

Ohio Food, Agriculture and Environmental Law Webinar Series

**Pollutant Discharges on Ohio Farms:
Legal Issues and Practical Responses**

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Menke Consulting LLC, Greenville, Ohio
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Welcome!
The webinar will begin at 1 pm

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THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

OSU Agricultural & Resource Law Program
aglaw.osu.edu


**Agriculture's Role in
Water Quality:**

No more Toledo's !


Tom Menke, Menke Consulting, Inc.
CPCC-I
March 13, 2015



Beyond Spills and Discharges



Focus on Non-Point Sources (NPS)



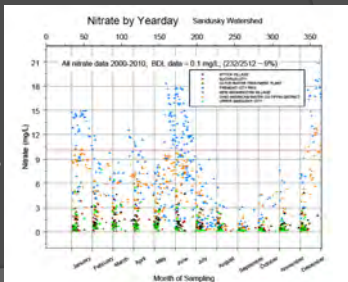

Beyond Spills and Discharges

For our purposes today, think
of NPS as:

- **Nitrogen**
- **Phosphorus**
- **Sediment**


Nitrogen

- Can be toxic to aquatic life as ammonia
- Or to humans as nitrate.



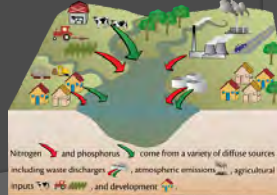
Phosphorus

- Is not toxic; in fact is important to both plant and animal growth.
- Is usually first limiting factor for aquatic plant growth.



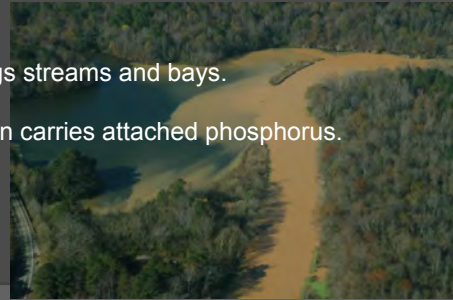
Nitrogen & Phosphorus

- Many sources beyond ag production.
- Municipal treatment plants, rural septic systems, biosolids, lawn and golf course fertilizers.



Sedimentation

- Clogs streams and bays.
- Often carries attached phosphorus.



So what's the problem ?



Don't go near the water!
Ohio's largest inland lake closed by toxic algae bloom
By W. H. "Chip" Gross, ESPN Outdoors.com

Toxic Algae in Grand Lake St Marys to Blame for Nine Illnesses

State officials are advising people to stay away from mysterious blue-green algae in Grand Lake St. Marys that reportedly sickened nine people and killed three dogs.

Farm Runoff Brings Toxic Algae to Once-Pristine Ohio Lake
Monday, July 5, 2010
by John Seewer, ASSOCIATED PRESS, June 30, 2010

Grand Lake became the state poster child



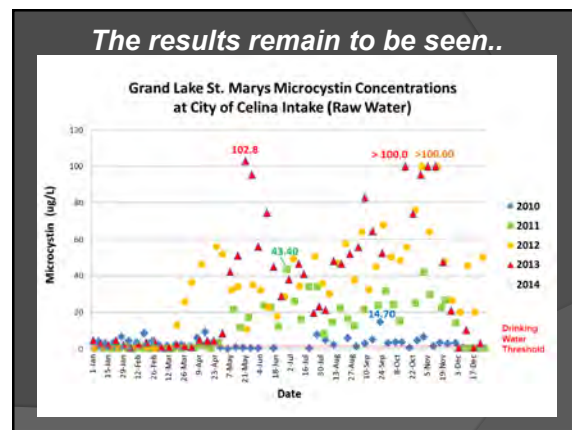
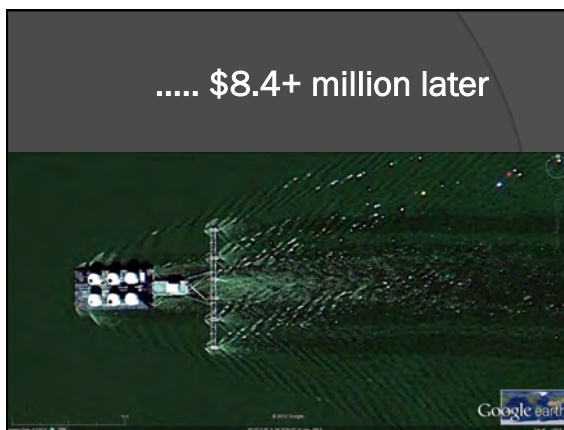
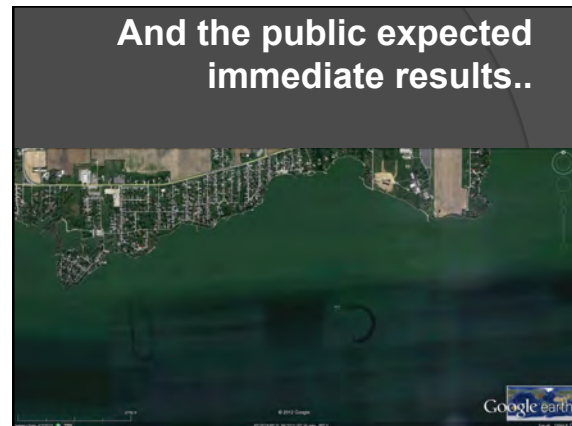
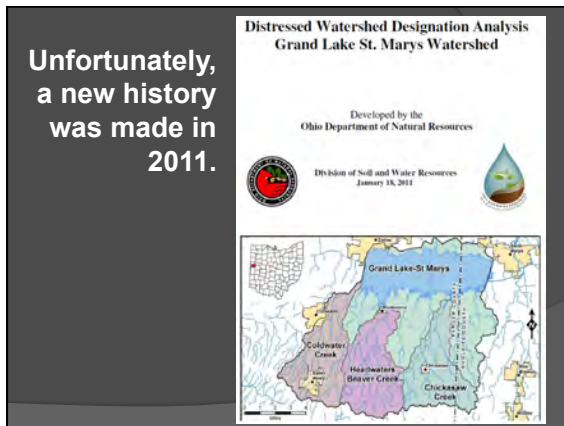
Grand Lake - Some History

Grand Lake is the largest inland lake in Ohio in terms of land area, but is extremely shallow, with an average depth of only 5 to 7 feet with a soft bottom of silt. It was constructed 1837-1845 as a reservoir for the Miami and Erie Canals. Two earthen dams were built on the headwaters of two major drainage systems flooding the area between them.

Grand Lake - Some History



In the 1890's oil was discovered in the area, and oil derricks were set up in the lake. These were the first off-shore oil rigs ever constructed.



As Expected, the Sabers have been Rattling

Class Action Lawsuit considered against Grand Lake St. Marys farmers

Posted: Dec 19, 2010 8:08 PM EST Updated: Dec 26, 2010 8:03 PM EST

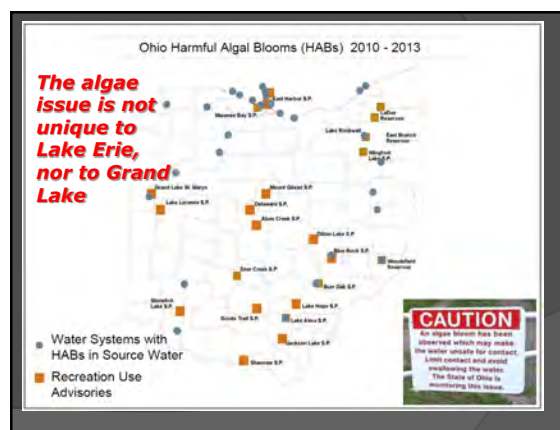
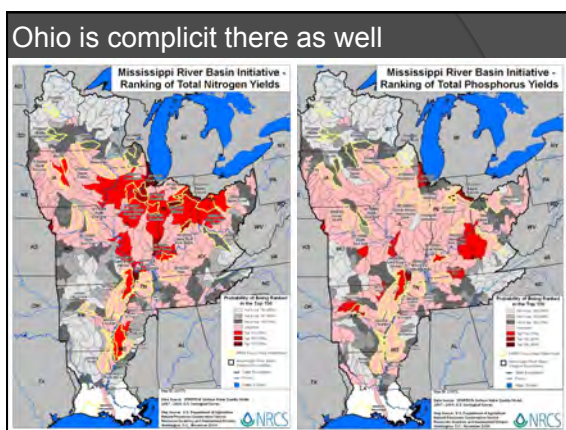
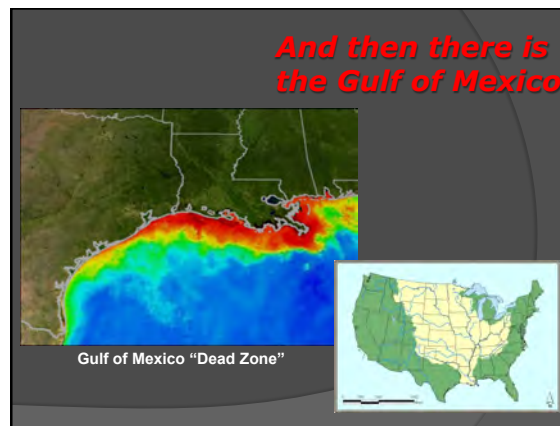
A group of property owners near Grand Lake St. Marys is preparing for a legal battle against farmers over pollution in Ohio's largest inland lake.

Manure runoff from livestock farms in the Grand Lake watershed is being blamed as part of the cause for the problems.

It's a common practice for the livestock farmers to treat their fields with manure. The contention is that because of the higher levels of phosphorus in the lake, toxic blue-green algae seen over the past two summers has been allowed to thrive.

Bill Goodwin owns Kozy Campground and Marina on the southwest corner of Grand Lake. He's joining other property owners in a class action lawsuit **against certain farmers** that may be causing the brunt of the problem.

Then in 2014 came Toledo, and Lake Erie got the spotlight.



The real message is clear



Ohio EPA NPDES Permitted Discharges: GLSM Watershed

WWT	NPDES permit number	Date of permit	Permit Expires	Permitted Discharge (GPD)	Permitted Annual Flow	Documented Actual Flow	Permit P. Ratio	Permit P. Monitoring	Permit P. Results
Colwell	2780011740	2/1/2008	1/31/2011	900,000	128,500,000	97,999,945	NONE	1/month	1.549
Montezuma	27800011710	6/16/2005	6/16/2008	(1)	(1)	149,836,120	NONE	1/month	1.3185
Chickadee	27800048780	6/1/2009	5/31/2014	(1)	(1)	8,100,100	NONE	NONE	n/a
St. Henry	27800027400	7/1/2006	7/31/2008	867,000	316,455,000	221,099,845	NONE	NONE	n/a
Northwood	27800100470	8/1/2005	7/31/2010	50,000	18,250,000	25,949,825	NONE	1/month	1.74
Monroe Co. Elio	27800108470	8/1/2008	7/31/2013	3,500	1,277,500	192,800	NONE	NONE	n/a
Chapel Hill	27800100170	10/1/2005	9/30/2010	20,000	7,300,000	6,205,000	NONE	NONE	n/a
Marion Local School	27700022710	5/1/2010	4/30/2015	25,000	7,804,167	3,704,755	NONE	NONE	n/a
Total gpd/ann				1,861,500	679,180,667	513,116,475	ave P. Ratio = 2.069		
				gpd/ann	gpd/ann	gpd/ann	actual to P. Discharge = 8,518.7 %		

(1) Assumed these permits are either approved or pending approval and will expire on the same date in 2015.
 (2) No discharge in permit.
 (3) Ohio EPA Monitoring Data.
 (4) Assumed P. level is at maximum of 100% as average of the 12 months.

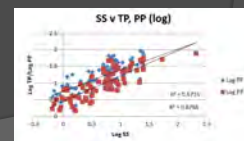
What does the data tell us ?

- The main NPS impact is algae growth – some are just a nuisance, some have potential negative health impacts (microcystin).
- Algae is a water plant, and needs the same nutrients as terrestrial plants.
- Some nutrients are very soluble (like nitrate-nitrogen) and so are found in abundant quantities in water already.



What does the data tell us ?

- Phosphorus is relatively immobile and thus is likely the first limiting factor, meaning only small quantities can have large impacts on algae growth
- P can be bound to sediments that are carried in surface waters.



What does the data tell us ?

- The Maumee River (Toledo harbor) is 4% of the flow to Lake Erie and accounts for 45% of the phosphorus.



What does the data tell us ?

- 8 Ohio commercial harbors are dredged by the Army Corp of Engineers. Toledo Harbor is 53% of the total dredging volume.



What does the data tell us ?

We can control nitrogen leakage by making sure that crops like corn use what we put on (right time, rate, method, and source).

- These are the "4 R's" that is the basis of a new voluntary fertilizer industry certification system.



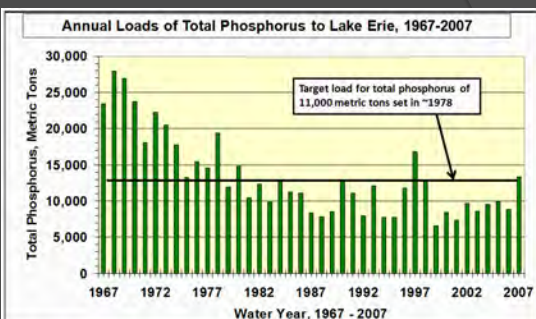
- My business is focused on the "5th R": the Right data that impacts the other 4 R's.

What does the data tell us ?

Phosphorus is also controlled in the same way, with some important nuances.

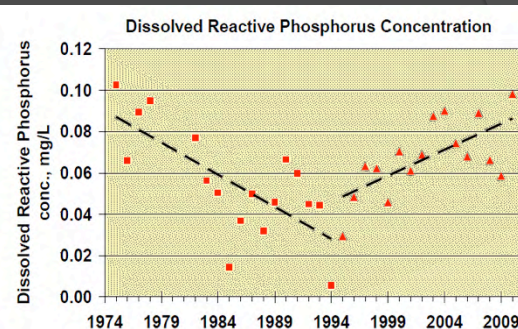
- There has been a shift from total phosphorus found in stream waters to dissolved reactive phosphorus (DRP) that is highly correlated with the harmful algae blooms (HAB's).

What does the data tell us ?



Source: Heidelberg University

What does the data tell us ?

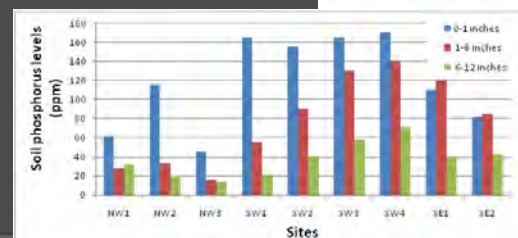


What does the data tell us ?

- No-till agriculture had been taking much credit for reducing P to Lake Erie, now some are implicating that very practice as a cause of increased soluble P because of surface applications of P fertilizer (direct run-off) and an accumulation of P in the soil surface (constant source of DRP).



What does the data tell us ?



What does the data tell us ?

- There are several studies showing a potential impact of the presence of the herbicide glyphosate (Roundup®) in waters coinciding with the appearance of Harmful Algae Blooms.



What does the data tell us ?

Resistance to glyphosate in the cyanobacterium *Microcystis aeruginosa* as result of pre-selective mutations

López-Rodríguez, Victoria; Flores-Alfaro, Adrián; Navarro, Emma; Ferragut, Natalia; Martín, Fernando; García, María E.; Costa, Eduardo

July 2007
Evolutionary Ecology, Vol. 21 Issue 4, p535

Physiological and biochemical responses of *Microcystis aeruginosa* to glyphosate and its Roundup® formulation.

Quintana, Daniel; Benito, María; García, María E.

Author information

Abstract
Glyphosate may have dual effect on bloom algae as a phosphorus source or pesticide. The physiological and biochemical responses of *Microcystis aeruginosa* (M. aeruginosa) to glyphosate and its Roundup® formulation (Roundup®) showed low-dose (below 1 mg P (L-1)) content (hormesis effect). Phosphate was more abundant (P (L-1)). Analysis of the maximum yield of PEG photosynthesis of M. aeruginosa. The photosynthetic extracellular alkaline phosphatase activity (AP-APA) was similar in both the glyphosate and Roundup®.



Journal of Great Lakes Research

Volume 37, Issue 4, December 2011, Pages 653-660

Glyphosate influence on phytoplankton community structure in Lake Erie

Marlene A. Saxon, Elizabeth A. Morrow, Richard A. Doucett, Steven W. Wilhelm

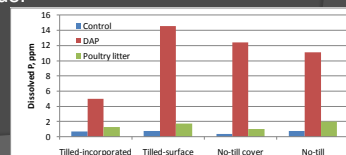
What does the data tell us ?

On-going research is indicating 2 major sources of DRP pathways to the waters of the state:

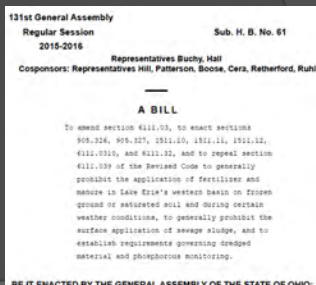
- Surface applied phosphorus (fertilizer or manure) followed by a rainfall event that washes it directly to streams.
- High soil phosphorus tests from fields that have had excess P applications over years.

What does the data tell us ?

- 66% of the phosphorus applied in the Lake Erie watershed is from chemical fertilizer (as opposed to manure/biosolids) of which much is surface applied (most manure is incorporated into the soil).
- Fertilizer phosphorus is 4-5x more soluble than manure phosphorus.



SB 1 / HB 61 legislation to address the Lake Erie issue

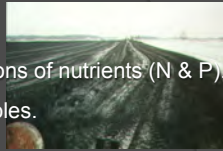


SB 1 / HB 61 specifically, the western basin



SB 1 / HB 61

- Restrictions on winter applications of nutrients (N & P).
 - With some important loopholes.
- Restrictions on surface applications of N & P.
 - With an important exception for chemical fertilizers that can be applied under chances of higher amounts of rainfall than with manure.
 - In conflict with NRCS 590 standard, which is used in government-approved nutrient management plans.



SB 1 / HB 61

- Some have advocated for a statewide bill, but now it appears will be for Lake Erie basin only.
- Some had advocated for a 5-year sunset, now will probably have a 3-year review.
 - New science coming on line within the next couple of years that needs to be considered.

SB 1 / HB 61

- Required testing and evaluation of municipal treatment systems for P removal.



- Addressing open-lake placement of harbor dredgings by closer scrutiny of this activity.

SB 1 / HB 61

As in Grand Lake, managing the expectations of the results will be a public issue.



I believe the “low-hanging fruit” was missed. My wish list:

- Closing the loopholes for winter applications.
- Standardization of soil testing and reporting methods.
- Scrutinizing fertilizer phosphorus management more closely.
- Prohibiting the current practice of putting recommendations on soil test reports that are in conflict with water quality stewardship.



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Pollutant Discharges on Ohio Farms: Legal Issues and Practical Responses

Jack A. Van Kley and Chris Walker
March 13, 2015

Topic One: Certifications for Fertilizer Application

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Overview of the Legislation

- Regulatory program created by Am. Sub. S.B. 150 (August 2014)
- Added to the Agricultural Additives, Lime, and Fertilizer Law
- Codified primarily in R.C. 905.31 - 905.325
- Requirements apply starting on September 30, 2017
- Goal to decrease fertilizer runoff from farm land
- Applies statewide

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Requirements for Certified Applicators

- Primary requirement: anyone applying "fertilizer" for "agricultural production" must be certified by the Ohio Department of Agriculture (ODA) or must be acting under the "instructions and control" of a certified applicator. R.C. 905.321(A)
- "Agriculture production" is the cultivation, primarily for sale, of plants on > 50 acres. It does not include the use of start-up fertilizer applied through a planter. R.C. 905.31
- This program will be implemented through ODA rules.

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Definition of "Fertilizer"

- Includes any substance or mixture containing nitrogen, phosphorus, potassium or other plant nutrients. R.C. 905.31(D), (I)
- Includes any mixture of the foregoing nutrients with the exempted substances listed on the next slide

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Definition of "Fertilizer"

- Does not include:
 - animal and vegetable manures
 - residual farm products, defined as bedding, wash waters, waste feed, and silage drainage. R.C. 905.01(CC) (incorporating R.C. 1511.01(G) by reference)
 - lime, limestone, and marl
 - unground bone
 - water
 - silage drainage
 - composted dead animals (see R.C. 1511.01(G) for limitations on this exclusion)

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ODA's Future Rules Must Provide For:

- integrating the program into Ohio's strategy for reducing nutrient pollution
- fees for certifications
- procedures for issuing and denying certifications
- contents required for certification application

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ODA's Rules Will Provide For Applicator Training:

- procedures and requirements for training applicators
- educating applicators on the time, place, form, amount, handling, and application of fertilizer
- training on generally practical and economically feasible best management practices
- See R.C. 905.322.

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Contents of ODA's Applicator Rules

- The rules will require applicators to keep records of:
 - date of application
 - place of application
 - application rate
 - analysis of the fertilizer
 - the name of the person conducting the fertilizer application
- Records must be kept for three years.
- ODA may inspect the records, but may not require them to be submitted to ODA.
- See R.C. 905.322.

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Voluntary Nutrient Management Plans

- May be prepared by the owner or operator of agricultural land, any other person on the landowner's behalf, or the Soil and Water Conservation District (SWCD) at the landowner's request.
- If prepared by someone other than the SWCD, the landowner may ask the SWCD to approve the plan.
- Plan approvals last for five years.
- Plan-related information submitted to SWCD may not be disclosed to the public or other persons, with some exceptions.
- See R.C. 905.323 and 905.324.

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Contents of Voluntary Nutrient Management Plans

- Plans qualify for approval if they:
 - are in the form of the Ohio nutrient management workbook developed by Ohio State University;
 - are comprehensive nutrient management plans (CNMPs); or
 - follow a form approved by ODA and contain the information listed in R.C. 905.01(DD)(3).
- The plans apply to all types of nutrients, including fertilizer, manure, sewage sludge, and biodigester residue.
- See R.C. 905.01(DD).

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Shield Against Lawsuits (R.C. 905.325)

- A defendant has an affirmative defense in a private civil lawsuit involving or resulting from fertilizer application if all of the following apply:
 - A certified applicator or a person under the applicator's instructions and control applies the fertilizer;
 - The required records are maintained; and
 - The fertilizer application substantially complies with a SWCD-approved voluntary nutrient management plan.
- This shield applies to all private claims, while other statutes provide affirmative defenses against nuisance claims (or claims sounding in nuisance). See R.C. 903.13 (permitted animal feeding facilities) and R.C. 1511.021(C) (nutrient management plans).

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Topic Two: Restrictions on Manure Application in Distressed Watersheds

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Designation of Distressed Watersheds

- ODNR may designate a watershed as distressed if threatened or impaired by pollution. OAC 1501:15-5-20.
- The criteria for this designation are wide-ranging and subjective.
- So far, only the Grand Lake St. Mary watershed has been designated.

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Manure Management Plans

- Persons who produce, receive, or land apply more than 350 tons/yr. or 100,000 gallons/yr. of manure in a distressed watershed must prepare and use manure management plans approved by SWCD. OAC 1501:15-5-19.
- Livestock farms permitted under R.C. Chapter 903 or permitted by Ohio EPA are exempted from this requirement, since they are already required to use best management practices for manure application.
- New animal feeding operations without ODA or Ohio EPA permits must submit and obtain approval of manure management plans prior to construction.

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Contents of These Plans Must Include:

- A prohibition against manure application during the winter (Dec. 15 to Mar. 21) to reduce the risk of runoff during snow and ice melt
- Safe rates for manure application
- Farm must keep records on nutrient application, weather, manure storage volumes, and analyses of soil and manure

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Restrictions Applicable To All Manure Applicators In Distressed Watersheds:

- Manure may not be applied between December 15th and March 1st without prior approval for each application.
- Manure may not be applied on frozen ground or ground covered with more than 1" of snow between March 1 and December 15, unless the manure is injected or incorporated within 24 hours.
- Records of manure storage volumes must be kept.
- 120 days of storage must be available on December 1st of each year.
- Manure may not be surface applied if the local weather forecast contains >50% chance of exceeding ½" precipitation extending 24 hours after the projected start of manure application.
- Manure application must comply with USDA NRCS Field Office Technical Guide (Standard 633).

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MANURE AS "SOLID WASTE" UNDER RCRA

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Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992k

- Enacted 1976.
- Federal law governing management and disposal of solid and hazardous waste.
- Solid waste = “garbage, refuse . . . and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from . . . agricultural operations”
- “Agricultural wastes which are returned to the soil as fertilizer or soil conditioners are not considered discarded material in the sense of this legislation.” H. Rep. No. 94-1491 (1976).
- Solid waste criteria “do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners.” 40 C.F.R. § 257.1(c)(1).

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Prior Holdings

- *American Mining Congress v. EPA*, 824 F.2d 1177 (D.C. Cir. 1987): Congress clearly intended to apply RCRA only to materials that are truly discarded, thrown away, disposed of, or abandoned. Materials destined for beneficial reuse by the generating entity are not solid wastes.
- *Safe Air for Everyone v. Meyer*, 373 F.3d 1035 (9th Cir. 2004): Where bluegrass farmers burn grass residue in a continuous farming process, the grass residue is not “discarded material” and does not qualify as solid waste under RCRA.
- *Ecological Rights Foundation v. PG&E*, 713 F.3d 502 (9th Cir. 2013): Wood preservative that drips off utility poles incidentally in the course of use is not “discarded material” or solid waste.
- *Oklahoma v. Tyson Foods, Inc.*, 2010 W.L. 653032 (N.D. Okla. 2010): Poultry litter does not become solid waste when land applied as fertilizer merely because it is not fully utilized by crops.

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BUT . . .

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Water Keeper Alliance v. Smithfield Foods 2001 WL 1715730 (E.D. N.C. 9/20/2001)

- There is no blanket manure exemption from RCRA’s definition of solid waste.
- Whether a farm “returns” manure to the soil as a fertilizer requires focus on the manner in which the farm uses the manure.
- No final ruling on the facts.

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CARE v. Cow Palace, LLC 2015 WL 199345 (E.D. Wash. 1/14/2015)

- Where nutrients from manure accumulate in soil at levels that cannot be utilized by crops, the manure is not returned to soil as a fertilizer.
- Therefore:
 - Not subject to agricultural exemption from definition of solid waste.
 - Discarded and regulated as solid waste under RCRA.
- First time a court has affirmatively held that land-applied manure is a RCRA solid waste.

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CARE v. Cow Palace, LLC, 2015 WL 199345 (E.D. Wash. 1/14/2015)



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CARE v. Cow Palace, LLC
2015 WL 199345 (E.D. Wash. 1/14/2015)

- Nitrate contamination in ground water.
- Farm sued under RCRA by local citizen group and Center for Food Safety
- Legal theories:
 - Open dumping, 42 U.S.C. § 6945(a).
 - Imminent and substantial endangerment, 42 U.S.C. § 6972(a)(1)(B).

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CARE v. Cow Palace, LLC
2015 WL 199345 (E.D. Wash. 1/14/2015)

- Land application:
 - State-approved nutrient management plan.
 - Routinely inspected and found to be in compliance.
 - Washington State officials said facility well run, made good use of nitrate.
 - All application directed by agronomist.
 - Problem: Farm did not take into account residual nitrogen in soil when calculating application rates.
 - Court:
 - Application was “untethered to the NMP and made without regard to fertilization needs of their crops.”
 - “Failure to adhere” to NMP is not actionable, but provides “strong evidence” that farm’s land application of manure was not “useful” or “beneficial” but was rather an effort to discard excess supply.

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CARE v. Cow Palace, LLC
2015 WL 199345 (E.D. Wash. 1/14/2015)

- Composting:
 - Farm composts manure in piles on bare ground.
 - Court:
 - Once nitrates leached into soil, the nitrates could no longer be put to beneficial use via land application.
 - Therefore, composted manure was knowingly abandoned into the underlying soil and constitutes solid waste.

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CARE v. Cow Palace, LLC
2015 WL 199345 (E.D. Wash. 1/14/2015)

- Lagoon storage:
 - Lagoons were designed and constructed in accordance with NRCS standards.
 - NMP states that lagoons meet NRCS standards.
 - Unlined, but NRCS standards allow for permeability.
 - No dispute that lagoons leaked and nitrates accumulated in soil.

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CARE v. Cow Palace, LLC
2015 WL 199345 (E.D. Wash. 1/14/2015)

- Court:
 - NRCS standards “suggest” that lagoons located over aquifers incorporate “additional measures of safety from pond seepage,” such as liners.
 - In this case, leaks are not natural, expected consequence of manure’s use but “rather a consequence of the poorly designed temporary storage features of the lagoons.”
 - Even assuming the lagoons were constructed pursuant to NRCS standards, these standards specifically allow for permeability and, thus, the lagoons are designed to leak.
 - Where lagoons are leaking and manure is accumulating in soils at rate of millions of gallons annually, the manure is discarded (“knowingly abandoned”) and constitutes solid waste.

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ANALYSIS

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Questions?

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Please join us for our next webinar:

Friday, April 10, 1—2 p.m. EST

***Nursing Home Costs & Medicaid:
The One-Two Punch to the Family Farm***

Craig Vandervoort
Sitterly & Vandervoort Ltd, Lancaster, Ohio

OSU Agricultural & Resource Law Program
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