



Odor and Nutrient Management

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EPA Releases The Animal Feeding Operations Air Quality Compliance Agreement

by Wendy Powers, Department of Animal Science

Overview

The U.S. Environmental Protection Agency (EPA) has recently released a proposed Air Quality Compliance Agreement with the animal industries. This agreement was posted in the Federal Register on January 31, 2005. EPA originally established a 30-d comment period that ended on March 2, 2005 and established a producer sign-up deadline of May 1, 2005. After receiving many requests to extend both the comment and sign-up periods, EPA has announced it will continue to accept comments on the compliance agreement until May 2, 2005 and has extended the producer sign-up deadline to July 1, 2005.

The agreement represents two years worth of negotiations between industry and the EPA. As part of the agreement, EPA will conduct a 24-month air emissions monitoring study of animal feeding operations (AFOs). This study is intended to determine the size and characteristics of AFOs that will exceed the threshold for permitting requirements under the Clean Air Act (CAA) and emissions reporting requirements under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and / or the Environmental Planning and Community Right-to-Know Act of 1986 (EPCRA). At the end of this time period, data collected by the study combined with other relevant research data available will be used by EPA to establish emission estimation methods for air pollutants from livestock housing and manure storage systems. These estimation methods will be used to establish air pollutant emissions estimates for all AFOs, not just those that participated in the agreement.

The EPA maintains that operations emitting more than 100 lbs per day of ammonia (NH₃) or hydrogen sulfide

(H₂S) should be reporting their emissions under EPCRA and CERCLA. EPA also states that AFOs are regulated by the Clean Air Act and are subject to regulatory emission thresholds for volatile organic compounds (VOC), particulate matter (PM), ammonia (NH₃) and hydrogen sulfide (H₂S). All of the above emissions will be monitored as part of the agreement. At the end of the study period, EPA will use the data collected as well as other existing available data, to develop tools that will allow producers to determine if they need to obtain a CAA permit and/or install mitigation practices as well as determine if they need to report emissions under the CERCLA or EPCRA rules.

What the agreement provides for producers who sign up

The consent agreement provides protection against past violations of the CAA, CERCLA and EPCRA to producers who sign up, meet all of the conditions, and complete their obligations. The agreement is being offered to the egg, broiler chicken, turkey, dairy and swine industries that house animals under a roof. Air pollutant emissions addressed under the agreement include only those emissions from animal housing and manure storages. Animal manure land application areas are not included. Operations that are covered under the agreement, will receive a limited, conditional covenant not to be sued by EPA and liability release from EPA for any past violations up to the time that the operation reports its CERCLA or EPCRA releases and applies for any needed CAA permits as required in the agreement. Failure to comply with the terms of the agreement (outlined below), at any time, will terminate the covenant. An operation can receive an agreement from EPA by signing up and meeting the requirements as an individual farm or by having an integrator sign up, meet the requirements, and list your operation in the paperwork.

What producers who sign up agree to do

Producers who sign up before the July 1 deadline are agreeing to the following prior to the monitoring study:

1. To provide the information requested on the Farm and Emission Unit Information sheets (Appendix A of the Federal Register notice; downloaded from www.epa.gov)



2. To volunteer their operation as a study site and provide all of the necessary information that is part of the data collection process (Appendix B of the Federal Register notice; downloaded from www.epa.gov) and accept the study protocols and the findings, regardless of any collateral proceeding. Only a limited number of sites will actually be used as monitoring locations, but all producers who sign must be willing to serve as a monitoring sight if selected.
3. To pay a civil penalty without admission of liability. EPA agrees not to sue producers who participate in the agreement in the future for past violations because they have already paid the penalty.
4. To contribute a maximum of \$2500 per farm to a fund from which the air monitoring study will be funded.
5. To comply with all State and local authorities that address nuisance from an AFO
6. To report estimated releases of NH₃ within 120 days after receiving a signed agreement solely for the purposes of the agreement, and not for the purpose of CERCLA or EPCRA reporting. This will apply only to operations that confine more than 25,000 swine weighing over 55 lbs, 100,000 swine weighing less than 55 lbs, 820,000 laying hens, 1,250,000 broiler chickens, 550,000 turkeys, 7,000 mature dairy cows or 10,000 dairy heifers. At this point it is unclear how such estimates will be made.

After the monitoring study ends, producers with signed agreements agree to the following, in order to avoid nullifying their covenant:

1. To certify to EPA that no CAA requirements or CERCLA or EPCRA notifications are needed, based on the study findings and EPA's resulting emissions estimate tools. This must be completed within 60 days after EPA publishes the Emissions-Estimating Methodologies.
2. To submit a CAA permit application, if applicable, within 120 days after EPA publishes the Emissions-Estimating Methodologies. For sources located in attainment areas that exceed 250 tons per year (approximately 1370 lbs per day) of any single pollutant addressed by the CAA, Best Achievable Control Technologies (BACT) must be installed. Emissions thresholds requiring permitting vary from 10 to 100 tons per year in non-attainment areas and vary by pollutant.

3. To report any qualifying releases of NH₃ and H₂S in accordance with CERCLA and EPCRA within 120 days after EPA publishes the Emissions-Estimating Methodologies.
4. To install all emissions control equipment and implement all control practices required by the agreement or contained in the CAA within 30 days of acknowledgement that the operation must comply. A farm has the option to agree to install a waste-to-energy system and process at least 50% of the volume of waste generated by the farm to produce electricity. This option provides the farm an additional 180 days to come into compliance with emission regulations.

Contingencies

Currently, the National Pork Board and the United Egg Producers have contributed funding to support the air monitoring study (\$6 million and \$2.8 million, respectively). However, in order to monitor the proposed 16 sites, representing eggs, broiler chickens, swine, dairy and turkeys, additional resources are needed and an adequate number of farms must volunteer for the study. At the end of the sign-up period, EPA will determine if a sufficient number of AFOs have elected to participate. If the total number is insufficient, EPA will not sign any agreements and will not comply with the monitoring study. If the total number of participants is sufficient but within a particular species or type of operation there is insufficient participation, EPA may decline to sign agreements with those operations and will not proceed with the monitoring of that type of operation. The EPA will make these determinations within 30 days of the end of the sign-up period (i.e., by August 1, 2005).





Penalty schedule

Penalties, without admission of liability, will be assessed to all producers who sign-up and receive an executed agreement from EPA. The amount of the penalty is based on the size of an operation.

Single farm and multiple farm penalty schedule

Size of operation

Penalty

Category 1

- Less than 2,500 swine over 55 lbs, average body weight
- Less than 10,000 swine under 55 lbs, average body weight
- Less than 82,000 laying hens
- Less than 125,000 broiler chickens
- Less than 55,000 turkeys
- Less than 700 mature dairy cows
- Less than 1,000 dairy heifers

\$200 per site

Category 2

More than one site that fits the above categories or

- 2,500–25,000 swine over 55 lbs, average body weight
- 10,000–100,000 swine under 55 lbs, average body weight
- 82,000–820,000 laying hens
- 125,000–1,250,000 broiler chickens
- 55,000–550,000 turkeys
- 700–7,000 mature dairy cows
- 1,000–10,000 dairy heifers

\$500 per site

Category 3

- More than 25,000 swine over 55 lbs, average body weight
- More than 100,000 swine under 55 lbs, average body weight
- More than 820,000 laying hens
- More than 1,250,000 broiler chickens
- More than 550,000 turkeys
- More than 7,000 mature dairy cows
- More than 10,000 dairy heifers

\$1,000 per site

Multiple farm penalty schedule for operations where the individual farms are in the \$1,000 penalty bracket

Number of Category 3 CAFOs

Maximum total penalty

1–10 farms	\$10,000
11–50 farms	\$30,000
51–100 farms	\$60,000
101–150 farms	\$80,000
151–200 farms	\$90,000
More than 200 farms	\$100,000





Planned monitoring locations

Emissions monitoring is proposed to be conducted at farms that represent the major animal sectors, types of operations, and different geographic locations. Below is a table that outlines the proposed characteristics of the 16 sites that have been recommended as the ideal number of monitoring locations. In many cases, a farm will have multiple housing measurements (barns) that will be monitored.

Proposed characteristics of the 16 air emissions monitoring sites

Species	Production unit	Housing	Manure handling	Geographic area
Swine	Sow	Mechanical ventilation	Lagoon	Southeast
	Sow	Mechanical ventilation	Deep pit	Midwest
	Sow	Mechanical ventilation	Lagoon	West
	Finisher	Mechanical ventilation	Lagoon	Southeast
	Finisher	Mechanical ventilation	Basin	Midwest
Laying hens		High-rise	Manure belt	Midwest
		Shallow pit	Manure belt	West
		High-rise	Inside storage	South
		High-rise	Anaerobic lagoon	East
Meat birds	Turkey	Mechanical ventilation	Litter on floor	Midwest
	Broiler	Mechanical ventilation	Litter on floor	West Coast
	Broiler	Mechanical ventilation	Litter on floor	Southeast
Dairy		Freestall	Flush or scrape, lagoon	Midwest
		Freestall	Scrape, basin	Northeast
		Open freestall	Flush, lagoon	West
		Open freestall	Scrape, basin	South

Timeline

- The comment period, ends May 1, 2005
- The sign-up period, ends July 1, 2005
- EPA signs all agreements within 30 days of closing the sign-up period
- Penalties for all agreements signed by EPA are due within 30 days from receipt of an executed contract
- Large farms (operations that confine more than 25,000 swine weighing over 55 lbs, 100,000 swine weighing less than 55 lbs, 820,000 laying hens, 1,250,000 broiler chickens, 550,000 turkeys, 7,000 mature dairy cows or 10,000 dairy heifers) must report estimated releases of NH₃ within 120 days after receiving a signed agreement solely for the purposes of the agreement, and not for the purpose of CERCLA or EPCRA reporting.
- 24 month monitoring study begins
- EPA publishes the Emissions-Estimating Methodologies within 18 months of completing the monitoring study
- Farms covered by the agreement must certify to EPA that they are not in violation of the CAA, CERCLA or EPCRA within 60 days after EPA publishes the Emissions-Estimating Methodologies



OR

- Farms must apply for a CAA permit and report any qualifying releases of NH₃ and H₂S within 120 days after EPA publishes the Emissions-Estimating Methodologies
- Farms must certify to EPA that any necessary emission control equipment is installed and all required practices are implemented within 30 days of determination that they are out of compliance.



Submitting comments

Submit your comments, identified by Docket ID No. OAR-2004- 0237, by one of the following methods:

- Agency Web site: <http://frwebgate.access.gpo.gov/cgi-bin/leaving.cgi?from=leavingFR.html&log=linklog&to=http://www.epa.gov/edocket>. EDOCKET, EPA's electronic public docket and comment system, is EPA's preferred method for receiving comments. Follow the on-line instructions for submitting comments.
- E-mail: a-and-r-docket@epa.gov.
- Fax: (202) 566-1741.
- Mail: Air Docket, Environmental Protection Agency, Mailcode: 6102T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include a total of two copies.
- Hand Delivery: Environmental Protection Agency, 1301 Constitution Avenue, NW., Room B102, Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.
- Instructions: Direct your comments to Docket ID No. OAR-2004-0237.
- The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://frwebgate.access.gpo.gov/cgi-bin/leaving.cgi?from=leavingFR.html&log=linklog&to=http://www.epa.gov/edocket>, including any personal information provided

The sign-up process

- Producers and integrators should consult legal counsel to help determine whether or not they should participate in this study.
- Those who decide to participate need to complete the Farm and Emission Unit Information sheets (Appendix A of the Federal Register notice; downloaded from www.epa.gov) and mail the signed agreement to:
 - Special Litigation and Projects Division (2248A)
 - Attn: Air Compliance Agreements
 - Office of Regulatory Enforcement
 - Office of Enforcement and Compliance Assurance
 - U.S. EPA
 - 1200 Pennsylvania Ave., N.W.
 - Washington, D.C. 20460
- While completing Appendix A (the agreement forms) producers should also consult Appendix B so that they are aware of the type of information that will be collected during the monitoring study, including what information they will need to provide.
- Recall, the sign-up period ends on July 1, 2005.

Resources

- ISU Extension: <http://www.extension.iastate.edu/airquality/>
- EPA fact sheets and pre-publication notice: <http://www.epa.gov/compliance/resources/agreements/caa/cao-agr-0501.html>
- Federal Register publication: <http://a257.g.akamaitech.net/7/257/2422/01jan20051800/edocket.access.gpo.gov/2005/05-1536.htm>

NW Iowa Meetings Feature Environmental Stewardship for Ag

Crop and livestock producers are invited to a meeting featuring environmental stewardship and their role in protecting Iowa's resources. The meeting will be offered from 9:30 a.m. to 3:30 p.m. at four locations. Meetings will be March 17 in Spencer, March 24 in Sheldon, April 5 in Whittemore and April 6 in Carroll.

The meetings will address four main issues facing agricultural producers—water quality, the Iowa Phosphorus Index and plans to manage phosphorus, air quality regulations and research, and assistance provided by state and local agencies. The keynote speaker is Chuck Corell, water quality bureau chief with the Iowa Department of Natural Resources (IDNR), who will discuss water quality issues in Iowa.

The meetings are cooperatively sponsored by Iowa State University (ISU) Extension, Iowa Department of Agriculture and Land Stewardship, IDNR and the Natural Resources Conservation Service. Registration cost of \$30/person is due two days in advance of the meeting you plan to attend. For a brochure or more information, contact your local ISU Extension Office or Beth Doran, ISU Extension beef field specialist (712) 472-2576 or go to <http://extension.agron.iastate.edu/immag/info/envirogmtg05.pdf>

Manure Nutrient Value Software Now Available from Iowa Pork Industry Center

by Ken Stalder, Department of Animal Science

Livestock producers and other interested individuals can use a new software program to help determine the value of nutrients found in all types of manure. The Manure Nutrient Value Calculator (V1.0) is a spreadsheet program that works with Microsoft® Excel 95 or newer and uses approximately 265 K of space. It is available from the Iowa Pork Industry Center (IPIC) at Iowa State University.



Ken Stalder, assistant professor, Animal Science and Garland Dahlke, assistant scientist, Animal Science, developed a program that uses data on available manure including form, quantity and analysis results. The program determines the value of manure used on the farm or that could be sold to an area crop producer and assists with the determining the remaining commercial fertilizer needs.

This software asks for information on what form and quantity of manure you're using and its handling cost. By entering soil and nutrient analysis results, along with the desired application rate and price of commercial fertilizer, the program calculates how many acres your manure will cover (based on nitrogen or phosphorus needs), how much commercial fertilizer you'll need to apply and the total cost of applying all necessary fertilizer.

The Manure Nutrient Value Calculator (V1.0) has many tips and help screens that are built into the program making the program easy to use. The comment and tip boxes are located throughout the program to help users understand where to enter specific inputs and use the spreadsheet itself. The program requires users to enable macros in Excel.

In addition to seeing calculator results on-screen, users also may print a summary of the information from the program, which can be used by producers as they work with neighbors, ISU Extension field specialists, crop consultants and others to develop manure and nutrient management plans for their operations.

To find out more about the Manure Nutrient Value Calculator (V1.0) software or to order a copy, contact Stalder at the IPIC at (515) 294-4683 or in Iowa, (800) 808-7675.

Confinement Producers Who Need a Permit also Need the Matrix in 86 Counties

by Karen Grimes, Iowa Department of Natural Resources

Animal confinement producers who plan to build, expand or increase the animal loading to a confinement facility may be subject to the master matrix in 86 Iowa counties.

These counties formally adopted a resolution that allows the county boards of supervisors to use the master matrix and evaluate proposed locations of animal confinements that are required to apply for construction permits.

Generally, confinements that need a construction permit include confinements of any size that plan to use earthen or unformed manure storage and all operations that will have an animal unit capacity of 1,000 animal units or more after building or modifying a concrete or steel tank, or a confinement building.

However, not all permitted operations need to use the matrix. The matrix is not required for a confinement that was built prior to April 1, 2002, and after construction, expansion or modification the animal unit capacity will be 1,666 animal units or less. Also, the matrix is not required in the 13 counties that haven't adopted a construction evaluation resolution.

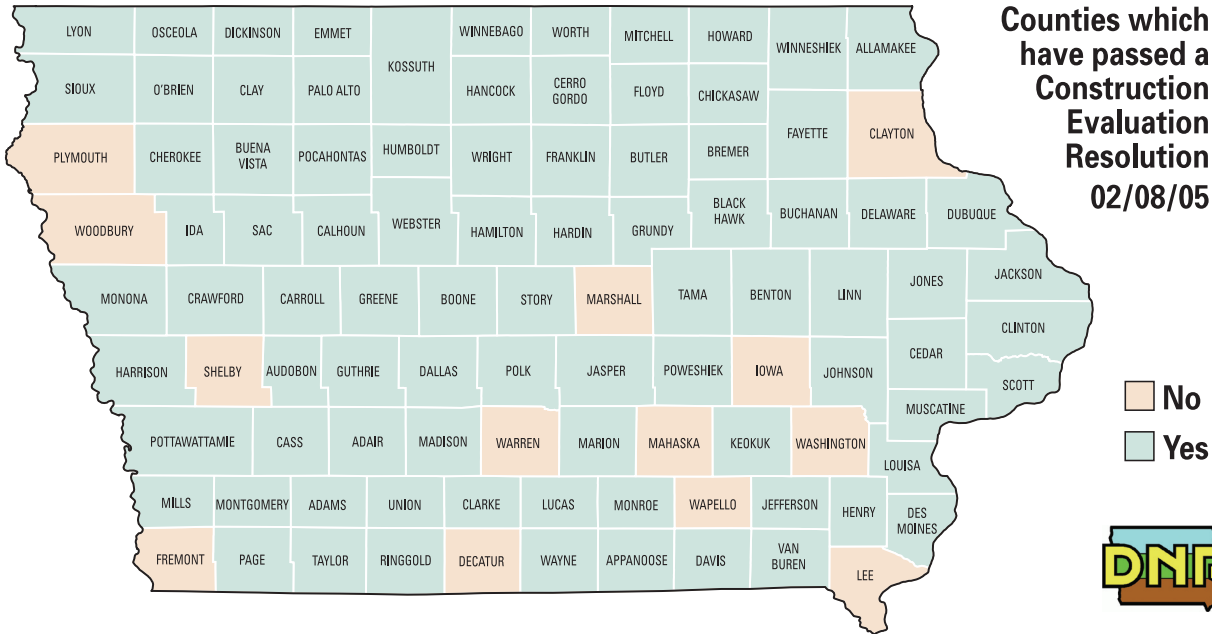
Before producers in participating counties can be approved for construction, they must earn points on the master matrix for choosing sites and using practices that reduce adverse impacts on the environment and the community.

Producers who need to apply for a construction permit and are subject to the master matrix must obtain a minimum overall score of 440 and minimum scores of 53.38 in the air subcategory, 67.75 in the water subcategory and a score of 101.13 in the community impacts subcategory.

The county will evaluate the master matrix and make a recommendation to the DNR to approve or disapprove the application. Counties with a valid resolution can also send staff members to accompany the DNR during site surveys and have the right to appeal the permits to the Environmental Protection Commission.

Producers can find more information and a copy of the master matrix on the DNR Web site at <http://www.iowadnr.com/afo/matrix.html>.

The complete list of counties that have adopted a resolution follows: Adair, Adams, Allamakee, Appanoose, Audubon, Benton, Black Hawk, Boone, Bremer, Buchanan, Buena Vista, Butler, Calhoun, Carroll, Cass, Cedar, Cerro Gordo, Chickasaw, Cherokee, Clarke, Clay, Clinton, Crawford, Dallas, Davis, Delaware, Des Moines, Dickinson, Dubuque, Emmet, Fayette, Floyd, Franklin, Greene, Grundy, Guthrie, Hamilton, Hancock, Hardin, Harrison, Henry, Howard, Humboldt, Ida, Jackson, Jasper, Jefferson, Johnson, Jones, Keokuk, Kossuth, Linn, Louisa, Lucas, Lyon, Madison, Marion, Mills, Mitchell, Monona, Monroe, Montgomery, Muscatine, O'Brien, Osceola, Page, Palo Alto, Pocahontas, Polk, Pottawattamie, Poweshiek,



Ringgold, Sac, Scott, Sioux, Story, Tama, Taylor, Union, Van Buren, Wayne, Webster, Winnebago, Winneshiek, Worth and Wright.

The DNR approved 74 construction permit applications for confinement feeding operations in 2004. Of those, 40 permit applicants were required to use the master matrix. Either the remaining applicants were in a county where the matrix was not required or they did not need the matrix because the operations were first built prior to April 1, 2002, and their animal unit capacity did not exceed 1,666 animal units.

For participating counties, the resolution is in effect from Feb. 1, 2005, through Jan. 31, 2006.

New Water Quality Loan Program for Livestock Producers

by Patti Cale-Finnegan, Iowa Department of Natural Resources

A new loan program to assist livestock producers with projects to protect water quality—the Livestock Water Quality Facilities Program—will be available in March 2005. The program is a joint effort of the Iowa Agricultural Development Authority, the Iowa Department of Natural Resources and the Iowa Finance Authority.

The program offers low-interest loans for a variety of eligible practices, including waste treatment structures;

manure handling equipment; and runoff controls such as sediment control basins and filter strips. Applicants must have a comprehensive nutrient management plan, but can roll the cost of preparing their plan into a loan.

The program is limited to animal feeding operations with 1,000 animal unit capacity or less, built before Dec. 31, 2001. Current federal rules do not allow assistance for concentrated animal feeding operations (CAFOs) or assistance for operations that will become CAFOs as a result of the project. However, use of loan funds will be allowed for operations attempting to redress problems that could cause them to be designated as a CAFO.

The minimum loan amount is \$10,000. Loans from \$10,000 to \$25,000 and loans for purchase of equipment and machinery will be made directly by the Iowa Agricultural Development Authority. Loans of more than \$25,000 will be made through participating local lenders. Program loans can provide up to 100 percent of the costs of a project, or can be used to complement other funding sources such as cost-share or EQIP grants.

The funding for this program comes from the Iowa Water Quality Loan Fund, which was established to provide financing for non-point source water quality projects. It offers three other financing programs to help Iowans address non-point source water quality problems, including programs for local water protection, onsite wastewater systems, and general non-point source projects.

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Announcement

Iowa State University Extension and the Iowa Pork Producers Association will sponsor the satellite program *The EPA Air Emissions Consent Agreement: What it means for Iowa pork producers* on March 29, 7-10 p.m. For more info call you local ISU Extension county office or visit <http://www.extension.iastate.edu/airquality/> or <http://www.ipic.iastate.edu/>

The Iowa Water Quality Loan Fund is the non-point source fund of the Clean Water State Revolving Fund (CWSRF). Under an agreement with the U.S. Environmental Protection Agency, the Iowa Department of Natural Resources administers the CWSRF in partnership with the Iowa Finance Authority. The CWSRF is funded through federal grants, state bond proceeds, and loan repayments, and since 1989 has financed municipal wastewater treatment systems. In 2002, the Iowa General Assembly passed legislation to establish the CWSRF to fund non-point source projects.

Interested applicants may contact the Iowa Agricultural Development Authority at (515) 281-6444 or check the web at www.iowasrf.com.

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In Memoriam

On Jan. 17, 2005, Chris Murray, NRCS nutrient management specialist and frequent contributor to this newsletter, passed away. He was well-known throughout the Iowa agriculture community for his work in the fertilizer and crop protection industry, and serving in many positions on numerous task forces, committees and working groups in soil conservation, water quality and nutrient management issues.



We will miss our colleague and friend and our thoughts and prayers go out to his family and friends as we all learn to live without Chris' smile and good humor.