



Agriculture and Markets

ANDREW M. CUOMO
Governor

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Commissioner

June 9, 2016

Steven Ricca, Esq.
Bond, Schoeneck & King
Avant Building – Ste. 900
200 Delaware Ave.
Buffalo, NY 14202-2107

Re: AML §305-a (1) Review of the Town of Wheatfield's Local Laws No. 3 and No. 4 of 2014 as Applied to Milleville Brothers Farms land application of biosolids in the Town of Wheatfield

Dear Mr. Ricca:

Thank you for your submissions on behalf of the Town of Wheatfield (the "Town"), dated July 14, 2015 and December 21, 2015 in connection with the above-referenced proceeding. The Department has completed its review of the Town of Wheatfield's Local Law No. 3 of 2014 and Local Law No. 4 of 2014 (regulating, among other things, the land application of biosolids derived from municipal wastewater) with respect to Milleville Brothers Farms' (Milleville Farms) proposed land application of *Equate* on one permitted site in the Town of Wheatfield (Nash Road NIQ-01011), for compliance with Agriculture and Markets Law (AML) §305-a(1).

For the reasons set forth below, as well as those set forth in the Department's letter of May 1, 2015, the Department finds that Wheatfield's Local Laws No. 3-2014 and No. 4-2014, as administered, unreasonably restrict the Milleville Farms, farm operation in violation of AML §305-a (1) and that the Town has not demonstrated that the public health or safety is threatened by the farm operation's land application of *Equate* biosolids on land used for crop production.

The Department considered the following in its review: (1) the Town of Wheatfield's Zoning Law; (2) the correspondence of David Milleville, Milleville Farms, dated September 23, 2014, (together with its accompanying documents); (3) Town Supervisor Robert B. Cliffe's letters dated November 19, 2014 and December 3, 2014 (together with accompanying materials submitted); (4) your letters, submitted on behalf of the Town of Wheatfield, dated January 30, 2015, May 11, 2015, July 14, 2015, and December 21, 2015 (together with accompanying materials submitted); (5) a December 7, 2015 conference call between yourself and representatives of the Town, the Town's technical consultant, representatives of NYSDEC, and the Department; (6) two letters (copies attached hereto)

dated March 14, 2016 from Sally Rowland, NYSDEC (together with accompanying materials); and (7) a site review by Matthew Brower (Department Associate Environmental Analyst).

Background

By letter dated September 24, 2014, the Milleville Brothers Farms (Milleville Farms) requested an Agriculture and Markets Law (AML) §305-a review of the Town of Wheatfield's Local Law No. 3 of 2014 and Local Law No. 4 of 2014, which, among other things, regulate application of biosolids derived from municipal wastewater, as it related to the farm's proposed biosolids land application. On May 1, 2015, the Department determined that: (1) Milleville Farms is a "farm operation" for purposes of AML §305-a; and (2) the Town of Wheatfield's Local Laws No. 3-2014 and No. 4-2014, as administered, would unreasonably restrict the Milleville Farms, farm operation, in possible violation of AML §305-a(1). The Department offered the Town the opportunity to provide the Department with any further documentation or other evidence that it may have to provide support for the Town's contention that the public health or safety would be threatened by the farm operation's proposed application of biosolids. By letters dated July 14, 2015 and December 21, 2015, the Town supplemented prior submissions to the Department.

Department's AML §305-a Review

The Department adheres to the substantive analysis contained in its May 1, 2015 with respect to the Town's local law and its application to Milleville Farm. This letter assumes familiarity with the Department's May 1 findings and analysis, and addresses the arguments raised on behalf of the Town in the July 14, 2015 and December 21, 2015 letters.

AML Section 305-a provides express authority to preempt local laws unreasonably restricting a farm operation in an agricultural district

AML Article 25-AA (Agricultural Districts Law) forms the cornerstone of the State's agricultural protection program. It implements the New York State constitutional directive to preserve and protect the State's agricultural lands as important State resources [N.Y. Constitution Art. XIV, §4]. AML §305-a prohibits local governments from enacting and administering laws that would unreasonably restrict farm operations within a county-adopted, State-certified agricultural district, unless the locality can show a threat to the public health or safety. AML §305-a grants the Department the power to override local regulations when it determines that local governments unreasonably restrict or regulate farm operations within agricultural districts in contravention of the purposes of AML Article 25-AA, Agricultural Districts, unless the local government can demonstrate that the public health or safety is threatened [*Town of Lysander v. Hafner*, 96 N.Y. 2d 558, 733 N.Y.S.2d 358 (2001)].

The Department recognizes a local government's right to regulate certain aspects of the storage and disposal of solid wastes within its geographic boundaries (ECL §27-0711) as well as the grant of the discretionary power to local government to adopt local

laws more stringent than the minimum applicable requirements set forth in the DEC's solid waste disposal regulations, *E.g.*, [*Monroe-Livingston Sanitary Landfill, Inc. v. Town of Caledonia*, 51 N.Y.2d 679, 683-684 (1980)]. However, the local government's power to establish more stringent regulatory requirements concerning the disposal of solid waste does not relieve the requirement that local laws be consistent with "general" State laws. [NY Const., Art. IX, §2; Municipal Home Rule Law (hereafter "MHRL") §10].

Section 305-a(1) is a "general law," which applies to all local governments and does not violate municipal home rule. MHRL §2(5). In addition, Section 305-a deals with a matter of State concern - the preservation of farmland, and local law must be consistent with its provisions. Accordingly, although the Town has the discretion to regulate the application of biosolids more stringently than DEC, those local regulations are still subject to the provisions of AML §305-a.

In short, Section 305-a(1) bars the adoption of local law or regulation that unreasonably restricts farm operations within a county-adopted, State-certified agricultural district, unless the locality can show a threat to the public health or safety.

Under AML §305-a(1), the Department is vested with the authority to take action against laws which unreasonably restrict or regulate farm operations, and it is the local government that has the burden of demonstrating a threat to the public health or safety to overcome a Department finding that a local law unreasonably restricts a farm operation. See *In the Matter of Village of Lacona v. New York State Department of Agriculture and Markets*, 51 A.D. 3d1319, 858 N.Y.S. 2d 833 (3rd Dept. 2008). AML §305-a imposes no duty on the Department to identify, investigate and evaluate issues to support a local ordinance on health or safety grounds. If the local government cannot demonstrate that such ordinance is necessary to preserve the public health and safety, then an unreasonably restrictive regulation may be preempted.

Finally, and contrary to the Town's contention, AML §305-a(1) is not limited to protecting agricultural land from the encroachment of development. The AML confers upon the Department the authority, under Section 305-a(1), to protect farmers from unreasonable restrictions on farming practices, structures, and operations, and the Department's interpretation of its statute is afforded deference. See *Town of Lysander v. Hafner*, at 565, 361.

Asserted Health or Safety Threats

Your July 14, 2015 letter states that "...USEPA guidelines and best management practices for the land application of Biosolids, which disfavors the application of biosolids upon soils with poor drainage and low permeability." DEC notes that while the EPA guidance does discuss difficulties that may be encountered at various sites, the guidance does not preclude the use on any given soil type. Moreover, DEC¹ points out that following the

¹ The Department has consulted with Sally Rowland, Ph.D., P.E, Division of Materials Management Environmental Engineer, to address matters with which DEC staff has technical expertise. Ms. Rowland memorialized her analysis

issuance of the EPA guidelines, the EPA adopted its biosolid regulations, which provide: “[W]ith proper design and operation, sludge can be successfully applied to virtually any soil.” In any event, the EPA’s guidance criteria was considered and incorporated into the Part 360 regulations.

The Town restates its disagreement with DEC’s inclusion of silty clay loam on the list of soils where biosolids can be applied, which the Department addressed in its May 1, 2015 letter. (Federal regulations contain no restrictions on soil types.) DEC does a site-specific review of the soil drainage and does not allow the land application of biosolids when the depth to groundwater is within 24 inches of the soil surface. Accordingly, and as the Department’s May 1, 2015 letter stated, the Town could restrict the application when groundwater is within 24 inches of the ground surface and monitor the timing of the application to verify that the biosolids are being applied at the appropriate time for each site.

The Town also repeats its contention that DEC’s regulations are based upon EPA’s regulations (40 CFR Part 503) that are over 20 years old and contends that EPA and DEC regulations do not adequately address the “numerous unregulated pollutants known to be present in wastewater treatment sludge.” The Department relies upon its analysis in our May 1, 2015 letter and notes DEC’s technical response to your July 14, 2015 letter (attached, Appendix A), that its regulations are not outdated, that DEC revised the Part 360 biosolids regulations in 2003 and EPA continues to assess - but has seen no need to update - the Part 503 regulations.² Both EPA and DEC believe that the current regulations are protective and appropriate for the concentration of pollutants that may be present in biosolids. (See www.epa.gov/biosolids). In addition, the New York State Department of Health (NYSDOH) has indicated that based upon the lack of evidence that the biosolids land application regulations are inadequate for the protection of public health, the NYSDOH does not believe additional health studies are necessary (See Appendix C, attached letter from NYSDOH to Assembly Member John Ceretto, dated June 25, 2015).

You dispute DEC’s belief that additional regulations are not necessary at this time and that the potential risk associated with unregulated contaminants is low, as “unsupported by any conclusive epidemiological or other scientific study.” However, EPA’s 2011 Biosolids Biennial Review (issued March 2015) explains their literature search and exposure and hazard evaluation. According to the Biennial Review, EPA is conducting an ongoing analysis of nine pollutants and molybdenum and...“expects to complete evaluation of these 10 pollutants using available data and the Targeted National Sewage Sludge Survey (TNSSS) results prior to taking action or determining whether to propose regulating any of these pollutants under Clean Water Act section 405(d).”

You also argue that since area farmers “have utilized nutrient management practices for decades without resorting to the use of municipal sewage sludge” and that the 37.6 acre

of the Town’s asserted public health and safety threats by letter dated March 14, 2016 (with Appendices A-C), attached hereto. Appendix B to her letter responds to Matrix’s review dated July 14, 2015; and Exhibit A responds to your July 14, 2015 letter.

² DEC published a Notice of Proposed Rulemaking in the March 16, 2016 State Register amending its Solid Waste Management Regulations, however, this would not impact this review.

Nash Road Site is but a small fraction of the approximately 4,000 acres farmed by Milleville Farms, the local law's restriction of the use of one form of nutrient management cannot be found to be an unreasonable restriction on its ability to conduct its farm operations. However, farmers often implement a change in operations on a limited number of acres and, if it is successful, then implement the change on increased acreage. As a result, while the local law only impacts a limited number of acres used for crop production in the Town of Wheatfield, it could have a greater economic impact on the future operations of Milleville Farms if it chooses to use biosolids as a nutrient source on other fields.

Further, the Department evaluates local laws under AML §305-a on a case-by-case basis, examining the specific land, buildings, equipment and practices which may be impacted by the law or its administration. The Department has never interpreted AML §305-a(1) to require a farm operation to show that a local law impacts a threshold number of acres of its operation, number of buildings, amount of equipment or number of practices. The Department supports a farm operation's lawful use of biosolids as part of its farm operation, regardless of the amount of land on which the farm chooses to use such biosolids. Indeed, under the Town's approach, essentially identical parcels and practices would be treated differently, based on the size of the farm – a wholly irrational result.

Nor do the additional submissions included with your July 14, 2015 letter provide a basis for the Town's contention that the proposed application of Equate would pose a risk to the public's health or safety. The *Case for Caution Revisited: Health and Environmental Impacts of Application of Sewage Sludge to Agricultural Land*³ includes information on a number of studies related to pollutants in biosolids and impacts to humans and animals. The studies include information on the impacts to animals grazing on land where biosolids had been applied and impacts to humans exposed to aerosols when biosolids were surface applied to land. However, these studies are not applicable. Milleville Farms plans to inject the biosolids on cropland, and the risk of exposure to humans and animals would be further minimized by compliance with DEC regulations. No information has been brought to the Department's attention which documents impact to humans and animals as the result of the land application of biosolids in New York, particularly when biosolids were injected on cropland in accordance with DEC regulations.

Your December 21, 2015 submission to the Department included a copy of a presentation that Dr. Murray McBride, Professor of Soil and Crop Science at Cornell University, gave at the Genesee/Finger Lakes Regional Planning Council Fall 2015 Regional Local Government Workshop on November 13, 2015. In addition to claims already addressed above (regulating of only 10 metals, no regulations for synthetic (organic) chemicals and outdated EPA regulations), Dr. McBride also raises other concerns, including: potential contamination of food crops, dairy products, and meat; reduced forage quality; potential groundwater contamination; excess nutrient application; human exposure to odor and bio aerosols; and pathogens in the biosolids.

According to the information submitted by Milleville Farms, the biosolids will be applied according to a nutrient management plan and human exposure to odor, bio aerosols

³ Harrison, Ellen Z. and Murray McBride. September 2008 (updated 2009).

and pathogens would be minimized by direct injection and following DEC regulations. The DEC regulations minimize the potential contamination of food, animal forage and groundwater. Dr. McBride's presentation did not include any examples where issues arose with the land application of biosolids in New York State, when done in compliance with the DEC and EPA regulations.

In conclusion, the Town of Wheatfield did not provide any new information demonstrating that the existing DEC and EPA regulations for the land application of biosolids in New York have not been adequate to protect the public health and safety. The Town has not provided any studies relative to the specific crop production and application methods proposed by Milleville Farms.

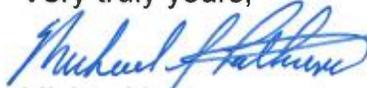
CONCLUSION

Based upon its review in this matter and in consultation with NYSDEC, the Department, for the reasons set forth above and in its letter of May 1, 2015, has concluded that the Town of Wheatfield's Local Laws No. 3-2014 and No. 4-2014, as administered by the Town, unreasonably restrict the Milleville Farms, farm operation in violation of AML §305-a (1) and that the Town has not demonstrated that the public health or safety is threatened by the farm operation's land application of *Equate* biosolids on land used for crop production.

The Department requests that the Town confirm within 30 days that such requirements will not be imposed on the farm operation. If steps to comply are not taken, the Department may take appropriate action to enforce the provisions of AML §305-a(1).

If you have any questions, please contact Danielle Cordier, Senior Attorney, at (518) 457-2449. If Supervisor Cliffe has concerns or questions, he may contact me at (518) 457-2713.

Very truly yours,



Michael Latham
Director

Encs.

cc: Supervisor Cliffe, Town of Wheatfield
David Milleville, Milleville Brothers Farms
Robert J. O'Toole, Town Attorney, Town of Wheatfield
John Syracuse, Chair, Niagara County AFPB
Jen McCormick, First Deputy Commissioner Dept. of A&M
Jacqueline Moody-Czub, Deputy Commissioner, Dept. of A&M
Scott Wyner, Esq., Counsel, Dept. of A&M
Matthew Brower, Dept. of A&M, Division of Land & Water Resources
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MAR 14 2016

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Division of Land and Water Resources
New York State Department of Agriculture and Markets
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RE: Millville Brothers Farms, land application of *equate*, NIQ-01011, Nash Road, Wheatfield

Dear Mr. Latham,

The Department of Environmental Conservation (DEC) is pleased to assist the Department of Agriculture and Markets (DAM) concerning the scientific and technical criteria that apply to the beneficial use of biosolids and the specific concerns raised by the Town of Wheatfield in DAM's AML §305-a review. I am the technical resource at DEC for this effort.

My Background

I am currently employed by DEC as an Environmental Engineer 3, Chief of the Organics Reduction and Recycling Section, Bureau of Waste Reduction and Recycling, Division of Materials Management. I have been employed by DEC since October 1985 and have worked in the biosolids recycling program since that time, acting as chief of the section since 1995. I hold a Bachelor of Science degree in chemical engineering from Clarkson University, a Master of Science and Doctor of Philosophy in environmental engineering from Rensselaer Polytechnic Institute and am an engineer licensed by the State of New York. One of my responsibilities is the development and implementation of regulations governing the storage, land application, and anaerobic digestion of biosolids.

General Overview of Organic Waste Recycling in New York State

In the Solid Waste Management Act of 1988, the New York State legislature established the State Solid Waste Management Policy, including the following priorities:

- a. first, to reduce the amount of solid waste generated;
- b. second, to reuse material for the purpose for which it was originally intended or to recycle material that cannot be reused;
- c. third, to recover, in an environmentally acceptable manner, energy from solid waste that cannot be economically and technically reused or recycled; and



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- d. fourth, to dispose of solid waste that is not being reused, recycled or from which energy is not being recovered, by land burial or other methods approved by the Department.

Reuse and recycling are second on the hierarchy as solid waste management alternatives that are preferred over incineration and landfilling. In addition to bottles, cans, and paper, there are many organic wastes that can be effectively recycled. These include food waste, food processing waste from manufacturers, yard waste, vegetable oils, manure, and the solids remaining after wastewater treatment (termed biosolids). Each organic waste has its own characteristics that help to determine how best it can be recycled and what technologies should be used to treat the material.

There are many methods for recycling organic waste. Some of the most common include use as animal feed (either directly such as feeding excess bread to animals, or after processing, such as the production of dog biscuits from food waste generated in a cafeteria), land application (application of the waste to farmland as a source of nutrient - manure spreading is a common example), composting, aerobic digestion, and anaerobic digestion. Composting, aerobic digestion, and anaerobic digestion are all biological treatment systems that convert organic waste into a more stable soil-like material that is subsequently used as a fertilizer and/or to add organic matter to soils. A storage facility for the material is sometimes needed prior to use as well.

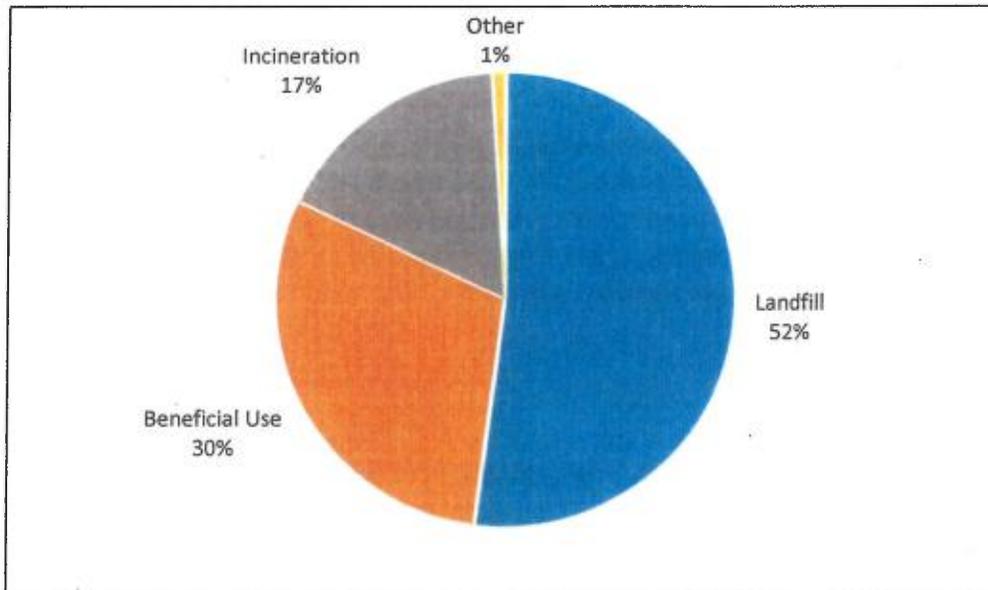
In New York State, there are approximately 300 composting facilities that manage yard waste, 24 composting facilities for biosolids, and 5 permitted composting facilities for food waste. In addition, there are many more composting facilities that are not tracked by the Department since they are exempt from regulation, including composting at the site where the waste is generated, such as a college campus.

Biosolids Management in New York State

As mentioned above, biosolids are one of many organic wastes generated in New York State that can be effectively recycled. Biosolids are a byproduct of wastewater treatment. Biosolids, the solid or semi-solid organic material generated by a wastewater treatment plant, result from the treatment of wastewater carried through sewer lines from homes and businesses to the treatment plant. Following treatment, the liquid (effluent) is typically discharged to a nearby stream and the solids (biosolids) or a product developed from the solids are removed from the treatment plant for disposal or beneficial use.

Biosolids contain several plant macronutrients, primarily nitrogen and phosphorus and varying amounts of micronutrients such as boron, copper, and zinc. Biosolids also contain organic matter. Organic matter added to fine soils can help make the soils looser or more friable and can increase the amount of pore space available for root growth. In coarse soils, organic matter can increase the water-holding capacity of the soil.

Biosolids Management in New York State:



A 2010 survey of publicly-owned treatment works (POTWs) identified 586 POTWs that generate biosolids in New York State. They currently produce a total of about 350,000 dry tons of biosolids annually. An estimated 52% of biosolids generated annually goes to landfills, on a dry weight basis. Beneficial use, through methods such as land application, digestion, heat drying, chemical stabilization and composting, is used for 30%. Incineration is used to treat 17% of the biosolids generated, and other management methods (lagooning, stockpiling, etc.) are used for one percent of the biosolids generated. Beneficial use methods are used by 117 POTWs, representing 20% of the POTWs.

In the United States, about 50% of the biosolids produced is recycled. In Europe the amount is 40% of biosolids generated.

New York State Part 360 and Federal 40 CFR Part 503 Regulations Governing Biosolids Recycling

All organic wastes present potential environmental harm. All organic waste contains nutrients that are beneficial to soils and crops but can be detrimental to surface and ground waters if applied at excessive rates. In addition, specific organic waste streams can contain other pollutants, such as:

- Yard waste - pesticide/insecticide residue, metals from urban soils or street soils, pathogens from pet feces
- Food processing waste - organic chemicals from cleaning agents, pesticide/herbicide

residue from fruits and vegetables

- Manure - pharmaceuticals, pathogens, organic chemicals from cleaning agents, metals from feed and/or medical treatment, pollutants from bedding materials
- Biosolids - metals from pipes in homes, pathogens, pharmaceuticals, organic chemicals from home or industrial sources

Even commercial fertilizers can contain metals, etc. that are present in the area where part of the nutrients were mined from the ground.

Simply the presence of a pollutant does not lead to a significant risk to human health or the environment. If that were the case, all humans would be at significant risk because all soils contain metals, since they originate from rock that has metal content. It is the task of environmental regulations (air, water, hazardous, and solid waste) to determine how much pollutant must be present to indicate an unacceptable exposure. This is the basis for risk assessment and many regulations.

Biosolids Regulation in New York State

Although all organic waste presents potential risk, the recycling of biosolids tends to raise more public concern than others. Biosolids are the heavier material (solids) that result from the treatment of wastewater. Wastewater comes from homes and businesses and, in some cases, industrial sources. The quality of the water leaving the wastewater treatment plant to a stream and the remaining biosolids is determined by the chemical constituents in the wastewater and the ability of the treatment process to reduce the concentration of those constituents.

To control pollutants from commercial and industrial sources, regulations exist (termed pretreatment standards) that limit the pollutants that may be discharged to the sewer system. These regulations have reduced the industrial metal content in biosolids by more than 50 percent since the 1980s.

Since biosolids have constituents (nutrients, organic matter) that are beneficial to soil and plants, there is the potential for recycling the solids. However, the other constituents in the biosolids (metals, pathogens, etc.) must not be found at a level that is an undue risk for the environment and public health. Both federal and New York State regulations exist to control this risk.

40 CFR Part 503 Standards for the Use or Disposal of Sewage Sludge

On March 19, 1993, following a 10-year scientific assessment, the U.S. Environmental Protection Agency ("EPA") published 40 CFR Part 503 ("Part 503 ") governing the use and disposal of biosolids. I have enclosed a copy of this assessment for your records. The risk assessment that forms the basis for the Part 503 regulations involved the following steps:

- a. Establishment of a federal inter-agency task force to assess biosolids management and the basis for the regulations.
- b. Based on existing data on biosolids quality and potential risk, EPA identified 200 potential pollutants of concern.

- c. EPA submitted the list of 200 pollutants to four scientific panels for review. Based on their evaluation of the potential risk for a particular use of biosolids, the list of pollutants that should be evaluated further was reduced to 50.
- d. Environmental profiles were developed for each of the 50 pollutants based on potential pathways of exposure.
- e. Hazard profiles were developed for the pollutants using toxicity data.
- f. Pollutants were selected for a detailed risk assessment based on the environmental profiles and hazard profiles.
- g. Risk assessment methodologies were reviewed and approved by EPA's Science Advisory Board.
- h. EPA completed the initial risk assessment.
- i. In 1989, EPA completed a national survey of biosolids data, including analyses for 412 pollutants from 180 treatment plants.
- j. Based on this data, EPA developed the final risk assessment for the Part 503 regulations. The final risk assessment included 14 potential pathways of exposure for the recycling of biosolids:

Summary of all potential pathways evaluated by EPA for Part 503:

- | | |
|---|--|
| 1. Biosolids → soil → plant → human | Human (except for home gardener) lifetime ingestion of plants grown in biosolids-amended soil |
| 2. Biosolids → soil → plant → human | Human (home gardener) lifetime ingestion of plants grown in biosolids-amended soil |
| 3. Biosolids → soil → plant → human | Human ingesting biosolids |
| 4. Biosolids → soil → plant → animal → human | Human lifetime ingestion of animal products (animals raised on forage grown on biosolids-amended soil) |
| 5. Biosolids → soil → animal → human | Human lifetime ingestion of animal products (animals ingest biosolids directly) |
| 6. Biosolids → soil → plant → animal | Animal lifetime ingestion of plants grown on biosolids-amended soil |
| 7. Biosolids → soil → animal | Animal lifetime ingestion of biosolids |
| 8. Biosolids → soil → plant | Plant toxicity due to taking up biosolids when grown in biosolids-amended soils |
| 9. Biosolids → soil → soil organism | Soil organism ingesting biosolids/soil mixture |
| 10. Biosolids → soil → soil organism → predator | Predator of soil organisms that have been exposed to biosolids-amended soils |
| 11. Biosolids → soil → airborne dust → human | Human lifetime inhalation of particles (dust) |
| 12. Biosolids → soil → surface water → human | Human lifetime drinking surface water and ingesting fish containing biosolids |
| 13. Biosolids → soil → air → human | Human lifetime inhalation of particles from biosolids-amended soil |
| 14. Biosolids → soil → groundwater → human | Human lifetime drinking well water containing biosolids that leached from soil to ground water |

The final Part 503 included pollutant standards based on the lowest allowable level from an assessment of all 14 pathways listed above. If the pollutant concentration actually found in biosolids was not found at a risk level, it was not included as a regulated parameter in the regulations. This has led to the common misconception by the public that pollutants that were not regulated in the Part 503 rulemaking process were not analyzed and considered. Pollutants such as organics (benzene, etc.) that were not regulated in Part 503 were considered and either not found in biosolids or found at such low levels that it does not present a risk under the EPA assessment.

In addition to setting pollutant levels based on the pathway risk assessment, EPA developed pathogen reduction standards based on research at USDA and EPA on pathogen reduction achieved under various treatment scenarios.

6 NYCRR Part 360 Biosolids Regulations

DEC revised the Part 360 biosolids regulations in 2003 to include the criteria from the federal Part 503 regulations. DEC chose to include pollutant standards more stringent than Part 503 in some cases, and to include many more site management practices than are included Part 503. Therefore, the Part 360 biosolids regulations include several additional safeguards that further protect the public health and environment. For example, for land application, New York State regulations contain buffers larger than Part 503 (Part 503 only requires a 33-foot separation to a surface water, and the Part 360 regulations require a 200 foot separation to a surface water). Part 360 also has slope restrictions, soil type restrictions, incorporation requirements, and separation to groundwater and bedrock requirements that are not present in Part 503. For temporary storage, Part 503 does not contain technical requirements. In promulgating Part 360, however, DEC chose to require permits for all Class B biosolids storage facilities and include design and operational criteria for storage structures.

Recent Concerns

Concerns have been raised regarding the presence of organic contaminants in biosolids that come primarily from households, so called "emerging organic contaminants." These contaminants have been found in both the effluent discharge and the biosolids from wastewater treatment plants. Some of these include the following categories:

- a. Antibiotics and pharmaceuticals
- b. Bisphenol A (fire retardant)
- c. Quaternary ammonium compounds (fabric softeners, hair products)
- d. Steroids
- e. Synthetic musks (detergents, shampoo, perfume, food)
- f. Triclosan and triclocarban (shampoo, soap, deodorant, lotion, mouthwash, toothpaste)

Similar concerns have been raised by the Town of Wheatfield throughout the process of the DAg&M review of its local law as applied to Milleville Farms. To the extent that this

letter does not address these concerns, the DEC has attached a response ("Response to 07/14/15 Town of Wheatfield Letter) to each specific concern raised by the Town. Generally, it is the Department's position that the presence of organic contaminants in biosolids is not at a level that would pose a risk to the public health and the environment, so long as the specific farm operation that is utilizing biosolids for land application complies with the Part 360 biosolids regulations

There are two existing scientific texts that address the presence of organic contaminants in biosolids. Unlike most research papers on this topic, these two papers assess both the presence of these compounds in biosolids and whether the amounts found in the waste represent a risk to human health and the environment. The first is a 2010 article from the Imperial College in the United Kingdom took a look at each of these categories of compounds and the potential for risk from biosolids land application.

A summary of their assessment:

- a. Antibiotics and pharmaceuticals - antibiotics have been found in ground and river water, wastewater effluents, biosolids, soil, and manure. Pharmaceutical compounds, if detected, have been found in biosolids at a few parts per million levels. A 2009 Norwegian risk assessment looked at 1400 pharmaceutical compounds and found that the levels in biosolids were below the "predicted no-effect environmental concentration" indicating little risk from use.
- b. Bisphenol A - bisphenol A is a plasticizer that is used for coating cans, in dental fillings, and in plastics. Bisphenol A is thought to have possible endocrine disruptive properties. Bisphenol A is readily biodegradable in wastewater treatment, resulting in significant reductions (up to 99%). The half-life in soil is estimated to be less than 3 days. Human exposure to bisphenol A occurs primarily in the household. Transfer to humans from biosolids in soil is unlikely due to the rapid biodegradation of the compound.
- c. Quaternary ammonium compounds (QACs) - QACs are surfactants, commonly used in fabric softeners, hair conditioners, and other hair preparations. Modern QACs are designed to biodegrade rapidly during wastewater treatment and anaerobic digestion and have short half-lives in the soil (17-40 days).
- d. Steroids - steroids excreted from humans come from both natural and synthetic sources. Steroids in effluents have been documented to affect aquatic biota. Steroids are readily biodegradable and, if found, are at low levels in biosolids, posing little risk. A recent study by EPA found only 3 steroids present in biosolids of the 25 investigated, and those found were in the low part per billion level.
- e. Synthetic musks - synthetic musks are substitutes for natural fragrances, used in detergents, shampoo, perfume, and food. To date, the concentration found in biosolids is below the risk level for earthworm effects (the pathway of concern).
- f. Triclosan (TCS) and triclocarban (TCC) - TCS and TCC are antimicrobial agents widely used in personal care products such as shampoos, soaps, deodorants, lotions, mouth rinses, and toothpaste. They have been found upstream of wastewater treatment plants indicating their prevalence in the environment. It is likely that human exposure is greatest from contact with home products (toothpaste, etc.).

The second text is a 2014 research paper from the University of Catania in Italy contains an evaluation of emerging organic contaminants using the risk assessment procedure that EPA developed for Part 503. Their assessment found that the maximum level of organic contaminants found in biosolids was at least three times lower than the risk level, indicating minimal risk.

Summary

The recycling of biosolids is a viable method to provide nutrients and organics matter for farmers to promote the growth of crops. New York State has a long and successful program for the recycling of biosolids in an environmentally sound manner. For environmental protection, DEC has regulations found in 6 NYCRR Part 360 that control the use of biosolids. It is DEC's opinion that the regulations are protective of human health and the environment and that biosolids recycling on farmland in New York State provides nutrients to farmers without undue risk.

For your information and use, DEC's technical response to the Town of Wheatfield's July 14, 2015 letter is found in Appendix A and B. In addition, Appendix C includes technical documents concerning biosolids recycling.

If you have any questions concerning this information, feel free to contact me at sally.rowland@dec.ny.gov or 518 402-8706.

Sincerely,



Sally Rowland, Ph.D., P.E.
Organics Reduction and Recycling
Bureau of Waste Reduction and Recycling

Enclosures

DEC Response to 7/14/15 Town of Wheatfield Letter
DEC Response to Matrix Review
Technical Documents Concerning the Land Application of Biosolids

Appendix A

DEC Technical Response to 07/14/15 Town of Wheatfield Letter

Abbreviated Summary of Issues Raised and DEC Response

Page 4 Para 1

DEC does not adhere to USEPA guidelines and best practices for the land application of biosolids, which disfavor the application of biosolids upon soils with poor drainage and low permeability.

The EPA guidance mentioned precedes the EPA regulations on biosolids regulations. The EPA regulations, unlike DEC regulations, contain no restrictions on soil types. However, even the EAP guidance states that “With proper design and operation, sludge can be successfully applied to virtually any soil”. The guidance does discuss difficulties that may be encountered at various sites, but does not preclude the use on any given soil type. DEC has reviewed the EPA guidance and has incorporated criteria into the Part 360 regulations to address the recommendations in the guidance.

Page 4 Para 2 and 3

DEC’s allowance of silty clay loam soils is contrary to federal guidance and is contrary to State regulations.

Federal regulations for biosolids land application do not have any soil type restrictions and federal guidance does not prohibit land application on any soil type. DEC prohibits land application on sandy and clay-like soils and silty clay loam does not belong in these categories given the other soil types that are allowed under State regulation.

Page 4 Para 4

DEC’s regulations are based on EPA’s regulations (40 CFR Part 503) that are over 20 years old. The State and federal regulations fail to address numerous pollutants that may be present in biosolids.

EPA has continued to assess the need to update the Part 503 regulations and DEC has revised the State regulations since 1993. The DEC revised the Part 360 biosolids regulations in 2003. Both EPA and DEC believe the current regulations are protective and appropriate for the concentration of pollutants that may be present in biosolids. In addition, the New York State Department of Health (NYSDOH) has indicated that based upon the lack of evidence that the

biosolids land application regulations are inadequate for the protection of public health, the NYSDOH does not believe additional health studies are necessary (See attached letter from NYSDOH to Assembly Member John Ceretto, dated June 25, 2015). Additionally, see www.epa.gov/biosolids for documents and information describing EPA's current activities related to the regulation of biosolids.

APPENDIX B

Wheatfield Exhibit "A" Matrix Review

Unfavorable Local Soil Conditions

Based on DEC review of the permit application, the soils on the land application site meet Part 360 regulations.

Unregulated Contaminants

DEC has addressed this concern previously and also earlier in this letter.

Wheatfield Attachment 1 – List of pollutants

For a pollutant to be a risk it must be both present and present at a concentration that would potential cause harm to human health or the environment. Due to human activity, a myriad of pollutants, such as those listed in this attachment, can be found in many places in the environment. It is concentration and potential routes of exposure that must be evaluated to determine appropriate environmental regulations.

Wheatfield Attachment 2 – National Academy of Sciences

USEPA asked the National Academy of Sciences to perform this assessment of the federal rules for biosolids recycling. The overall conclusion of the report was that there is no documented scientific evidence that the federal rule has failed to protect public health. The report did include a number of recommendations regarding the regulations and EPA has taken a number of steps to address those concerns, outlined in detail at <http://www.epa.gov/biosolids/epa-response-national-research-council-nrc-report> . DEC continues to follow EPA recommendations and will incorporate any revisions to Part 360 that are necessary. To date, Part 360 revisions are not needed to address any recommendations from EPA.

Wheatfield Attachment 3 – Case for Caution

At DEC's request, the Case for Caution was reviewed by both USEPA and the United States Department of Agriculture (USDA). Both entities have stated that the document is fraught with errors and poor science.

Wheatfield Attachment 4 – Unmonitored Hazardous Chemicals, OIG 9/29/14 Report

The report concerns hazardous chemicals that may end up in the discharge from wastewater treatment plants. New York State already has a very active pretreatment program that considers the items recommended in the report.

APPENDIX C

Technical Documents Concerning the Land Application of Biosolids

A few key documents that address the land application of biosolids for your use:

*1. EPA Technical Support Documents – these documents provide the scientific basis behind the federal Part 503 biosolids regulations

2. EPA Web Site – www.epa.gov/biosolids EPA's website contains numerous documents concerning biosolids land application.

3. WEF Web Site - <http://www.wef.org/biosolids/> The Water Environment Federation has partnered with EPA to conduct research and provide information on biosolids recycling.

4. FDA Standards for the Growing, harvesting, Packing, and Holding of Produce for Human Consumption <https://www.federalregister.gov/articles/2015/11/27/2015-28159/standards-for-the-growing-harvesting-packing-and-holding-of-produce-for-human-consumption> . These standards allow biosolids to be used for growing produce as long as the EPA regulations are followed .

*5. NYSDOH letter – letter from Commissioner Zucker outlining the lack of health affects evident from biosolids land application

*6. NYSDEC letter – letter from Commissioner Martens outlining DEC's determination that biosolids land application in accordance with regulatory criteria is protective of the environment

* a copy of these references is attached.



Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

*Max, Julie
Copy for Sally, Sal*

June 25, 2015

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NYSDEC

JUL 14 2015

DIRECTOR'S OFFICE
DIV. OF MATERIALS MANAGEMENT

Hon. John Ceretto
Member of the Assembly
State of New York
Legislative Office Building, Room 320
Albany, New York 12248

Dear Assembly Member Ceretto:

I am writing in response to your letter to New York State Commissioner of Health, Howard A. Zucker, M.D., J.D., requesting that the New York State Department of Health (Department) conduct a comprehensive health impact study of the effects of land application of biosolids.

Land application of biosolids is a common and widely accepted practice statewide that has been governed by New York State Department of Environmental Conservation (DEC) regulations since the early 1980s, as well as by US Environmental Protection Agency (EPA) regulations since 1993. According to the DEC, about one-third of the approximately 1.9 million wet tons of biosolids generated per year in New York State is beneficially reused through land application, composting or other treatment methods.

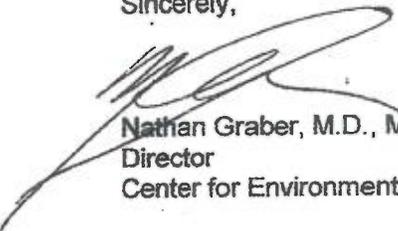
While EPA and DEC regulation of biosolids recycling is effective, the rules continue to undergo regular review. The National Research Council (NRC; part of the National Academies) reviewed the EPA biosolids regulatory program twice. In 1996, the NRC report focused specifically on food production and evaluated EPA's risk assessment for chemicals and pathogens in treated biosolids. The NRC concluded that "While no disposal or reuse option can guarantee complete safety, the use of [biosolids] in the production of crops for human consumption, when practiced in accordance with existing federal guidelines and regulations, presents negligible risk to the consumer, to crop production, and to the environment." In 2002 - after nearly 10 years of experience with the federal regulatory program (known as Part 503) - a second NRC expert committee review concluded that "There is no documented scientific evidence that the Part 503 rule has failed to protect public health."

The Department monitors the health of New Yorkers through routine surveillance. Unusual occurrences of diseases or illnesses are investigated and the risk factors are identified and, when possible, addressed. Health studies of communities related to specific potential exposures are sometimes considered when credible information indicating a specific exposure has been identified, and it appears likely the exposure was at a level that could impact health. The Department also considers whether a health study to address the concern or the exposure is likely to be able to detect an association between the exposure and a hypothesized health outcome.

Credible evidence of adverse health effects associated with biosolids land application sites in New York State has not come to the attention of the Department. In addition, the Department has reviewed scientific literature and has not found any published studies that provide clear evidence of significant human exposures or unusual adverse health effects caused by biosolids land application. Nuisance dust and odor complaints sometimes occur near these sites, and should be investigated individually by the regulatory authority (DEC) to assure that proper operational and site-management protocols are being followed. However, given the lack of clear evidence that the current biosolids land application regulations are inadequate for protection of public health, as well as the ongoing EPA activities validating and enhancing the biosolids regulatory program, the Department does not see the need for a health study at this time.

If you or your staff have additional questions, please do not hesitate to contact Ms. Amy Nickson, Assistant Commissioner, Office of Governmental and External Affairs, at (518) 473-1124.

Sincerely,



Nathan Graber, M.D., M.P.H.

Director

Center for Environmental Health

cc: Ms. Nickson

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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MAR 14 2016

Michael Latham, Director
Division of Land and Water Resources
New York State Department of Agriculture and Markets
10B Airline Drive
Albany, New York 12235

RE: Town of Wheatfield December 21, 2015 Letter (Murray McBride Presentation)

Dear Mr. Latham,

The Department of Environmental Conservation (DEC) is pleased to assist the Department of Agriculture and Markets (DAM) concerning the scientific and technical criteria that apply to the beneficial use of biosolids and the specific concerns raised by the Town of Wheatfield in DAM's AML §305-a review.

The December 21, 2015 Town of Wheatfield letter provides a copy of a presentation given by Murray McBride from Cornell University on November 13, 2015 in Batavia, New York. I was also present at the workshop in Batavia and gave a presentation on the technical basis for the State and federal regulations governing the land application of biosolids.

I have reviewed the presentation from Murray McBride and I do not see any new issues related to biosolids that have not been raised previously and I have provided in response to the Town's July 14, 2015 letter.

If you have any questions concerning this information, feel free to contact me at sally.rowland@dec.ny.gov or 518 402-8706.

Sincerely,



Sally Rowland, Ph.D., P.E.
Organics Reduction and Recycling
Bureau of Waste Reduction and Recycling



Department of
Environmental
Conservation