Iowa and Eight Other States, Iowa Dept. of Natural Resources, 10-94. | | | | |
| *** 16 state survey, Ubbo Akena, Iowa Dept. of Natural Resources, 10-94 and 4-97. Latest data year, 1994. | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | ENVIRONMENTAL | | | HEALTH AND SAFETY | |
|--------------------------|---|---|---|----------------------------|----------------------------------|
| | Wetland Regulations Related to CAFO * | Water Use Restrictions * | Other Environmental Regulations Related to CAFOs * | Dead Animal Requirements * | Well Construction Requirements * |
| Texas | protected by permit or otherwise specific state statute | none | pollution prevention plans, BMPs, monitoring, reporting, inspections, and recordkeeping | properly disposed | state regs |
| Vermont | state and federal | no | | | |
| Virginia | state and federal, plus soil certification for lagoons | SE VA only, only if water withdrawals > 300,000 gal/mo. | | | |
| Wisconsin | no state standards | no state standards | | | |
| Wyoming | no discharge into wetlands | state water law | | | |
| * National Association c | | | | | |
| ** Animal Waste Contrc | | | | | |
| *** 16 state survey, Ubt | | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | |
|--------------------------|---|--|---|--|
| | Permitting | | Siting and Construction | Siting and Construction |
| | Permit Required * | Purpose of Permit * | Pre-development Site Appraisal * | Design Standard Required * |
| Texas | state/federal | existing, new, and expanding CAFO > 1000 AU and any AFO that is significant polluter; additional state coverage in certain circumstances | case-by-case | yes |
| Vermont | state | construction of new barns or expansion based on number of animals | no | USDA NRCS standards and specs. |
| Virginia | state, either general or individual no-discharge permit or VPDES discharge permit | any CAFO with >= 300 AU and a liquid waste system | soils beneath lagoon must be approved by engineer and certified planner develops nutrient mgt. Plan | indirectly through storage, freeboard, permeability requirements |
| Wisconsin | state NPDES permit for > 1000 AU | all facilities with > 1000 animals | yes if permit required | USDA NRCS Technical Guide |
| Wyoming | NPDES for CAFOs with > 1000 AU | discharge to surface water and construction of wastewater ponds | no | must be approved by Dept. of Environmental Quality |
| * National Association c | | | | |
| ** Animal Waste Contrc | | | | |
| *** 16 state survey, Ubt | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | |
|--------------------------|---------------------------------|---|---|---|
| Setback Distance | | | | |
| | Dwellings * | Property Line * | Water Wells * | Waste Structure Bottom to Groundwater * |
| Texas | 1/4 mi. for new CAFOs > 1000 AU | 1.4 mi. for new CAFOs > 1000 AU if land application is at night | 150 ft. to private wells and 500 ft. to municipal wells near land application sites | determined by prevention of hydrologic connection as per site design |
| Vermont | none | local zoning standards | 50 ft. from pesticide applications; 100 ft. from neighbor's shallow wells | based on nutrient needs of crops |
| Virginia | local zoning | local zoning | 100 ft. | no separation required, but if within 18 in., must have groundwater monitoring well |
| Wisconsin | no standard | no standard | varies based on storage structure type | >= 3 ft. |
| Wyoming | 1 mi. for swine only | none | 1/4 mi. for swine only | no specific regs. |
| * National Association c | | | | |
| ** Animal Waste Contrc | | | | |
| *** 16 state survey, Ubt | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| MANAGEMENT TOOLS | | | | | |
|--------------------------|--|--|---|-----------------------------|------------------------------------|
| | | | | Local Government | |
| | Identification of Violators * | Routine On-site Inspection Required * | Provisions for Site Cleanup if Operation Closes ** | Zoning Authority *** | Public Health Authority *** |
| Texas | compliance inspections or complaints | yes | | | |
| Vermont | complaints and inspections | yes | | | |
| Virginia | inspections and complaints | at least once every 5 yrs. | | | |
| Wisconsin | complaints and inspections | no | | yes | ? |
| Wyoming | complaints, inspections, compliance self reporting | no | | | |
| * National Association c | | | | | |
| ** Animal Waste Contr | | | | | |
| *** 16 state survey, Ubt | | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| WASTE MANAGEMENT | | | | | |
|--------------------------|---|--|--|-----------------------------------|------------------------------|
| | Allowed Lagoon Seepage * | Land Application Limits * | Land Required for Facility * | Record Keeping On Site *** | Record Submitting *** |
| Texas | see left | federal: yes if water quality threatened by phosphorus; state: yes, when soil > 200 ppm of phosphorus; both result in agronomic rates of crop for phosphorus | agronomic rates of crop for nitrogen | yes | no |
| Vermont | NRCS guidelines | agronomic rates | based on nutrient needs of crops | | |
| Virginia | no more than 1 x 10 ⁻⁷ cm/sec | state approved nutrient mgt. plan required, agronomic rates in sensitive environmental areas | required for nutrient mgt. plan, also local zoning | | |
| Wisconsin | =< 1 x 10 ⁻⁷ cm/sec or meet construction standards | agronomic nitrogen rates; required for permitted farms and cost share recipients | no standard | yes | annually |
| Wyoming | site specific | agronomic rates | no standard | | |
| * National Association c | | | | | |
| ** Animal Waste Contrc | | | | | |
| *** 16 state survey, Ubl | | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| WASTE MANAGEMENT | | | | |
|--------------------------|---|--|---|----------------------------------|
| | Liner Material Used * | Storage Structure Capacity/ Freeboard * | Odor Control ** | Detailed Design Plans *** |
| Texas | placed & compacted clay at 1.5 ft. and 1 x 10 ⁻⁷ cm/sec hydraulic conductivity or NRCS Tech Note 716 | 24 hr/25 yr. storm storage; 21 days process wastewater storage/1-2 ft. freeboard | | |
| Vermont | NRCS guidelines | 24 hr./25 yr. storm event | | |
| Virginia | synthetic or clay liner | 24 hr./25 yr. storm event, plus 1 ft. freeboard | | |
| Wisconsin | clay, concrete, steel, geomembrane | 1 ft. freeboard | yes, but low priority or difficult to enforce | Yes |
| Wyoming | must protect groundwater | => 3 ft. of freeboard | | |
| * National Association c | | | | |
| ** Animal Waste Contrc | | | | |
| *** 16 state survey, Ubt | | | | |

**SUMMARY OF STATE CONFINED
 ANIMAL FEEDING OPERATION REGULATIONS**

| | WASTE MANAGEMENT | | | |
|--------------------------|----------------------------|----------------------------|---------------------|--------------------------------------|
| | | | | |
| | Soil Borings or Others *** | Waste Management Plans *** | Permit Cost *** | Other Regulations Related to CAFOs * |
| Texas | | | | |
| Vermont | | | | |
| Virginia | | | | |
| Wisconsin | Yes to all earthen storage | Yes | >1000 AU, \$250/yr. | |
| Wyoming | | | | |
| * National Association c | | | | |
| ** Animal Waste Contrc | | | | |
| *** 16 state survey, Ubl | | | | |