Original: 2412

123

1759 Fort Washington Avenue
Maple Glen, PA 19002 - 3021
October 20, 2004

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

Dear EQB:

I wish to offer my comments on the proposed revisions of the CAFO regulations. There are a few important issues that need to be reflected in the revised regulations:

- Large livestock operations producing more than one animal type but meeting the size threshold are defined as CAFOs and need a permit, but the regulations should be more comprehensive and include medium-sized CAFOs that are discharging directly into streams.
- A 100-foot year-round setback (or 35-foot vegetative buffer) from streams and other water bodies for land application of manure by CAFOs is necessary. Controlling the runoff of land-applied manure into nearby waters is imperative in order to effectively protect streams.
- There needs to be a mechanism for considering the cumulative impact of these facilities in watersheds already impacted by agricultural pollution.
- Individual permits, not general permits, must be required in High Quality and Exceptional Value streams.
- Bad actor provisions must be added to ensure that permits are not granted to applicants with records of violating pollution control requirements in Pennsylvania, or elsewhere.
- Financial assurance provisions must be added, ensuring that the costs for clean-up of failed or abandoned livestock waste control facilities are not borne by the taxpayers.

Pennsylvania's Department of Agriculture needs to reassess its priorities and place more emphasis on controlling the environmental and health impacts of confined animal feeding operations (CAFOs).

Sincerely,

John R. Thompson

John R. Thompson

Original: 2412

List 10

EQB
Environmental Quality Board

p.o. box 8477 harrisburg, pa. 17105-8477 (717)787-4526

October 28, 2004

Mr. Robert E. Nyce, Executive Director
Independent Regulatory Review Commission
14th Floor, Harristown #2
333 Market Street
Harrisburg, PA 17120

Re: Concentrated Animal Feeding Operations (CAFOs) and Other Livestock Agricultural Operations (#7-391)

Dear Mr. Nyce:

The Environmental Quality Board (EQB) received the enclosed comments regarding the above-referenced proposed rulemaking from the following:

1. Arthur Hunt, 501 N Bethlehem Pike Apt 12A, Ambler, PA 19002-2511
2. Dr. Jane Kessler, 2022 Bondsville Rd., Downingtown, PA 19335-1122
3. James Ryan, 2028 Cody Ln., Harleysville, PA 19438-3347
4. William Donaldson, 170 Cherry Blossom Dr., Churchville, PA 18966-1091
5. Scott Dempsey, 318 E 4th St., Boyertown, PA 19512-1202
6. Susan Wright, Esq., 147 Park Avenue, Swarthmore, PA 19081-1536 – not form
7. Warren Braverman, 5870 Marys Circle, Stewartstown, PA 17363 – not form

These comments were received on the Department's RegComment e-mail account and are enclosed for your review. Please contact me if you have any questions.

Sincerely,

Marjorie L. Hughes
Regulatory Coordinator

Enclosures

Original; 2412

(90)

Hughes, Marjorie

From: Arthur Hunt [ahunt2@verizon.net]
Sent: Monday, October 18, 2004 6:23 PM
To: RegComments@state.pa.us
Subject: Water Quality at Risk: comments on proposed CAFO regulation

October 18, 2004

Pennsylvania Department of Environmental Protection
PA

Dear ,

Subject: Comments on proposed CAFO regulation
The proposed Concentrated Animal Feeding Operation (CAFO) regulation is seriously inadequate at minimizing nutrient pollution and protecting water quality. Pennsylvania already has an estimated 3,903 miles of streams impaired by agricultural impacts, and this regulation holds little potential for correcting this.
1. The proposed regulations fail to require a NPDES permit for medium CAFOs, as required by federal regulation.
The proposed definition of CAFO in § 92.1 is legally problematic because it fails to include certain medium CAFOs, that are required by the federal regulations at 40 CFR § 122.23(a), (b)(2) and (b)(6) to obtain permits. Inexplicably, while the proposed definition in § 92.1 correctly cross-references those facilities that are classified as large CAFOs, it omits the medium-sized facilities that also must be classified as CAFOs.
The federal rule includes specific language regarding "discharges" in the definition of small and medium CAFOs at 40 CFR § 122.23(b)(6)(ii). This provides an opportunity to regulate and enforce operations currently not covered by the Nutrient Management Act, that contribute heavy nutrient loads to the Commonwealth's waters. This definition would include operations with livestock in streams, stormwater flowing from manure management facilities, and other sources of stream degradation. A definition that includes operations with 300 to 1,000 AEUs that must have a Nutrient Management Plan may include more operations than the definition at 40 CFR 122.23(b)(6)(ii), but not those operations with the most serious pollution problems.
In the Chesapeake Bay watershed in Pennsylvania, agricultural operations are the largest source of nitrogen and phosphorous pollution. While many large confined animal operations have been subject to CAFO permit and nutrient management planning requirements, many medium and small size agricultural operations have operated under the regulatory radar. In order to comply with the federal Clean Water Act, to maintain NPDES delegation, and to take a positive step to ensure that major sources of agricultural nutrient pollution in the watershed are addressed, DEP must, as EPA has done, amend the definition of CAFO to include the appropriate medium-sized animal operations into the regulation.
2. The definition of CAFO in § 92.1 is vague and ambiguous.
In addition to not satisfying federal CWA requirements, the proposed definition of CAFO in § 92.1 is vague and ambiguous. It is unfair to both citizens, and the potentially regulated agriculture community, since the regulation fails to give adequate notice to both groups of who is covered by the regulation. This uncertainty will only lead to litigation and the need for the paperwork, expenses, and wasted time of regulatory revisions in the future to correct the problematic language. Moreover, the regulation itself could be held by a court to be violative of due process since it is void for vagueness.
3. The proposed definition of CAFO at § 92.1 irrationally excuses

unauthorized discharges from CAFO classification

The nonsensical definition includes one class of CAFOs that is: "any agricultural operation with a discharge to surface waters that is authorized by Department permit limits and conditions." It excludes from CAFO classification agricultural operations that are operating without necessary permits, or are otherwise not authorized by the Department. Thus, an agricultural operation could refuse to get a permit and by doing so avoid classification as a CAFO and the regulatory requirements that come with such a classification. In addition, the language does not specify which "Department permit limits and conditions" would result in a classification. In sum, the proposed language is completely irrational and must be amended to include agricultural operations with discharges regardless of whether they are authorized by any Department permits.

In order to eliminate irrational language, comply with the federal rule, and clarify the proposal, DEP needs to recraft the definition of CAFO in § 92.1 to read as follows:

CAFO--Concentrated animal feeding operation--A CAO with greater than 300 AEUs, any agricultural operation with greater than 1,000 AEUs, any agricultural operation defined as a large CAFO under 40 CFR § 122.23(b)(4) or a medium CAFO under 40 CFR § 122.23(b)(6) (relating to concentrated animal feeding operations (applicable to state NPDES programs, see 123.25)), or any other agricultural operation designated as a CAFO by the Department based on risk of pollution of surface waters using relevant criteria such as the size, location and management plan of the operation.

The proposed rule's calculation of Animal Equivalent Units to define CAFOs is appropriate for Pennsylvania's mixed operations. Many operations may not reach any of the species-specific thresholds to be considered a CAFO, but would have more than 300 AEUs and need to be included.

4. The Clean Streams Law must be enforced effectively.

§ 91.36 (c) should be rewritten to state: Discharge of Pollutants. It is unlawful for agricultural operations to discharge pollutants to waters of the Commonwealth except as allowed by regulations or a permit administered by the Department. The Department SHALL take an enforcement action against any agricultural operation in violation of this requirement. In addition, when an agricultural operation is found to be in violation of the Clean Streams Law, 35 P.S. § 691.1 et seq., the Department SHALL require the agricultural operation to develop and implement a nutrient management plan under Chapter 83, Subchapter D, for abatement or prevention of the pollution.

5. The provisions relating to buffers and setbacks are vague.

The requirement for a 100-foot year round setback (or 35-foot vegetative buffer) from streams and other water bodies for land application of manure is a giant step in the right direction. However, a 50-foot buffer would capture much more pollution before it enters our streams and downstream waters. The language requiring "appropriate vegetated buffers and setbacks," is vague. The Pennsylvania Technical Guide standards for Riparian Forest Buffers (391) and Riparian Herbaceous Cover (390) would provide helpful guidance on how these buffers may be designed to capture pollution and protect water quality.

Thank you very much, and I look forward to a strengthened regulation and improved water quality.

Sincerely,

Arthur Hunt
501 N Bethlehem Pike Apt 12A
Ambler, PA 19002-2511

OriginaL; 2412

(91)

Hughes, Marjorie

From: Jane Kessler [jrk@bellatlantic.net]
Sent: Tuesday, October 19, 2004 4:56 AM
To: RegComments@state.pa.us
Subject: Water Quality at Risk: comments on proposed CAFO regulation

October 19, 2004

Pennsylvania Department of Environmental Protection
PA

Dear ,

Subject: Comments on proposed CAFO regulation
The proposed Concentrated Animal Feeding Operation (CAFO) regulation is seriously inadequate at minimizing nutrient pollution and protecting water quality. Pennsylvania already has an estimated 3,903 miles of streams impaired by agricultural impacts, and this regulation holds little potential for correcting this.
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The federal rule includes specific language regarding "discharges" in the definition of small and medium CAFOs at 40 CFR § 122.23(b)(6)(ii). This provides an opportunity to regulate and enforce operations currently not covered by the Nutrient Management Act, that contribute heavy nutrient loads to the Commonwealth's waters. This definition would include operations with livestock in streams, stormwater flowing from manure management facilities, and other sources of stream degradation. A definition that includes operations with 300 to 1,000 AEUs that must have a Nutrient Management Plan may include more operations than the definition at 40 CFR 122.23(b)(6)(ii), but not those operations with the most serious pollution problems.
In the Chesapeake Bay watershed in Pennsylvania, agricultural operations are the largest source of nitrogen and phosphorous pollution. While many large confined animal operations have been subject to CAFO permit and nutrient management planning requirements, many medium and small size agricultural operations have operated under the regulatory radar. In order to comply with the federal Clean Water Act, to maintain NPDES delegation, and to take a positive step to ensure that major sources of agricultural nutrient pollution in the watershed are addressed, DEP must, as EPA has done, amend the definition of CAFO to include the appropriate medium-sized animal operations into the regulation.
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4. The Clean Streams Law must be enforced effectively.

§ 91.36 (c) should be rewritten to state: Discharge of Pollutants. It is unlawful for agricultural operations to discharge pollutants to waters of the Commonwealth except as allowed by regulations or a permit administered by the Department. The Department SHALL take an enforcement action against any agricultural operation in violation of this requirement. In addition, when an agricultural operation is found to be in violation of the Clean Streams Law, 35 P.S. § 691.1 et seq., the Department SHALL require the agricultural operation to develop and implement a nutrient management plan under Chapter 83, Subchapter D, for abatement or prevention of the pollution.

5. The provisions relating to buffers and setbacks are vague.

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Thank you very much, and I look forward to a strengthened regulation and improved water quality.

Sincerely,

Dr. Jane Kessler
2022 Bondsville Rd
Downingtown, PA 19335-1122

Original: 2412

(92)

Hughes, Marjorie

From: James Ryan [jhacryan@comcast.net]
Sent: Tuesday, October 19, 2004 8:51 AM
To: RegComments@state.pa.us
Subject: Water Quality at Risk: comments on proposed CAFO regulation

October 19, 2004

Pennsylvania Department of Environmental Protection
PA

Dear ,

Subject: Comments on proposed CAFO regulation
My wife Arleen and I spend our summer months on our boat on the Chesapeake Bay along with many many other residents of PA. The health of this area's natural resource is extremely important for both commercial and recreational use by all residents in the Mid-Atlantic states.
We sincerely believe Pennsylvania has a responsibility to design and implement regulations that limit the pollution of Pennsylvania rivers and streams as well as the Chesapeake Bay.
The proposed Concentrated Animal Feeding Operation (CAFO) regulation is seriously inadequate at minimizing nutrient pollution and protecting water quality. Pennsylvania already has an estimated 3,903 miles of streams impaired by agricultural impacts, and this regulation holds little potential for correcting this.
1. The proposed regulations fail to require a NPDES permit for medium CAFOs, as required by federal regulation.
The proposed definition of CAFO in § 92.1 is legally problematic because it fails to include certain medium CAFOs, that are required by the federal regulations at 40 CFR § 122.23(a), (b)(2) and (b)(6) to obtain permits. Inexplicably, while the proposed definition in § 92.1 correctly cross-references those facilities that are classified as large CAFOs, it omits the medium-sized facilities that also must be classified as CAFOs.
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In the Chesapeake Bay watershed in Pennsylvania, agricultural operations are the largest source of nitrogen and phosphorous pollution. While many large confined animal operations have been subject to CAFO permit and nutrient management planning requirements, many medium and small size agricultural operations have operated under the regulatory radar. In order to comply with the federal Clean Water Act, to maintain NPDES delegation, and to take a positive step to ensure that major sources of agricultural nutrient pollution in the watershed are addressed, DEP must, as EPA has done, amend the definition of CAFO to include the appropriate medium-sized animal operations into the regulation.
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both citizens, and the potentially regulated agriculture community, since the regulation fails to give adequate notice to both groups of who is covered by the regulation. This uncertainty will only lead to litigation and the need for the paperwork, expenses, and wasted time of regulatory revisions in the future to correct the problematic language. Moreover, the regulation itself could be held by a court to be violative of due process since it is void for vagueness.

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The nonsensical definition includes one class of CAFOs that is: "any agricultural operation with a discharge to surface waters that is authorized by Department permit limits and conditions." It excludes from CAFO classification agricultural operations that are operating without necessary permits, or are otherwise not authorized by the Department. Thus, an agricultural operation could refuse to get a permit and by doing so avoid classification as a CAFO and the regulatory requirements that come with such a classification. In addition, the language does not specify which "Department permit limits and conditions" would result in a classification. In sum, the proposed language is completely irrational and must be amended to include agricultural operations with discharges regardless of whether they are authorized by any Department permits.

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Thank you very much, and I look forward to a strengthened regulation and improved water quality.

Sincerely,

Mr. James Ryan
2028 Cody Ln
Harleysville, PA 19438-3347

Original: 2412

93

Hughes, Marjorie

From: William Donaldson [wdonald539@comcast.net]
Sent: Wednesday, October 20, 2004 5:35 AM
To: RegComments@state.pa.us
Subject: Water Quality at Risk: comments on proposed CAFO regulation

October 20, 2004

Pennsylvania Department of Environmental Protection
PA

Dear ,

Subject: Comments on proposed CAFO regulation
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Thank you very much, and I look forward to a strengthened regulation and improved water quality.

Sincerely,

Mr. William Donaldson
170 Cherry Blossom Dr
Churchville, PA 18966-1091

Original: 2412

(94)

Hughes, Marjorie

From: Scott Dempsey [sdem561689@aol.com]
Sent: Thursday, October 21, 2004 8:37 AM
To: RegComments@state.pa.us
Subject: Water Quality at Risk: comments on proposed CAFO regulation

October 21, 2004

Pennsylvania Department of Environmental Protection
PA

Dear ,

Subject: Comments on proposed CAFO regulation
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Thank you very much, and I look forward to a strengthened regulation and improved water quality.

Sincerely,

Mr. Scott Dempsey
318 E 4th St
Boyertown, PA 19512-1202

Oriignal: 2412
2413

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2004 NOV 10 PM 3:43
REVIEW COMMISSION

Christopher Klein
105 E. Aaron Drive
State College PA 16803

Environmental Quality Board
PO Box 8477
Harrisburg PA 17105-8477

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NOV 2 2004
ENVIRONMENTAL QUALITY BOARD

Oct. 29, 2004

Dear Sir or Madam:

I am writing to express my concern over the agricultural pollution of Pennsylvania's waters. I am especially concerned that pending legislation (such as HB1222 and ACRE) will favor the livestock industry and give it preference over the water protection laws of local governments.

I urge you to do all you can to protect the quality of the water shared by all Pennsylvanians and to hold the livestock industry to responsible standards of stewardship of our common land and water.

Sincerely, Chris Klein

147

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2004 NOV 12 PM 3:43

REGULATORY REVIEW COMMISSION

Hughes, Marjorie

From: GW1030@aol.com
Sent: Friday, November 05, 2004 10:02 AM
To: RegComments@state.pa.us
Subject: (no subject)

I oppose factory farms and CAFO's

Goldy Williams

ORIGINAL: 2412

(97)

PSATS

PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP SUPERVISORS

November 5, 2004

Environmental Quality Board
Rachel Carson State Office Building
15th Floor
400 Market Street
Harrisburg, PA 17120-2301

Dear EQB Members:

We are writing to you on behalf of the 1,456 townships represented by the Association to comment on the Proposed Rulemaking on Concentrated Animal Feeding Operations and Other Agricultural Operations that was published in the August 7, 2004 issue of the *Pennsylvania Bulletin*. CAFOs and CAOs have become controversial facilities in many townships across the Commonwealth and township officials are concerned that these facilities be properly regulated to reduce the risk of pollution and other negative impacts on the community.

We understand that this proposed rulemaking is due in part to Governor Rendell's directive in his veto message for HB 1222 and would attempt to reduce the concerns over animal feeding operations that are leading to the adoption of municipal ordinances.

We believe that this proposed regulation is a step in the right direction. The regulation would expand the number of facilities that must meet the program's requirements, as well as to establish more stringent standards to protect water quality, a major concern of our members, by requiring buffers and setbacks for manure application.

However, it is essential that sufficient enforcement be provided for these regulations or they will do little to correct the real and perceived problems caused by these facilities. Without sufficient enforcement, this regulation will do little to address the concerns of citizens across the Commonwealth. The Department must have the resources to fully enforce these regulations, include the imposition of necessary fines and the ability to require violators to clean up environmental damage that they have caused at their own expense, not with taxpayer funds. Without adequate staffing resources, how can we be sure that these regulations will be fully enforced?

In 91.36, additional requirements are included for animal manure storage facilities. While these facilities must comply with the Manure Management Manual and the Pennsylvania Technical Guide, will these requirements take into consideration the siting of the facility? For example, will additional protections or practices be required if a proposed facility would be sited near or next to an existing residential area or uphill from a community's water supply? And when issuing permits, will the Department

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PSATS ▮ Pennsylvania Township News ▮ Telephone: (717) 763-0930 ▮ Fax: (717) 763-9732

Trustees Insurance Fund ▮ Unemployment Compensation Group Trust ▮ Telephone: (800) 382-1268 ▮ Fax: (717) 730-0209

consider whether the facility or proposed facility would be in compliance with existing zoning ordinances? Also, will the Department consider whether there is sufficient groundwater for the proposed facility?

We support the language requiring more stringent design and operation criteria for swine, poultry, and veal manure storage to prevent environmental disasters and language clarifying that it is unlawful for any agricultural operation to discharge pollutants into the Commonwealth's waters, except as allowed by permit and regulations. It is essential to protect the Commonwealth's waters from continued pollution by these operations.

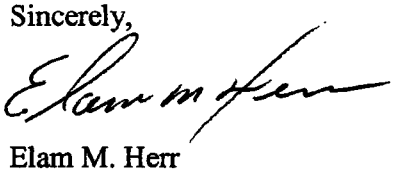
We support the concept of manure application setbacks to protect surface waters from pollution from manure application. These setbacks should be established at a distance necessary to protect the Commonwealth's waters while placing the least burden on the farmer. The Department should examine whether it would be environmentally prudent to allow reduced manure application setback requirements if certain best management practices are used for manure application, such as direct injection, but only if these BMPs would reduce the risk of pollution. If permitted by the Department, site-specific documentation should be required. Also, the Department should consider acceptable alternatives for the disposal of excess manure due to the inability to land apply because of setback requirements.

We support language to require all CAFOS to include written agreements with manure importers in their nutrient management plan. This will close an existing loophole and should reduce nutrient runoff.

While these regulations do address water quality, they do not address odor, the number one concern that we hear from our members about CAOs and CAFOs. Odor issues can have a direct effect on community's quality of life and best management practices should be required to reduce the potential effects that odor from a CAFO can have on a community.

Thank you for the opportunity to comment on these documents. We would like to work with the Department on these issues and to resolve the concerns of our members. If you would like to discuss this issue further, please contact me at the Association's office.

Sincerely,



Elam M. Herr
Assistant Executive Director

cc: Robert Nyce

166

Original: 2412

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2004 NOV 12 PM 3:44
REGULATORY REVIEW COMMISSION

Hughes, Marjorie

From: Bob Wendelgass [bwendelgass@cleanwater.org]
Sent: Friday, November 05, 2004 2:08 PM
To: RegComments@state.pa.us
Subject: Comments on Draft CAFO Regulations

November 5, 2004

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

To the Members of the Environmental Quality Board:

Clean Water Action is a statewide environmental organization with over 70,000 members that works to protect Pennsylvania's water resources. We offer the following comments on the proposed revisions to the Concentrated Feeding Animal Operation (CAFO) regulations.

Definition of a CAFO

Livestock operations that are currently regulated under Pennsylvania's CAFO program must continue to be regulated under the new regulations. In addition, any facility that meets the federal definition of a CAFO should be included, as well as large poultry operations. In particular, small and medium operations with discharges, such as manure or water contaminated with manure entering surface water, should be defined as CAFOs and fall under the regulatory umbrella.

DEP should require a livestock operation to obtain a CAFO permit if it might impact high quality or exceptional value streams, if it is located in an impaired stream for which pollution limits have been developed, or in areas where the geology makes it easier for operations handling large amounts of manure to pollute groundwater and streams. DEP should also require any livestock operation that causes a pollution incident to get a CAFO permit to ensure that future incidents will be avoided.

When determining if an operation needs a CAFO permit, DEP should also consider the livestock operation's potential to pollute based on local geology, cumulative impacts of farming operations in same area, proximity to high quality, exceptional value streams, or impaired streams, pollution loading (TMDL) restrictions.

Setbacks for Manure Spreading

We support a requirement of at least a 50 foot vegetated buffer between fields where manure is spread and streams or a 100 foot setback for manure spreading near streams. Manure spreading must also be restricted near sinkholes, drainage tiles, agricultural well heads and other features that convey water as required under the federal regulations related to setbacks.

Protecting and Restoring Streams

DEP should be required to take TMDLs into account when issuing CAFO permits in impaired watersheds. Permits should address the measures the CAFO will employ to ensure livestock facilities do not add to the pollution load. Similarly, DEP should be required to perform an anti-degradation analysis for CAFO permit applications in high quality and exceptional value watersheds to demonstrate that proposed CAFOs will not degrade water quality.
Manure storage structures with a capacity of one million gallons or more should be required to obtain a Water Quality Management (WQM) Permit. In addition, manure storage structures near an impaired watershed should be required to obtain WQM permit regardless of whether or not the agricultural operation is implementing an approved nutrient management plan.

When determining if an operation needs a WQM permit, DEP should also consider the manure storage structure's potential to pollute based on local geology, cumulative impacts of farming operations in same area, proximity to high quality, exceptional value streams, or impaired streams, and pollution loading (TMDL) restrictions.

Controlling Phosphorus Pollution

DEP's proposed phosphorus index does not provide adequate protection for water resources because it does not consider proximity to impaired watersheds, flooding potential, or leaching potential when determining whether or not fields can safely be used to spread manure without causing phosphorus pollution. Instead of using the phosphorus index, livestock operators must be required to ensure no more phosphorus is applied to fields than the crops grown there can absorb. Livestock operators must also be required to ensure no more phosphorus is applied to fields to which manure is exported than the crops grown there can absorb.

Corporate and Agribusiness Accountability

To ensure full compliance with the CAFO regulations, agri-business corporations that contract with livestock operators or livestock management companies that operate facilities under contract with farmers should be required to co-sign CAFO permits.

Enforcement

Studies of CAFO records have shown widespread non-compliance with the law. DEP, the State Conservation Commission and the Department of Agriculture must work together to substantially increase oversight and enforcement of all provisions of CAFO permits, the Nutrient Management Act and the Manure Hauler Certification Act.

Sincerely,

Robert Wendelgass
PA State Director
Clean Water Action
100 N. 17th Street, 9th Floor
Philadelphia PA 19103
215-640-8800 phone
215-640-0930 fax
bwendelgass@cleanwater.org

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Original: 2412

Hughes, Marjorie

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2004 NOV 12 PM 3:43

REGULATORY REVIEW COMMISSION

From: Karen Webber [Karen.Webber@pngaming.com]
Sent: Friday, November 05, 2004 8:43 AM
To: RegComments@state.pa.us
Subject: Factory Farms

I oppose factory farms and I oppose CAFO's (Concentrated Animal Feeding Operations).

Original: 2412

198

Hughes, Marjorie

From: eleanor.sweeney [esweeney@paonline.com]
Sent: Friday, November 05, 2004 4:24 PM
To: RegComments@state.pa.us
Subject: CAFOs

I would like to register my disapproval of any loosening of regulation on industrial agriculture, and any kind of regulatory provisions that would serve to encourage industrial agriculture at the expense of smaller "family" farms. While it might seem expeditious to control activities on a few large farms rather than many small ones, the potential for environmental degradation from concentrated operations outweighs any regulatory advantage. Vastly larger quantities of manure to store and eventually disperse leads to adverse effects on water quality. Opportunities for disastrous accidents(large spills, etc.) are compounded. Animal health and care suffer in many confinement facilities, leading to increased antibiotic use, promoting microbial resistance and possible residues in food.
Local municipalities making decisions are a Pennsylvania tradition. Municipalities should retain the power to decide whether they wish to permit such agricultural operations or not.

Eleanor C. Sweeney
326 South Lancaster Ave.
Newmanstown, PA 17073

Original: 2412

WATERKEEPER® ALLIANCE

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2004 NOV 16 PM 1:58
INDEPENDENT REGULATORY REVIEW COMMISSION

November 5, 2004

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

Dear Members of the Board,

Waterkeeper Alliance respectfully submits these comments on the Proposed Concentrated Animal Feeding Operations and Other Agricultural Operations (25 Pa. Code Chs. 91 and 92) (hereinafter "Proposed CAFO Rules"). Waterkeeper Alliance is an umbrella organization comprised of 126 community based watershed protection organizations and a unifying national office. Members of the Alliance active in Pennsylvania watersheds and communities include the Allegheny Riverkeeper, Delaware Riverkeeper, Monongahela Riverkeeper, Upper Susquehanna Riverkeeper, and the Youghiogheny Riverkeeper. Together, Waterkeeper Alliance and these local programs advocate on behalf of thousands of Pennsylvanians who enjoy the Commonwealth's public waterways and live and work in these watersheds.

Waterkeeper Alliance and its members routinely comment on regulatory proposals at the state and federal levels that potentially impact water quality and undertake litigation to protect our members' interests in healthy, vibrant and accessible waterways. Waterkeeper Alliance also conducts a national campaign to redress the adverse environmental impacts of concentrated animal feeding operations (CAFOs). As part of that initiative, Waterkeeper Alliance is the lead party to a legal challenge to the National Pollutant Discharge Elimination System Permit Regulations and Effluent Limitation Guidelines and Standards for CAFOs; Final Rule ("Final CAFO Rule") promulgated by EPA in February 2002.

Together with Delaware Riverkeeper and the Youghiogheny Riverkeeper, Waterkeeper Alliance and its members (collectively "Waterkeeper") submit the following comments for the Board's consideration.

INTRODUCTION

CAFOs are recognized as significant sources of water and air pollution. See generally, NRDC, Cesspools of Shame (2001), attached at Exhibit B. See also, EPA, "Environmental and Economic Benefit Analysis of Final Revisions to the National Pollutant Discharge Elimination System Regulation and Effluent Guidelines for Concentrated Animal Feeding Operations," 2002 at 1-4 – 1-6. Nutrient-laden runoff from waste application areas can lead to eutrophication of

828 SOUTH BROADWAY, SUITE 100, TARRYTOWN, NY 10591 TEL. 914 . 674 . 0622 FAX. 914 . 674 . 4560 WWW.WATERKEEPER.ORG

receiving waters. See Jackson, L.L., Swine Manure Management Plans in North Central Iowa: Nutrient Loading and Policy Implications, 55 J. of Soil and Water Conservation 2, at 205 (2000), attached at Exhibit C. Runoff and leachate from land application areas and from seepage from manure storage facilities contribute to excessive levels of nitrate and pathogens in drinking water supplies, including surface waters and groundwater aquifers. See, e.g., EPA, "Preamble to Final CAFO Rule," 68 Fed. Reg. 7176, 7180-81. Animal agriculture is recognized as the leading agricultural source of water contamination in Virginia and throughout the United States. EPA, National Water Quality Inventory: 2002 Report to Congress. Contamination of municipal and private water supplies by livestock waste has been linked to numerous outbreaks of human illness, often resulting in death. See Cesspools of Shame, at 21-27.

The Proposed CAFO Rules raise concerns in two areas that have the potential to adversely impact the quality of Pennsylvania's waters: manure storage structures and CAFO operational requirements, including the implementation of a Nutrient Management Plan. Waterkeeper Alliance is also submitting comments to the Pennsylvania Soil Conservation Commission regarding revisions to the Nutrient Management Regulations, 25 Pa. Code Chapter 83, Subchapter D. A copy of those comments is provided for your reference at Exhibit A.

WATER QUALITY IMPACTS FROM MANURE STORAGE STRUCTURES

Waste management structures at CAFOs are designed to hold liquid and semi-liquid manure waste from livestock confined either in indoor buildings or open feedlots. Depending on facility size, these structures may contain millions, to dozens of millions, of gallons of untreated manure, urine, and process wastewater. These structures have the potential to burst (and frequently do so) to overflow, and to leak to subsurface groundwater resources. All three of these paths contribute to the impairment of water resources enjoyed by the citizens of the Commonwealth of Pennsylvania, and members of Waterkeeper Alliance and its member programs.

Overflows of waste from livestock confinement operations are not an infrequent occurrence. On April 2, 2002, "Hog manure overflowed from a 770,000-gallon pit at a Fulton County, Pa., farm and coursed into a stream 150 yards away, turning it black." Tom Avril, "Flood of hog manure gushes into stream," Philadelphia Inquirer, April 3, 2002. In March 2001, thousands of gallons of manure overflowed from one of two 6 million-gallon lagoons at a Minnesota dairy, emptying into wetlands on a state-owned wildlife management area. See Sierra Club's "Rap Sheet on Animal Factories," for this and other examples of lagoon failure, available at http://www.sierraclub.org/factoryfarms/rapsheets/.

The common thread in all lagoon overflow or failure incidents is the immediate contamination of local surface waters, with obvious adverse impacts on water quality, aquatic habitat, and long term ecosystem dynamics.

A considerable body of research documents the connection between livestock waste management structures and the contamination of groundwater resources. See, e.g., W.F. Ritter & A.E.M. Chirnside, Impact of Animal Waste Lagoons on Ground-Water Quality, 34 Biological Wastes 39-54 (1990), DCN 20923; T.G. Ciravolo, et al., Pollutant Movement to Shallow

Ground Water Tables from Anaerobic Swine Waste Lagoons, 8 J. Environ. Qual. 126-130, all attached at Exhibit D. Frequent rains, leading to overflows from waste management structures and increased runoff or infiltration on land application areas exacerbates this contamination.

Seepage from waste storage structures, especially for liquid manure, can contribute elevated levels of nitrites and nitrates to groundwater. See Rudolph, D.L., et al., Contamination in Ontario Farmstead Domestic Wells and Its Association with Agriculture, 32 J. of Contaminant Hydrology 295-311 (1998), attached at Exhibit E. Further research indicates that clay liners may not offer a satisfactory level of protection against groundwater contamination from CAFO wastes. Repeated exposure to freeze-thaw cycles, a likely occurrence in Pennsylvania, has been shown to increase the hydraulic conductivity of clay liners by 2 to 6 times. See Kim, W.H. and D.E. Daniel, Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 118 J. of Geotechnical Engineering 1083-97 (1992).

Excess nitrate flows have been linked to incidents of "blue baby syndrome" in several states. See Cesspools of Shame at 23, attached at Exhibit B. Other research demonstrates that nitrates, pesticide residues, and fecal coliforms all migrate to groundwater from CAFO land application areas. See id., see also Saini, Ruchita, et al., Effect of Manure Application and Rainfall Timing on the Leaching of Labeled Bacteria Through Soil Columns, ASAE Meeting Paper No. 01-2195 (2001), attached at Exhibit F . These contaminants, in turn, cause risks to rural residents who rely on wells, or to users of hydrologically connected surface waters.

WATERKEEPER COMMENTS ON MEASURES RELATED TO WASTE MANAGEMENT STRUCTURES

Waterkeeper makes the following recommendations regarding the Proposed CAFO Rules and the role of Pennsylvania Department of Environmental Protection (hereinafter "Pa. DEP") in the CAFO permitting scheme.

1) Given subsurface nitrate contamination, and long term potential for unremediated groundwater contamination, Proposed CAFO Rules must be revised to require clean up bond for CAFO manure management structures with a capacity of one million gallons or more.

2) Manure storage structures with a capacity of one million gallons or more should be required to obtain a Water Quality Management (WQM) Permit. (25 Pa. Code § 91.36(a)(3)(ii))

3) Manure storage structures near an impaired watershed should be required to obtain WQM permit regardless of whether or not the agricultural operation is implementing an approved nutrient management plan. (25 Pa. Code §91.36(a)(3)(i)(C))

Waterkeeper notes that the implementation of a nutrient management plan will have little bearing on the performance of the waste management structure. Such plans are designed to ensure that CAFO wastes are applied to crop or pasture fields and utilized at an environmentally sustainable rate. Agronomic uptake will not ensure that lagoons are

properly constructed, operated, and maintained, or that lagoon site location will not create a potential hazard to surface water or groundwater quality. A WQM permit is the only viable means to address these concerns.

4) When determining if an operation needs a WQM permit, DEP should also consider the manure storage structure's potential to pollute based on local geology, cumulative impacts of farming operations in same area, proximity to high quality, exceptional value streams, or impaired streams, and pollution loading (TMDL) restrictions. (25 Pa. Code § 91.36(a)(7))

Waterkeeper encourages the Board to consider the impact of CAFO manure management structures within the context of other, local sources of pollution. This cumulative impact review is essential to avoid degradation of existing water quality as a result of CAFO waste management structure operation. Waterkeeper emphasizes that a cumulative hydrologic impact assessment should be required that includes all the influences on the water resources in any given watershed. This should include a requirement that existing source water plans, mine drainage remediaton plans, and existing TMDLs be part of the information considered.

NUTRIENT MANAGEMENT PLANS AND OTHER OPERATIONAL REQUIREMENTS.

The land application of CAFO wastes, while providing valuable fertilizer inputs, is among the leading causes of impaired water quality in the United States. See EPA, National Water Quality Inventory: 2002 Report to Congress, at 12 - 14. Nutrient-laden runoff from waste application areas can lead to eutrophication of receiving waters. See Jackson, L.L., Exhibit B, at 205. Runoff and leachate from land application areas contributes to excessive levels of nutrients and pathogens in drinking water supplies, including surface waters and groundwater aquifers. See, e.g., EPA, "Preamble to Final CAFO Rule," 68 Fed. Reg. 7176, 7180-81. There is an ample body of evidence demonstrating that CAFOs and crop areas receiving CAFO wastes are significant sources of excess nitrogen and phosphorus flows to surface and ground waters. See, e.g., Berka, C., et al., Linking Water Quality with Agricultural Intensification in a Rural Watershed, 127 Water Air and Soil Pollution 389-401 (2001), attached at Exhibit G.

Waterkeeper encourages the Board to adopt regulations that prioritize the protection of the Commonwealth's water resources. As envisioned by U.S. EPA's NPDES regulations for CAFOS, 40 CFR Part 412, a nutrient management plan (hereinafter, "NMP") is the key tool for controlling unwanted runoff of CAFO wastes from land application areas. The Proposed CAFO Rules would require that a CAFO NMP be developed in accordance with 25 Pa. Code Chapter 83, Subchapter D and approved by the State Conservation Commission or county conservation district. 25 Pa. Code §92.5(d)(1). While the requirement for approval of a CAFO NMP reflects a welcome degree of oversight, the two bodies charged with approval of an NMP do not have a primary responsibility for the protection of the Commonwealth's environment. The conservation districts, for example, have no enforcement capacity. It is essential that Pa. Department of Environmental Protection have a co-approval role in order to bring the considerable and specific expertise of this agency to bear on CAFO permit applications. This section of the regulations

Rules and anticipate continuing efforts to protect the quality and integrity of Pennsylvania watersheds.

Sincerely,

Jeffrey Odefey
Staff Attorney
Waterkeeper Alliance

Maya van Rossum
Delaware Riverkeeper

Beverly Braverman
Youghiogheny Riverkeeper

districts, for example, have no enforcement capacity. It is essential that Pa. Department of Environmental Protection have a co-approval role in order to bring the considerable and specific expertise of this agency to bear on CAFO permit applications. This section of the regulations should be amended to create cooperative inter-agency process for review and approval of CAFO NMPs.

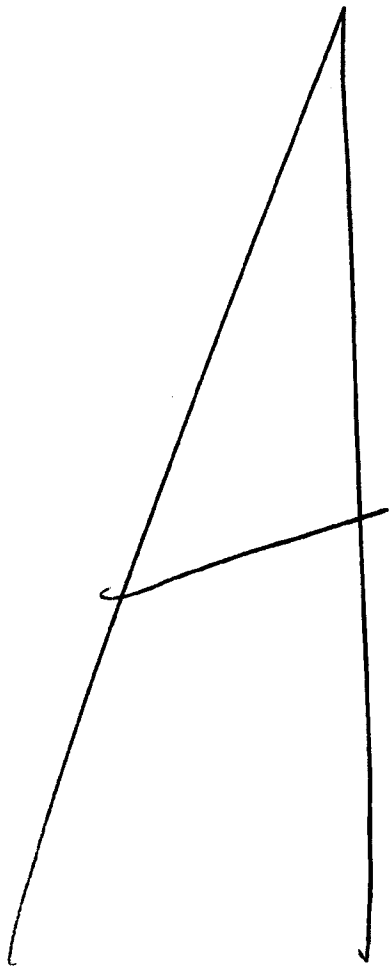
Additionally, the regulations should be expanded to provide more explicit direction to permit writers (and NMP reviewers) – direction that should implement specific operational practices and prohibitions in order to adequately safeguard Pennsylvania's aquatic resources. Such directions, perhaps added to 25 Pa. Code §91.36(b)(1), would require Pa. DEP a) to certify that a CAFO application will not violate TMDLs or water quality standards in watersheds that are impaired by high levels of nutrients and/or pathogens and that the permit contains measures to ensure that CAFO operation under application will not add to pollutant loads in such watersheds; and, b) to perform an anti-degradation analysis for CAFO permit applications in high quality and/or exceptional watersheds in order to certify that the proposed CAFO will not degrade existing water quality.

Waterkeeper also suggests that additional requirements be added to this section to compel CAFO applicants to develop NMPs that not only meet existing Pennsylvania standards for Animal Operations, but provide additional watershed protections by banning the application of manure on frozen, saturated, or snow covered soils. Further comment on this important regulatory component is provided in our comments to the State Conservation Commission regarding the Proposed Revisions to the Nutrient Management Regulations.

In order to ensure that all livestock operations that have the potential to adversely impact water quality obtain NPDES permits, DEP should require any livestock operations to obtain permits where: an operation has caused a pollution incident; is located in an impaired stream for which pollution limits have been developed, or in areas where the geology makes it easier for operations handling large amounts of manure to pollute groundwater and streams; or is located in the watershed of a high quality or exception value stream. (25 Pa. Code § 92.1) Permits should also be required where private or public drinking water supply wells or sources are located within 1 mile of the livestock operation.

When determining if an operation needs a CAFO permit, DEP should also consider the manure storage structure's potential to pollute based on local geology, cumulative impacts of farming operations in the same area, proximity to high quality, exceptional value streams, or impaired streams, pollution loading (TMDL) restrictions and the cumulative impacts of other types of water resource impairment. (25 Pa. Code § 92.1)

Waterkeeper Alliance, Delaware Riverkeeper, the Youghiogheny Riverkeeper recognize the pivotal importance of agriculture to Pennsylvania's economy. However, we also recognize the inestimable value that the Commonwealth's stream, rivers, lakes and aquifers provide to residents and visitors alike. We appreciate this opportunity to comment on the Proposed CAFO



WATERKEEPER® ALLIANCE

November 5, 2004

State Conservation Commission
Agricultural Building, Room 405
2301 Cameron Street
Harrisburg, PA 17110

Re. PROPOSED NUTRIENT MANAGEMENT PLAN REGULATIONS

Via E-mail and Priority U.S. Mail

Dear Commission Members,

Waterkeeper Alliance respectfully submits these comments on the Proposed Revisions to Pennsylvania's Nutrient Management Regulations, 25 Pa. Code Chapter 83, Subchapter D (hereinafter "Proposed NMP Rules"). Waterkeeper Alliance is an umbrella organization comprised of 126 community based watershed protection organizations and a unifying national office. Members of the Alliance active in Pennsylvania watersheds and communities include the Allegheny Riverkeeper, Delaware Riverkeeper, Monongahela Riverkeeper, Upper Susquehanna Riverkeeper, and the Youghiogheny Riverkeeper. Together, Waterkeeper Alliance and these local programs advocate on behalf of thousands of Pennsylvanians who enjoy the Commonwealth's public waterways and live and work in these watersheds.

Waterkeeper Alliance and its members routinely comment on regulatory proposals at the state and federal levels that potentially impact water quality and undertake litigation to protect our members' interests in healthy, vibrant and accessible waterways. Waterkeeper Alliance also conducts a national campaign to redress the adverse environmental impacts of concentrated animal feeding operations (CAFOs). As part of that initiative, Waterkeeper Alliance is the lead party to a legal challenge to the National Pollutant Discharge Elimination System Permit Regulations and Effluent Limitation Guidelines and Standards for CAFOs; Final Rule ("Final CAFO Rule") promulgated by EPA in February 2002.

Together with Delaware Riverkeeper and the Youghiogheny Riverkeeper, Waterkeeper Alliance and its members (collectively "Waterkeeper") submit the following comments for the Board's consideration. In addition, we wish to express our support for, and agreement with, all of the comments, concerns, and suggestions raised in the comment letter submitted by Citizens for Pennsylvania's Future ("PennFuture").

INTRODUCTION

Waterkeeper's interest in the Proposed NMP Rules stems from the central role these plans play in limiting the flow of pollutants from Concentrated Animal Feeding Operations

828 SOUTH BROADWAY, SUITE 100, TARRYTOWN, NY 10591 TEL. 914 . 674 . 0622 FAX. 914 . 674 . 4560 WWW.WATERKEEPER.ORG

("CAFOs"), as contemplated by federal NPDES regulations (40 CFR Parts 122, 123, 412) and revisions to Pennsylvania's Animal Feeding Operations regulations (25 Pa. Code Chs. 91 and 92) currently proposed by Pennsylvania Department of Environmental Protection. Nutrient Management Plans ("NMPs" or "an NMP") are effectively the sole mechanism for controlling the flow of contaminants from CAFO land application areas. As a result, they are the last line of defense for Pennsylvania's rural waterways. While existing Pennsylvania NMP regulations provide significant protection for the Commonwealth's lakes, streams, and rivers, the Proposed NMP Rules must be improved to increase the security of these waterways while enabling Pennsylvania's farmers to make beneficial, and efficient, use of a valuable, nutrient rich resource.

SPECIFIC CONCERNS

1. Nutrient management regulations need to provide detailed guidance.

The revisions proposed by the Soil Conservation Commission ("the SCC") incorporate a Phosphorus Index to guide land application of CAFO manure and wastewater. Despite the importance of phosphorus based land-application limits, the Proposed NMP Rules do not include any specific guidance or detailed description of the Phosphorus Index. Instead, they rely on a generalized definition of a Phosphorus Index, with the apparent assumption that Commonwealth residents and the regulated community will agree that the regulations refer to phosphorus index incorporated into USDA-NRCS Pennsylvania Practice Standard 590.[1] See Proposed 25 Pa. Code §§ 83.201 and 83.292(e). In order for the Proposed NMP Rules to effectively protect the Commonwealth's public waters, they must include specific technical guidance for the development of an NMP that incorporates a Phosphorus Index. Furthermore, the Rules must spell out, in detailed restrictions, potential limitations on manure applications based on limits derived from the Phosphorus Index, as required under the Nutrient Management Act. 3 P.S. § 1704(1)(ii).

2. Manure on all farms should be applied at phosphorus rates.

Phosphorus is the limiting nutrient for freshwater ecosystems; excessive inputs of phosphorus can lead to massive algal growth and eutrophication. CAFOs are recognized as significant sources of phosphorus, especially in the runoff from land application areas. EPA, Preamble to the Proposed National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations(Dec. 2000) ("2000 Preamble") at 32-4, 41-2 (available at http://www.epa.gov/npdes/pubs/cafo.pdf). A 1995 estimate notes that 36 percent of all nitrogen and 64 percent of all phosphorus inputs to watersheds in the northeastern United States come from manure. General Accounting Office, Animal Agriculture: Information on Waste Management and Water Quality Issues, June 1995, at 14-15 (available at http://www.gao.gov/archive/1995/rc95200b.pdf).

[1] Reviewed at http://pubs.cas.psu.edu/freepubs/pdfs/UC180.pdf for purposes of this comment letter.

Management techniques for phosphorus flows from CAFOs must treat both organic and inorganic forms of the nutrient. Over 70 per cent of the phosphorus in animal manure is in organic form, which is highly water soluble and prone to leaching through soils to groundwater and surface waters. EPA, 2000 Preamble, at 42, also EPA, "Environmental Assessment of Proposed Revisions to the National Pollutant Discharge Elimination System Regulation and the Effluent Guidelines for Concentrated Animal Feeding Operations," Jan. 2001, at 2-10. Inorganic phosphorus, on the other hand, tends to adhere to soils and reaches surfaces waters through sediment-laden runoff from land application areas. Id.

Despite the pressing need to limit phosphorus discharges from CAFOs, THE SCC has neglected to include any meaningful operational controls or practices. The SCC's current response to the threat of phosphorus runoff, the inclusion of a "P Index" as a non-binding criteria within the CNMP, will not provide Pennsylvania waterways with sufficient protection from phosphorus. The Proposed NMP Rules must be revised to include tangible, effective, and non-discretionary measures, including a mandatory phosphorus balance for all fields that receive manure. See, e.g., Rotz, C. Alan, et al., Production and Feeding Strategies for Phosphorus Management on Dairy Farms in New York, ASAE Meeting Paper No. 01-2013 (2001), attached at Exhibit A.

3. The Proposed NMP Rules offer inadequate protection for Pennsylvania's water resources.

    a. Nutrient management planning must take into account potential flows to impaired waterways.

Waterkeeper urges the SCC to bear in mind the ultimate importance of nutrient management planning in Pennsylvania – the protection of Pennsylvania's outstanding freshwater resources and the watersheds they contribute to, particularly the Delaware and Chesapeake Bays. In that light, nutrient management planning must look beyond the farm and field boundaries, and take into consideration the impact farm manure management has on water quality. The SCC must recognize that water quality is an integral component of nutrient management planning.

The Proposed NMP Rules do not take water quality impacts into consideration, and must be revised to do so. The Pennsylvania Department of Environmental Protection reports that 57,217 stream miles (84 % of the assessed miles) support their designated fish and aquatic life use but that at least 10,762 miles (16%) are impaired. Commonwealth of Pennsylvania, Department of Environmental Protection, *2004 Pennsylvania Integrated Water Quality Monitoring and Assessment Report: Clean Water Act Section 305(b) Report and 303(d) List* (hereinafter "*Pennsylvania Integrated Report*"). For 3,876 stream miles (22%) listed as impaired in Pennsylvania, agriculture is identified as the source of the impairment. *Pennsylvania Integrated Report*. Agricultural pollution of waterways is a leading cause of waterbody impairment, contaminating streams and rivers with siltation and excess nutrients. According to DEP, siltation has caused the impairment of 5,604 stream miles (28%) and nutrients have caused the impairment of 2,347 stream miles (12%). *Pennsylvania Integrated Report*.

Despite agriculture's widespread contribution to impaired rivers and streams in Pennsylvania, the Proposed NMP Rules make absolutely no effort to use nutrient management planning as a tool to protect and restore the Commonwealth's impaired waterbodies. As a result, there is no systematic effort to implement controls on manure application that are based on the environmental impacts of this practice. Farmers who apply animal manure, whether from their own CAFO or imported from another facility, must be required to determine manure application rates that are linked to tangible reductions in nutrient loading in streams and rivers. Furthermore, NMPs on these facilities must include additional measures to reduce and/or control run-off and groundwater infiltration in order to prevent further nutrient flows to impaired waters.

Implementation of this planning priority now will benefit both the agriculture community and Pennsylvania's residents in advance of the development of Total Maximum Daily Loads ("TMDLs") for the Commonwealth's impaired waters. Pennsylvania must complete TMDLs for all watersheds that were listed as impaired in 1996 by 2009, according to an agreement with EPA. Additionally, once a TMDL is developed, it must be implemented within five years.

b. Nutrient management planning must take into account the need to protect outstanding and high quality waters.

Pennsylvania DEP has designated 1,716 miles of the Commonwealth's streams as Exceptional Value waterways and a further 19,274 miles as High Quality.[2] Nutrient management planning in these watersheds needs to serve as an active tool in the preservation of these outstanding resources. The Proposed NMP Rules fail to account for the need to protect water quality these watersheds from degradation by manure-based pollutants. NMPs on CAFO and waste receiving farms in High Quality and Exceptional Value watersheds must incorporate additional limitations and operational requirements in order to ensure that nutrient runoff and infiltration are avoided or minimized to the greatest extent possible.

c. The nutrient management and NMP approval process must consider the cumulative impacts of manure applications throughout a watershed.

Nutrient management and manure application on individual farms and CAFOs does not occur in a vacuum. Each farm or facility that applies manure adds to the total nutrient and pathogen load within any given watershed. Individual NMPs, including export agreements, must be analyzed against the combined manure production and application within a given watershed. In short, every effort must be made to avoid overloading watersheds with applied nutrients that exceed both the assimilative capacity of the area's agricultural fields and the carrying capacity of the watershed.

4. Pennsylvania's phosphorus index offers inadequate water quality protection.

The proposed Pennsylvania Phosphorus-Index is a risk assessment tool that determines the risk or vulnerability of phosphorus loss to surface water. It does <u>not</u> estimate the actual loss of phosphorus. Calculating an estimation of actual phosphorus losses would improve the

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[2] Pennsylvania Department of Environmental Protection, *Protecting the Commonwealth's Waters* (visited October 15, 2004) http://www.dep.state.pa.us/dep/deputate/watermgt/Wqp/WQStandards/antideg/LT-AntidegTstmy1.htm.

identification of critical phosphorus loss sites. To estimate phosphorus loss, the Pennsylvania Phosphorus-Index would require additional development to create a spatially based model requiring data inputs of the soil chemical, physical, and microbial characteristics; the timing of nutrient applications; landscape features; and hydrological events. Furthermore, the proposed Pennsylvania Phosphorus-Index does not incorporate phosphorus-loss reductions that may be required to meet local TMDLs.

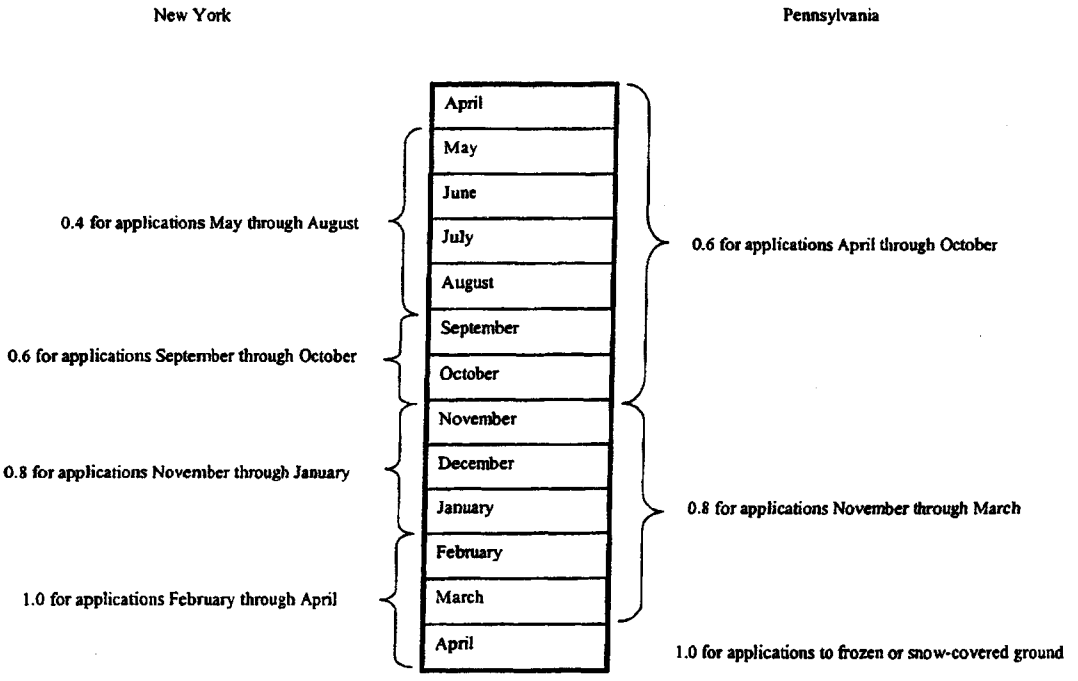
The proposed Pennsylvania Phosphorus-Index has an inadequate initial screening process. Pennsylvania's environmental threshold limit of 200 ppm (equivalent to 400 lb/ac phosphorus) is one of the highest thresholds set by any state. Other states using the Mehlich-3 soil phosphorus test have environmental thresholds of 150 (Arkansas and Delaware) or 130 (Oklahoma) ppm. Kansas has an environmental threshold of 200 ppm, but phosphorus additions are not allowed, regardless of the phosphorus-index outcome.

Soil P test thresholds and recommendations for Mehlich-3 soil phosphorus testing states

	Threshold		
State	Agronomic	Environmental	Recommendation
Arkansas	50	150	>150 ppm add no P, provide buffers next to streams, overseed pastures with legumes to aid P removal, provide constant soil cover to minimize erosion
Delaware	50	150	>150 ppm use P-Index or P-based NMP
Kansas	50	200	Above 200 ppm no addition P regardless of P-Index rating
Oklahoma	30	130 and 200	Non-nutrient limited watersheds with 130-200 ppm halve P rate and adopt measures to decrease runoff and erosion, >200 ppm P addition not to exceed crop removal; nutrient limited watersheds with 60-130 ppm halve P rate, > 130 ppm add no P; slopes 8-15% halve P rate, slopes >15% add no P
Pennsylvania	50	200	>200 ppm and <150 feet from water body use P-Index

Recent research indicates that the optimum range of phosphorus for agronomic crops is 30 – 50 parts per million. Wihelm J. Kogelmann et al., A Statewide Assessment of the Impacts of P-Index Implementation in Pennsylvania: Phase I Report, p. 9 (July 8, 2002) (submitted to the Pennsylvania State Conservation Commission and Pennsylvania Department of Agriculture). A review of soil conditions undertaken by these researches revealed that 48% of the soil samples taken statewide had soil test phosphorus values of 50 parts per million or more. Id. Waterkeeper strongly encourages the SCC to develop a phosphorus index that more accurately reflects agronomic needs, current soil conditions, and the need to sharply reduce phosphorus contributions to public waters. Additionally, Pennsylvania's distance to water body parameter of 150 feet is too weak and should be reduced. This parameter in the initial screening should take into consideration if the water body is impaired or phosphorus sensitive.

The highest seasonal risk for phosphorus losses is during cold, wet periods and the opportunity for phosphorus loss exists for 50 to 100 days after application. The source factor portion of the Pennsylvania Phosphorus-Index does not adequately address this issue. The timing of phosphorus applications should be discrete parts of the index and given greater weight than they currently are. Below is a comparison of seasonal ranges and penalties for the New York Phosphorus-Index and the Pennsylvania Phosphorus-Index.



Pennsylvania should adopt seasonal ranges and values at least as strong as what is used in New York with an additional note that any applications to frozen or snow-covered ground should receive a value of 1.0.

Pennsylvania is also too lenient in the length of time, seven days, allowed to incorporate fertilizer and manure in the proposed phosphorus-index source factor. The Pennsylvania Phosphorus-Index should adopt ranges and values at least as strong as what is used in the New York Phosphorus-Index:

- Injection or surface banded at least two inches deep (0.2)
- Broadcast and incorporate within one to two days (0.4)
- Broadcast and incorporate within three to five days (0.6)
- Broadcast and not incorporate within five days (0.8)

The proposed Pennsylvania Phosphorus-Index does not consider multiple applications of manure and fertilizer. Individual applications, whether commercial fertilizer or manure, should be scored separately with a source factor determined for each and then summed for a total source factor.

The transport factor in the proposed Pennsylvania Phosphorus-Index does not clearly delineate differences between dissolved phosphorus and particulate phosphorus. Different runoff mechanisms are responsible for different kinds of phosphorus lost at different locations in an application area. Dissolved phosphorus is associated with saturation-excess overland flow runoff and leaching. This kind of phosphorus engages a greater depth of soil profile, is dependent on the position in the landscape, and dependent on soil depth (available water storage capacity).

Areas prone to saturation may have a high ground water table or an impermeable layer or bedrock at a shallow depth. This type of runoff produces flow for as long as precipitation exceeds evaporation. Particulate phosphorus is associated with infiltration-excess overland flow runoff and erosion. This kind of runoff is dependent on the soil type (infiltration rate and soil erodibility) but independent of the position of the site in the landscape. A large amount of particulate phosphorus is lost during a single intense storm even though the runoff volume is a small percentage of the total annual runoff. Both New York and Virginia consider the different forms of phosphorus in their phosphorus indices and Pennsylvania should as well.

The contributing distance upper boundary (500 feet) and contributing lower boundary distance (150 feet) are too high. For comparison, New York uses 300 feet for a perennial stream, 200 feet for an intermittent stream and goes down to 50 feet for a perennial stream and 25 feet for an intermittent stream. Additionally, the proposed Pennsylvania Phosphorus-Index does not distinguish between kinds of water bodies (perennial, intermittent), does not consider flooding risk or frequency, does not consider slope, does not consider the presence of concentrated flow, and does not adequately address direct connections from field to water bodies. The transport factor for the Pennsylvania Phosphorus-Index should be completely overhauled to include the above components.

Pennsylvania has the weakest phosphorus-index interpretation of the Chesapeake Bay watershed states (see below). Pennsylvania has the highest upper limit for a "low" rating with 59, while other states use 50 or 30. The "medium" rating management guidance is too lenient. The guidance should limit phosphorus-based applications to crop removal rates and limit the use of nitrogen-based applications to one year in a three-year cycle. Stronger language for high and very high management guidance is recommended, requiring erosion, phosphorus limiting best management practices, and remediation.

Pennsylvania P-Index Interpretation

P-Index Value	Rating	Management Guidance
0-59	Low	Nutrients can be applied to meet the nitrogen crop requirement; low potential for phosphorus loss; maintenance of current farming practices is recommended to minimize the risk of adverse impacts on surface waters
60-79	Medium	Nutrients can be applied to meet the nitrogen crop requirement; medium potential for phosphorus loss; the chance for adverse impacts on surface waters exists; an assessment of current farm nutrient management and conservation practices is recommended to minimize the risk of future phosphorus losses
80-99	High	Nutrients can be applied to meet the phosphorus crop removal; high potential for phosphorus loss and adverse impacts on surface waters; soil and water conservation measures and phosphorus-based management plans are needed to minimize the risk of phosphorus loss
>100	Very High	No phosphorus can be applied; very high potential for phosphorus loss and adverse impacts on surface waters; conservation measures and a phosphorus-based management

New York P-Index Interpretation

P-Index Value	Rating	Management Guidance
<50	Low	Phosphorus application according to N-based NMP
50-74	Medium	Phosphorus application according to N-based NMP, use BMPs
75-99	High	Phosphorus applications should not be greater than crop removal
≥100	Very High	No phosphorus should be added.

Delaware and Maryland P-Index Interpretation

P-Index Value	Rating	Management Guidance
≤50	Low	Nitrogen-based nutrient management planning is satisfactory for this site; soil P levels and P loss potential may increase in the future due to N-based nutrient management
51-75	Medium	Practices should be implemented to reduce P losses by surface runoff, subsurface flow, and erosion; nitrogen-based nutrient management should be implemented no more than one year out of three; phosphorus-based nutrient management should be implemented two years out of three during which time P applications should be limited to the amount expected to be removed from the field by crop harvest or soil test P based application recommendations, whichever is greater
76-100	High	Phosphorus-based nutrient management should be used for this site; phosphorus applications should be limited to the amount expected to be removed from the field by crop harvest or soil test P based application recommendations; all practical management practices for reducing P losses by surface runoff, subsurface flow, or erosion should be implemented
>100	Very High	No phosphorus should be applied to this site; active remediation techniques should be implemented in an effort to reduce the P loss potential of this site

Virginia P-Index Interpretation

P-Index Value	Rating	Management Guidance
0-30	Low	Phosphorus application according to N-based NMP
31-60	Medium	Phosphorus application should not be greater than 1.5 times crop removal rate
61-100	High	Phosphorus applications should not be greater than crop removal
>100	Very High	No phosphorus should be added

5. The Proposed NMP Rules must be revised to include additional control measures necessary to protect water quality.

    a. The Proposed NMP Rules must be revised to prohibit winter application of manure [Suggested Revision to 25 Pa. Code § 83.294(g)]

The winter application of waste in not conducive to beneficial reuse of nutrients contained in livestock waste and presents an unjustifiable threat to the quality and integrity of surface and ground waters. Considerable research has demonstrated that runoff from manure application on frozen or snow-covered ground creates a high risk of adverse water quality impact. Fleming, Ron, et al., Impacts of Winter Spreading of Manure on Water Quality – Literature Review, attached at Exhibit B. Spring runoff following winter applications of manure is likely to contain considerably higher concentrations of nitrogen, phosphorus and potassium. Id., citing Phillips, P.A., et al. "Pollutant Potential and Corn Yields from Selected

Rates and timing of Liquid Manure Applications," Trans. Am. Soc. Agr. Eng. 139-144 (1981). Further research documents the excessive loss of nutrients from manure applied to frozen or snow-covered ground. See Minnesota Planning Agency Environmental Quality Board, "Final Generic Environmental Impact Statement on Animal Agriculture, Soil and Manure Issues: Technical Work Paper: Effect of animal agriculture on soil in Minnesota," ("Minnesota GEIS") June 2001, at 53, excerpt attached at Exhibit D. See also van Es, Harold, et al., "The Effect of the Timing of Animal Manure Application on Nutrient Fate Under Maize and Grass," at 1 of 7, attached at Exhibit D.

The result of a literature review conducted by Canadian researchers showed that nitrogen losses in runoff following winter manure application can be as high as 20 per cent; frozen soils are virtually impervious, leading to a high likelihood of runoff of pollutants from manure covered ground; and the risk of manure runoff is similar for frozen bare ground and snow covered ground. See Fleming, et al., at Exhibit B.

b. Sound nutrient management strategies must also control pathogens.

CAFOs are a leading contributor to impaired water quality throughout the country. EPA, National Water Quality Inventory, 2000 at ch. 2, p. 13-14. According to EPA, pathogens rank second highest in the list of pollutants of concern for rivers and streams, behind siltation and ahead of nutrients. Id. at p.15. For all of the Draft Permit's emphasis on nutrient management, it does very little to address the more pressing issue of pathogens.

A significant body of research has concluded that runoff from manure piles and land application can carry pathogens to surface or groundwater through highly permeable soils or drainage tiles. See Sobsey, M.D., Pathogens in Animal Wastes and the Impacts of Waste Management Practices on Their Survival, Transport and Fate, summary attached at Exhibit E. See also Minnesota GEIS at 3, Exhibit C.[3] Pathogens have demonstrated the ability to survive in manure storage piles and land application methods. Id. Current manure storage systems, including those contemplated by the Proposed NMP Rules, "contain all of the favorable environmental characteristics for pathogen survival and pathogen decrease is particularly slow for some organisms." Id. at 54. In order to prevent the dangerous flow of pathogens to surface waters, the SCC must modify the Proposed NMP Rules to require the immediate incorporation of broadcast manure and liquid manure waste. See Soupir, Michelle, et al., Bacteria Release and Transport from Livestock Manure Applied to Pastureland, ASAE Meeting Paper No. 032149 (2003), attached at Exhibit F.

c. The Proposed NMP Rules must contain specific conditions on manure application timing. [Suggested Revision to 25 Pa. Code § 83.294(b) or (f)]

There is an ample body of evidence demonstrating that CAFOs and crop areas receiving CAFO wastes are significant sources of excess nitrogen and phosphorus flows to

[3] The entire Minnesota GEIS is available at http://www.eqb.state.mn.us/geis/ (last visited March 18, 2004). The reports cited in the sections of the document referred to above are hereby incorporated into these comments by reference.

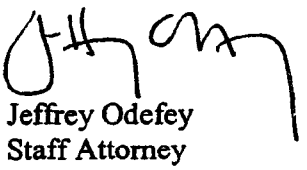
surface and ground waters. See, e.g., Berka, C., et al., Linking Water Quality with Agricultural Intensification in a Rural Watershed, 127 Water Air and Soil Pollution 389-401 (2001), attached at Exhibit G.

In particular, recent research on New York model farms shows that early-fall and late-fall manure applications result in high levels of nitrate leaching. See van Es, H.M., et al., Management effects on nitrogen leaching and guidelines for a nitrogen leaching index for New York, 57 J. of Soil and Water Conservation 6: at *2, attached at Exhibit H. This study also indicates that poorly timed manure applications to clay loam soils may result in excessive phosphorus leaching, leading in turn to phosphorus levels that are "10 to 70 times the level of concern in surface water bodies." Id (emphasis added).

Another New York study revealed that late-spring sidedressing of manure provides more plant available nitrogen than a spring plowdown, the difference being lost to either the air or water. See id. at 2. This study also indicated that fall applications of manure, "when soils are warm and crop uptake is non-existent is likely to result in considerable nitrate leaching losses during the following winter and spring." Id.

Waterkeeper Alliance, Delaware Riverkeeper, the Youghiogheny Riverkeeper, and their individual members appreciate this opportunity to provide comments and suggestions on the Commission's proposed regulatory revisions. We look forward to working with the Commission towards our shared goals of protecting Pennsylvania's waters for the future. For your convenience, we have also attached a copy of our comments regarding proposed revisions to 25 Pa. Code Chapters 91 and 92 (Concentrated Animal Feeding Operations etc) also submitted today to the Environmental Quality Board.

Sincerely,



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