

A G E N D A

Livestock Siting Technical Expert Committee

Friday, March 22, 2019

9:00 a.m. to 3:00 p.m.

DATCP
Board Room 106
2811 Agriculture Drive
Madison WI 53718

- 9:00 a.m. **Call to Order**
- 9:05 **Review of February 15th Meeting Notes:** Committee Members, Advisors, and DATCP Staff
- 9:25 **Discussion of Issues relating to Permit Modification:**
- Does the permit modification process in the draft rule achieve the goals set by the 2014 committee of establishing a streamlined process for facilities to secure approval of NMPs when adding animals after they are permitted?
 - Do the proposed permit modification procedures create unintended loopholes for livestock operators to avoid meeting siting requirements?
- 9:45 **Agriculture-Related Risk Factors for Private Well Contamination in NE Wisconsin:**
Presented by Mark Borchardt, TEC Member, USDA-Agricultural Research Service
- 10:45 **Break**
- 10:55 **Discussion of Issues relating to Groundwater Protection:**
- Manure spreading restrictions beyond NRCS 590 requirements (e.g. NR 151.075 targeted performance standards)
 - Monitoring and verification of manure applications
 - Adopting additional manure storage standards (e.g. setbacks) to protect groundwater
- 12:00 p.m. **Lunch**
- 12:45 **Continue Discussion**
- 1:50 **Break**
- 2:00 **Continue Discussion**
- 2:45 **Wrap Up and TEC Final Report:** DATCP Staff
- Summary of progress on assignments
 - Plan for finalizing the committee's report to DATCP Secretary
- 3:00 **Adjourn**

Notes

Livestock Siting Technical Expert Committee

February 15, 2019
9:00 a.m. to 3:00 p.m.

DATCP
Board Room 106
2811 Agriculture Drive
Madison WI 53718

Present: Kevin Beckard, Chris Clayton (chair), Richard Castelnuovo, Brian Holmes, Tonya Gratz (by phone), Jerry Halverson, Mary Anne Lowndes, Chuck McGinley (by phone), Bob Pofahl, Patrick Schultz, Robert Thiboldeaux, Scott Mueller, Gretchen Wheat, Mark Borchardt, and Matt Ruark (by phone).

The meeting was convened at 9:08 a.m. The following notes are intended to capture the points of agreement.

The group modified the notes from the prior meeting as follows (changes highlighted in yellow):

- If the odor standard is not used, the current 350-foot property line setback for manure storage (liquid only) and other high odor sources (housing types such as slatted floor, pull plug to storage and alley flush to storage) does not provide adequate separation to protect residences and high use buildings¹.
 - As defined in ATCP 51, high use building may not encompass all the land uses that should be protected from odor such playgrounds, beaches, parks, municipal boundaries and the definition should be revisited by looking at resources such as the report from Wisconsin Manure Irrigation Workgroup, <https://fyi.extension.wisc.edu/manureirrigation/files/2017/04/Manure-Irrigation-Workgroup-Report-2016.pdf>
 - Solid manure stacks and storage facilities for storing dry manure should not be treated as high odor sources.
- To establish setbacks in lieu of the existing odor standard, it is technically supportable to use OFFSET, which may result in minimum manure storage setbacks starting at 600 feet from residences or other occupied land uses. When using OFFSET for this purpose, the annoyance-free-frequency curves chosen as input to the model should reflect the expectations established by zoning. For example, a higher curve (e.g. 91% annoyance-free-frequency versus 89%) should be used to account for new or expanded livestock facilities in or adjacent to residential zoning, and likewise a lower curve should be used in or adjacent to agricultural zoning.
- Increased setbacks for high odor sources should be applied in a manner that provides appropriate protections (some percentage protection below for neighbors based on reasonable uses of the adjacent land).
 - This outcome cannot be accomplished by universally applying setbacks from the property line of a livestock facility.

- Setbacks should be applied in a way that protects to residences or high use buildings.¹
- Zoning establishes reasonable expectations for the use of land.
 - In areas with agricultural zoning, where farming is the primary use of land, setback distances should be less than those where the facility is adjacent to or near an area not zoned for agriculture.
 - For residential or other non-agricultural zoning, setbacks must protect the rights of adjacent landowners to develop their land consistent with allowable land uses.
 - Setback distances should be greater for high use buildings than for residences.
- Livestock operators should have the option to receive credit toward a setback by implementing reliable and effective odor control practices.
 - Chemical or biological additives and diet manipulation are not reliable, and should not be among the approved odor control practices.
 - Credits applied to setback distances should reflect the effectiveness of a practice in controlling odor.
 - The expert committee’s past recommendations related to odor control practices should be considered in setting credits.
 - No credits should be applied to setback distances based on completing plans.
 - Odor control practices can be combined to allow for additional setback credits, understanding that multiple practices have a cumulative impact with diminishing returns on controlling odor.
 - Certain practices should not be combined such as bottom filling and a cover for manure storage.
 - Allowable combinations might be identified by categorizing practices by their effect: reducing odor generation (diet manipulation), reducing odor emissions (scrubbers), and enhancing odor dispersion (windbreaks).
 - There should be a reporting and monitoring system to ensure that livestock operators implement odor control practices in accordance with specifications.
 - If local governments are permitted to reduce setbacks through variances, state law should establish clear standards for granting a variance.
- The current odor management standard, which relies on the odor score along with the existing setback distances, should be replaced by a system that incorporates setbacks based on odor generation combined with credits for odor control practices.
 - This new approach to the odor management and setback standards should be simpler and designed to offer livestock operators some level of flexibility and options.
- To the extent that odor management plans will assume a different role, currently permitted livestock operators should be required to carry forward commitments made in the latest approved application to implement the odor control practices listed when a passing odor score was attained.
 - The rule should provide local governments with effective mechanisms to ensure compliance with plans.
 - Model plans should remove practices and actions that do not resolve odor complaints.

¹ “High-use building” is defined as “A residential building that has at least 6 distinct dwelling units; a restaurant, hotel, motel, or tourist rooming house; a school building; a hospital or licensed care facility; or a non-farm business or workplace that is open at least 40 hours a week. The odor score for your livestock facility depends, in part, on the proximity and density of neighboring “high-use buildings.” [ATCP 51.01\(16\)](#)

The expert committee answered the questions presented for the February 15th meeting as follows:

- ATCP 51 should incorporate the 2017 NRCS 313 standard.
 - After discussing the benefits and burdens of adopting the new standard, including the added groundwater protections, the group agreed that it should follow the precedent of adopting the latest technical standard (2017) in absence of compelling reason to do otherwise.
- As part of incorporating the 2017 NRCS 313 standard, DATCP should evaluate other NRCS standards related to manure storage (NRCS 317 Composting, NRCS 318 Short Term Storage, and NRCS 520-522 Pond Sealing and Liners), to determine if these technical standards should be incorporated into ATCP 51.
- Waste storage facilities designed to handle leachate and other non-manure wastewater should be designed to meet the 2017 NRCS 313 standard, and ATCP 51 should include a notation to reflect that these facilities may need to meet additional requirements of NR 213 if regulated under NR 213 administered by DNR.
 - The NR 213 has additional requirements including a five-foot separation from bottom liner, differences in liner specifications, and restrictions on in situ earth liners.
- State rules (e.g. NR 213, ATCP 51) affecting the storage of leachate and process wastewater should be updated to have consistent requirements.
- ATCP 51 should not require livestock operators to have manure storage based on the size of facilities. Instead, compliance with 2015 NRCS 590 should be the focus. (The 2014 TEC recommended incorporation of the 2015 NRCS 590 standard into ATCP 51.) Any concerns about the risks of manure spreading, in particular during winter, should be considered in the context of the nutrient management standard and related spreading restrictions.
- For the purposes of determining an acceptable discharge from existing animal lots, ATCP 51 should follow a prescriptive approach based on a model that estimates phosphorous runoff and not rely on the professional judgement of persons authorized to certify the siting application's runoff management worksheet.
 - The model should predict the likelihood of runoff discharging to a waterbody.
 - The model should not rely on subjective characterizations or inputs including the designation of the treatment area or the characterization of lot use as heavy, medium or light.
 - Applying these standards for a model, the BARNY model currently in the rule may not measure up in comparison to newer tools. Tools such as BERT and APLE may better perform the desired functions identified above, and these models should be evaluated for use in ATCP 51. If BERT is incorporated into the rule, an applicant must use the model to document that an existing animal lot does not present a resource concern, making the necessary changes to resolve any identified resource concerns.
- ATCP 51 should incorporate the following updated technical standards for the applicable livestock structures:

- 2016 NRCS 635 standard for new and substantially altered animal lots.
 - 2017 NRCS 629 and 2016 NRCS 635 standard for new and substantially altered feed storage structures.
- The “substantially altered” definition in ATCP 51 should be reviewed to determine if it properly captures the instances when altered feed storage structures must meet the latest NRCS technical standards.
- ATCP 51 may create an exception to the design requirements for new and substantially altered feed storage structures under following conditions:
 - Exception only applies to storage less than one acre in size.
 - Exception only applies to runoff requirements where the risk of surface water contamination is low.
 - The design requirements for the storage surface meets technical standards designed to prevent infiltration.
 - Exception only applies when first flush is collected.
- ATCP 51 should require an engineering evaluation for an existing feed storage structure. The proposed evaluation flowchart was reviewed and largely accepted with notes to better clarify the following:
 - Evaluation for the presence of leachate during the soils investigation in addition to identifying soil properties. For example, the NRCS 629 standard provides that an existing feed storage area will be expanded as a part of the project by performing a test pit or boring to evaluate for leachate under the surface of the existing feed storage area.
 - A more detailed analysis of the runoff from the site using NRCS or similar evaluation tools.
 - An analysis of the need to collect first flush based on the type of feed stored (e.g. high moisture).
- ATCP 51 should require repair or upgrade of bunkers or similar storage structures that fail the evaluation standards. As part of an upgrade or repair:
 - A system to collect first flush may not always be required.
 - A perimeter drain collection system shall be installed around an existing facility if leachate is found under the surface of existing feed storage area
- ATCP 51 should require local governments to monitor permitted livestock facilities using an approved DATCP checklist.
 - The checklist should cover the key aspects of compliance with ATCP 51 standards.
 - The checklist should be comprehensive and forward looking, covering whether the operation is anticipating adding animals or building livestock structures.
 - Local governments should have the option of monitoring by conducting site visits of permitted livestock facilities or requiring self-reporting by livestock operators.
- The process for making completeness determinations, as modified in the draft version of ATCP 51, is acceptable.
 - Oversights or mistakes in the determination process can be corrected at the time of the hearing and final determination of compliance with standards.

https://madison.com/wsj/news/local/govt-and-politics/dna-evidence-traces-drinking-water-hazards-and/article_daf21447-0b24-5b0e-a1a6-ab3f5f17094c.html

BREAKING TOPICAL TOP STORY

DNA evidence traces drinking water hazards back farms and manure

STEVEN VERBURG sverburg@madison.com 4 hrs ago

TRY 3 MONTHS FOR \$3



Yellow-brown well water used to come from the tap in the home of Chuck Wagner, who lives in rural L Kewaunee County. He said testing linked the contamination to cattle manure. It cost him \$10,000 to d but it still wasn't free of contaminants.

CHUCK WAGNER

A sophisticated new analysis of conditions around hundreds of polluted wells in Wisconsin found that farming and animal manure pose far greater risks than other factors linked to two contaminants that have consistently posed serious health hazards in places with vulnerable drinking water sources.

The findings released Wednesday offer new insights into the longstanding debate about the role played by the state's agriculture industry — as opposed to septic systems — in the stubborn problems of bacteria and nitrate pollution.

The conclusions of the research led by U.S. Department of Agriculture microbiologist Mark Borchardt are bound to stir controversy because they raise questions about the

adequacy of state regulations that are supposed to protect water from the hundreds of millions of gallons of dairy manure stored in lagoons and spread on the ground.

The findings also raise questions about Gov. Tony Evers' proposal to expand a state program that helps homeowners rebuild polluted wells.

Borchardt described his findings Wednesday in a talk at the annual Midwest Manure Summit at Lambeau Field in Green Bay. In an interview with the Wisconsin State Journal before the conference, Borchardt said the study of Kewaunee County wells is applicable to all parts of eastern Wisconsin and other places in the Midwest with a porous bedrock formation called Silurian dolomite.

Borchardt's research team analyzed conditions around each of hundreds of wells, including distance from farm fields, manure storage sites and septic fields, along with data on well construction, and the depth to bedrock and groundwater.

He said he was surprised to see that the highest risk for coliform bacteria was not how near a well was to farm land, but specifically the well's proximity to a manure storage site.

"That was an analytical bombshell," Borchardt said. "I was thinking there would be other things that would be more important."

Coliform signals the possible presence of other bacteria, viruses and parasites that cause flu-like symptoms ranging from mild to severe to life-threatening. Nitrate is linked to potentially deadly methemoglobinemia, or blue-baby syndrome, as well as thyroid disease, diabetes and cancer in adults.

Both coliform and nitrate can come from human waste or animal manure, so there has been controversy about how to prevent them from getting into drinking water. The new study found the strongest statistical links by far were

those linking coliform-polluted water with nearby manure storage. There was also a strong association between nitrate pollution and nearby farmland.

One of the ways farming interests have fended off proposals for tighter regulation of agricultural pollution has been by suggesting residential septic systems were a big part of the problem.

Shelly Mayer, executive director of the Juneau-based Professional Dairy Producers, said Borchardt gave the group's board of directors a preview of his findings, and she came away feeling that much more study was needed to determine next steps.

"There's just so many questions," Mayer said Wednesday. "Let's study, study, study, study. ... We don't want to leap before we know. Sometimes when we start messing with systems we can make matters worse."

Law allows leakage

It's not the first time farmers have called for patience when the effectiveness of farm pollution laws has been questioned.

Under federal standards that have been adopted by Wisconsin, manure storage lagoons don't need to be lined with impermeable material, and some leakage is legal.

But the risk from lagoons might not be all about leakage, Borchardt said. Stored manure is spread on fields in the spring before crops emerge. It's expensive to truck the animal waste long distances, so the risk factor could be an indication of heavier land spreading near the storage sites.

"If you really wanted to know about leakage you could put in groundwater monitoring wells," Borchardt said.

Agricultural interests have opposed monitoring. A few years ago, citizens demanded that a monitoring requirement be included in the permit of a large dairy feedlot, but the state resisted and eventually the case went to court. An appeals court has asked the state Supreme Court to decide the case.

Borchardt's study found that certain microbes in human waste were more likely to taint water when a septic system was nearby. But septic systems were not closely associated with coliform or nitrate contamination.

For a household 150 feet from a manure storage site to reduce the risk of coliform contamination by 90 percent, its well would need to be moved three miles away, Borchardt said.

The study's analysis of nitrate pollution found that a well drawing water in the vicinity of 40 acres of farmland faced five times the risk of a well with no farming nearby.

In recent years amid complaints about water quality, the state has offered money for well reconstruction to help families with polluted water, and Evers has said he plans to expand the effort in the budget he was releasing Thursday.

Farming interests have suggested that some drinking water contamination may be the fault of poor well construction.

But wells built to draw from deeper groundwater weren't significantly less likely to be contaminated than shallow wells, Borchardt said.

"You can't construct yourself out of contamination," Borchardt said. "I don't even think people could afford to go as deep as you'd have to go."

Built on DNA from microbes

The research was built on Borchardt's previous studies using DNA markers to identify exactly which types of microbes were in tainted wells. Some pathogens come from farm animals, while others from humans. Still others — such as coliform and nitrate — can originate from either source.

Borchardt said the new study was the first time a highly rigorous risk assessment has been applied to several potential causes and types of water pollution.

“The models are sophisticated in that they account for the effects of multiple risk factors at the same time,” Borchardt said.

Silurian dolomite poses public health hazards by allowing pathogens and nitrate from the surface to reach groundwater, Borchardt said.

The findings come on the heels of another study Borchardt was involved in that found 42 percent of wells in three southwest Wisconsin counties were contaminated. That region has another kind of porous bedrock, and areas with different soil conditions. A separate risk assessment is planned for those three counties, Borchardt said.

Steven Verburg | Wisconsin State Journal

Steven Verburg is a reporter for the Wisconsin State Journal covering state politics with a focus on science, environment as well as military and veterans issues.