Department of Agriculture, Trade and Consumer Protection

A G E N D A

Livestock Siting Technical Expert Committee

June 11, 2015
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	Report on Manure Irrigation Workgroup - Ken Genskow, Chair
10:00	Addressing manure irrigation as a part of siting standards • Review of local regulation of manure irrigation, and past proposals to establish a siting standard – Steve Struss and Richard Castelnuovo • Discussion and recommendations – Committee
10:30	Break – Coffee provided
11:30	Review and finalization of committee notes and recommendations– Jeff Lyon
12:00 p.m.	Lunch – Provided
12:45	Finalization of notes and recommendations (continued) – Jeff Lyon
2:30	Wrap Up – Jeff Lyon • Thank you • Last step: email circulation of final work product before public release
3:00	Adjourn

MEETING NOTES

Livestock Siting Technical Expert Committee

September 18, October 15, November 18, and December 19, 2014, and January 27 and March 24, 2015

Sixth Meeting Attendees

Members: Kevin Beckard, Mark Borchardt, Tanya Gratz Jerry Halverson, Brian Holmes, Chuck McGinley (by teleconference), Bob Pofahl, Matt Ruark. Advisors: Joe Baeten, Richard Castelnuovo, Pat Murphy, Sue Porter, David Panofsky, John Ramsden, Steve Struss, Robert Thibodeaux, Gretchen Wheat. Additional attendees: Lisa Trumble, Sara Walling, Pat Schultz (by teleconference)

Cumulative Notes (Including Sixth Meeting)

Notes for the committee are intended to capture the committee's consensus regarding responses to assignment questions, and will be maintained on a cumulative basis. The notes covering the most recent activity of the committee are highlighted in gray. These Notes will be finalized at the next meeting of the committee. The following are the cumulative notes for the meetings listed above.

Consistency of Rules (CR)

CR Question # 1

To be consistent with the state standards in NR 151 and ATCP 50, ATCP 51 should include a requirement for livestock operators to manage their operations to avoid significant discharges of process wastewater. The "zero discharge" standard in NR 243 should not be incorporated into ATCP 51. In applying this new standard, ATCP 51 should use the definition of process wastewater and significant discharge in NR 151. Complying with this standard will depend on a number of factors including a farm's location to waters of the state. The siting application should be modified to better document current and future compliance with this requirement.

CR Question # 2 (as modified at second meeting)

ATCP 51 should require that new and substantially altered bunkers, paved or other lined feed storage facilities be designed, constructed and operated in accordance with NRCS standard 629 (January, 2014) and NRCS standard 635 (September, 2012) except that facilities proposed in low risk locations may not need to install collection systems or vegetative treatment areas if certain conditions are met. This exception is only available to proposed livestock facilities under 1,000 AU. As a first step, a permit applicant must have an evaluation of their site and existing facilities conducted using the procedures discussed in the response to Engineering Question #5.

Applying the evaluation criteria in NR 151.055(3), it must be determined that any existing facility subject to alteration ("expanded facility") is not causing a substantial discharge. The evaluation also must document that the proposed new or expanded facility has adequate separation distances to protect against surface water and groundwater contamination. In addition, the evaluation must show that the soils near the new or expanded facility do not have a

high potential for leaching contaminates to groundwater. The committee discussed further limiting the exception to exclude new or expanded facilities that exceed 0.5-1.0 acres in size.

If these required conditions are met, applicants can receive approval of the proposed facility if they (1) design and construct the new facility, or new portion of the expanded facility, in accordance with Tables 1, 2, or 3 in the current NRCS standard 629, and (2) divert clean water away from the new or expanded facility.

These design and construction requirements apply to new or substantially altered storage areas that hold commonly stored feeds, not just feed over 70 percent moisture (cannery, brewers and distillers byproduct feeds). The committee considered applying these requirements to facilities that store feed with as low as 40 percent moisture, but also considered using a percentage somewhere between 40 and 70 percent. The design and construction requirements do not apply to feed stored in bags or tower silos.

CR Question # 3

For all volumes generated, milking center wastewater should be discharged to manure storage or another structure that meets the design criteria of NRCS standard 313 except if the livestock facility produces less than 500 gallons of wastewater daily and does not store the wastewater for an extended period, then the livestock operation must use the treatment practices described in NRCS standard 629 (January 2014).

CR Question # 4

To be consistent with the state standards in NR 151 and ATCP 50, ATCP 51 should require that cropland covered by a permitted facility's nutrient management plan have an average Phosphorus Index (PI) of 6 over a rotation and annual PI not to exceed 12, consistent with the requirements of NR 151.04. A facility's required nutrient management plan, if it includes an appropriate phosphorus index (PI) calculation value, may be used to demonstrate compliance with these PI requirements. A livestock operator may meet the phosphorus management requirements in NRCS standard 590 (September, 2005) by using a soil test management approach as an alternative to a PI calculation. A local government may request NM plan updates and other documentation to monitor a permitted facility's compliance with the PI requirement.

CR Question # 5

ATCP 51 should incorporate the following standards adopted in NR 151 and ATCP 50:

a. A requirement that pastures be managed to control erosion and be covered by a nutrient management plan if they have certain stocking rates.
b. A requirement that tillage not be conducted within a 5-20 foot setback between cropped fields and surface water.

As a condition of their permits, livestock facilities would be responsible for maintaining compliance with these requirements on all land, including rented acres.

CR Question # 6

DNR does not currently enforce the tillage setback through its CAFO permits, but it may revise its rule requirements to incorporate this and other NR 151 requirements. While DNR does not

currently enforce the annual maximum PI of 12, it has other CAFO requirements that function in a similar manner and may include this particular requirement in a future rule update. DNR may also require CAFOs to prepare a pasture management plan. After considering how NR 151 standards are applied to CAFOs, the committee did not recommend any adjustments to its recommendations for questions 1 through 5 above.

CR Question # 7
To be consistent with ATCP 50, references in ATCP 51 should be updated to reflect the following NRCS technical standards:

a. NRCS technical guide waste storage facility standard 313 (January, 2014).
b. NRCS technical guide, closure of waste impoundments standard 360 (March, 2013).
c. NRCS technical guide waste treatment standard 629 (January, 2014)
d. NRCS technical guide waste transfer standard 634 (January, 2014).
e. NRCS technical guide vegetated treatment area standard 635 (September, 2012).

The committee recognized that references to the NRCS standards listed, and possibly additional NRCS standards, will need to be updated in ATCP 51.

Engineering

E Question # 1 (as modified at the third meeting)
For the purposes of the siting rule, BARNY is a more appropriate tool than BERT for evaluating animal lot runoff and design practices to meet targets for annual phosphorus runoff. BERT does not account for local rainfall conditions, does not generate a result expressed in terms of annual phosphorous runoff, and does not provide design practices to reduce runoff. Despite its limitations, BARNY has a long history and wide acceptance as a tool to assess barnyard runoff. NRCS currently maintains BARNY as a worksheet in Spreadsheet on Vegetated Treatment Areas. NRCS will be updating BARNY to include the most recent NOAA rainfall data. Based on a comparison between BARNY and the Annual Phosphorus Loss Estimator (APLE) for barnyards, developed by research soil scientist Peter Vadas (with the USDA Dairy Forage Research Center), BARNY remains a more appropriate evaluation and design tool, although APLE may have a better supported model for predicting runoff and future enhancements, it may be a better choice over BARNY in the future.

Whichever model is used, a local government should be allowed to require a livestock applicant to submit documentation (e.g. a printout of the model inputs and outputs) to demonstrate compliance with the runoff limits for barnyards. Most agreed that this documentation is easily provided, is often voluntarily submitted, and should be available to local governments if it is not voluntarily provided.

E Question # 2
ATCP 51 should better define when an operator can modify an existing animal lot to meet the ATCP 51.20(2) runoff threshold without implementing the full set of requirements in NRCS 635 related to wastewater treatment. In defining what is allowed as a "minor alteration," ATCP 51 should retain the requirement that an operator must comply with the NRCS 635 standard if the

animal lot is "substantially altered," which means "an increase of more than 20% in the area or capacity of a livestock structure used to house, feed or confine livestock."

ATCP 51 should identify the management or practice changes that can be implemented as "minor alterations" to achieve compliance with the runoff thresholds. The following should be considered: lot cleaning, changes to provide laminar flow (e.g., shaping, seeding), roof gutters, diversions, underground outlets, and sediment basins. To document compliance with ATCP 51, an applicant must submit a copy of the BARNY model completed to reflect the proposed changes. To the extent that the changes involve an engineered practice, the applicant must submit a design for the practice that meets the applicable NRCS or other technical standard.

These submissions represent the applicant's commitment to perform the work promised, and may be enforced in the same manner as other permit requirements. ATCP 51 should be modified to enable a local government to set a one year limit regarding the installation of these "minor alterations," with the authority to reduce the time if the local government determines that the unmanaged runoff presents an unacceptable risk of contamination to surface or groundwater.

E Question # 3

The evaluation standards and procedures for existing storage structures, as reflected in Worksheet 4 (Appendix A, 390-33) and Existing Manure Storage Evaluation Flowchart, are reasonable and consistent with sound technical principles. Minor adjustments in the evaluation standards might be appropriate, such as extending the allowable window from 3 to 10 years for properly designed storage facilities that are not steel or concrete. Additional guidance should be provided to engineering professionals who conduct evaluations of storage facilities. For example, it is usually necessary to empty a facility, particularly earthen-lined structures, to conduct a valid inspection, however this may be difficult. A number of factors may determine whether there is reasonable cause to fully empty a facility, including its age, the results of visual inspection of its exposed area, and the likelihood that agitation may have compromised its liner. If no documentation is available regarding a facility's separation distances to groundwater or bedrock, test pits or borings may be required to complete a facility evaluation. This approach is consistent the procedures used by DNR in its evaluation of storage facilities under NR 243.

By definition, a manure storage facility includes the waste transfer portion of the facility. It is feasible to evaluate exposed portions of an existing waste transfer system. If the waste transfer system was installed according to technical standards, a professional engineer could review the design and "as-built" documentation. Reception tanks may be visually inspected, or assessed for leakage using soil borings. Likewise open channels and equipment such as pumps and valves can be visually inspected. The evaluation of conveyances, such as underground pipes, is more challenging; it may not be realistic to require pressure testing of pipes or digging test wells at various intervals along its length. The committee will review a flowchart for the assessment of waste transfer systems, to be prepared by staff.

E Question # 4

ATCP 51 and related worksheets should be updated to reflect the latest technical requirements for engineered and related practices used in connection with the odor and other siting standards.

Specifically, the following practices in the siting rule should be associated with the listed NRCS or other standards:

- For composting facilities, reference NRCS Standard 317.
- For anaerobic digesters, NRCS Standard 366.
- For digester substrate storage, NRCS Standard 313 or DNR Industrial waste rules, such as NR 213, Wis. Admin. Code, based on types and amounts stored.
- For manure residual storage, NRCS Standard 313.
- For solid separation, NRCS Standard 632.
- For treatment of liquid waste, NRCS Standard 629 (except for vegetated treatment areas covered under NRCS 635).
- For sand settling lanes, NRCS Standard 632.
- For impermeable manure storage covers, NRCS Standard 367
  For natural crust and bio-covers, DNR recommendations related to control practices for air emissions.
- For treatment membranes, NRCS Standards 629.

NRCS standards such as NRCS standard 632 may need to be supplemented with provisions that reflect specific issues in the siting rule.

E Question # 5

Existing permanent feed storage facilities should be evaluated to determine whether they (1) are in good condition, and (2) do not present risks of discharging leachate or contaminated runoff to waters of the state. The evaluation should determine if the facility is causing a substantial discharge using the criteria in NR 151.055(3). For facilities constructed within the last 10 years, the evaluation should determine if the facility was designed according to then-existing standards. To establish that a facility is in good working condition a visual inspection should be performed looking for signs of failure (e.g. cracks) or discharge of leachate. The evaluation also should determine the separation distances of a facility from streams, lakes, areas of concentrated flow, wetlands, floodplains and other surface waters susceptible to pollution risks. In terms of groundwater risks, the evaluation should determine the separation distances of a facility to bedrock and saturated soils, and any soils with a high potential for groundwater contamination. Tables 1 through 3 in the NRCS standard 629 should be used as a starting point to determine adequate separation distances.

The evaluation process for feed storage should be consistent with the other evaluation processes for manure storage and animal lots. DATCP should develop a flowchart to outline the evaluation processes. In the case of existing feed storage, the evaluation should be limited to paved facilities and be triggered only when the aggregate of paved storage exceeds ½ to ¾ acre (based on typical feed storage areas for a 500 AU dairy operation). The draft flowchart should account for the risk of infiltration and runoff of leachate and contaminated runoff. Specifically, the flowchart should have one or more steps that take into consideration: (1) separation from groundwater, (2) permeability of soil, and (3) the likelihood of runoff reaching surface water.

Based on evaluation of these factors, the operator may or may not need to perform repairs, install a perimeter drain, or make improvements to the treatment area. The committee will review another draft flowchart.

ATCP 51 should include management requirements for existing storage facilities including those that are operated without modification. The requirements for clean water diversion and leachate collection in ATCP 51.20(3) should be retained for existing paved facilities that store feed with 70% or more moisture content (cannery, brewers and distillers byproduct feeds). In addition, for all feed storage facilities, livestock operators should be required to divert clean water, and follow basic management practices such waste feed cleanup and snow handling that minimizes accumulations of waste feed that can lead to the discharge of contaminated runoff during spring thaw.

E Question # 6
ATCP 51 should provide more clarity regarding local government monitoring of a permitted facility's compliance with siting standards, including local review of whether engineered practices are properly operated and maintained. DATCP should strongly encourage local governments to monitor compliance, and support these local efforts by developing effective tools and providing training and guidance.

Checklists are effective tools to ensure accuracy and consistency in monitoring livestock facilities for compliance. Checklists need to be specific to either the producer to support self-certification, or the local government to enable consistent review of compliance. Checklists should be practice specific and incorporate the operation and maintenance (O&M) requirements in NRCS technical standards. For example, animal lots should follow the O&M requirements in NRCS standard 635.

While local governments are generally responsible for determining the nature and extent of monitoring activities performed on permitted farms within their jurisdiction, DATCP may consider the option of requiring that all permitted facilities complete and submit a self-certification checklist to local governments every two years. Monitoring of permitted facilities should be coordinated with DNR activities to avoid unnecessary duplication in the submissions required of CAFOs. DATCP should work with local authorities to collect accurate information concerning the implementation of the siting law and the performance of permitted farms, including responding to changes in farming operations and documentation of monitoring results. An additional fee to cover the monitoring costs of local governments to might be considered and could help encourage local implementation.

Nutrient Management

NM Question # 1
As part of their review of a permit application under ATCP 51, local governments should have access to Waste and Nutrient Management Worksheet # 3 (390-30 to 32) documentation supporting a nutrient management plan regardless of the size of the livestock facility applying for livestock siting permit. The CAFO exemption ATCP 51.16(4) should be removed. Local governments should be able to request documentation to substantiate that the applicant, who may also hold a WPDES Permit is meeting the requirements for a nutrient management plan under

the siting law. The applicant, not the DNR, should be responsible for providing this documentation.

The local government would use this documentation to establish that the land application of nutrients from the livestock facility complies with the NRCS 590 Standard and covers the maximum number of animal units requested in the permit application. Local governments may request additional information to substantiate the planner's answer to one or more questions on the NM checklist (390-32) and may deny approval if the documentation does not reasonably substantiate the answer. In a typical case, applicants or their consultants can easily satisfy a local request for documentation by providing the applicant's SnapPlus database and NRCS 590 nutrient management restriction maps from the annual planning process.

NM Question # 2
As part of the Waste and Nutrient Management Worksheet # 3 (390-30 to 32), the applicant must document through their nutrient management plan developed to NRCS 590 Standard that the owned or rented land is adequate to spread the manure generated by the maximum number of animal units authorized under the permit. The annual NM plan updates would include the current animal units at the facility and the acreage necessary to apply the nutrients.

A permit modification process may be further described in the rule to accommodate the needs of operators while maintaining the "maximum animal unit" concept fundamental to the permitting process under the livestock siting rule.

NM Question # 3
Waste and Nutrient Management Worksheet # 3 (390-31 and/or 390-32) should be modified to require that an applicant identifies land spreading acres that are rented, in addition to those that are owned. Maps depicting the rented and owned acres are able to be requested to support Worksheet #3. The committee also discussed that requesting additional information regarding rented acres for spreading manure could be requested.

NM Question #4:
~~While the NRCS 590 Standard balances agronomic and water quality parameters, it is not intended to result in zero discharge~~. The committee supports the Standards Oversight Council process for revision of the NRCS 590 Standard to address water quality concerns connected with nutrient applications. Based on its review of a March 23, 2015 draft of the NRCS 590 standard, the committee supported in concept the following revisions and additions:

- Additional winter spreading restrictions, including a new risk assessment tool and planning requirements, a prohibition on nutrient applications on frozen- and snow-covered fields locally identified as areas contributing direct runoff to surface and ground water, and a prohibition on liquid manure applications on frozen- and snow- covered fields in DNR Well Compensation areas or on silurian dolomite soils.
- Expanded nitrogen (N) application restrictions and prohibitions related to bedrock depth, soil types, and/or timing

- Enhanced nutrient application setbacks including a restriction on spreading untreated manure in locally identified as areas contributing direct runoff to groundwater conduits unless the manure is substantially buried within 24 hours of application.
- Additional restrictions related to N recommendations and rates, including restrictions on late summer and fall applications of commercial N in sensitive fields (e.g. within 5 feet of bedrock).
- Increased P management (PI and Soil Test P limits and resulting restrictions).
- Greater focus on erosion control.

~~The proposed revisions to the NRCS 590 NM Standard are expected to better address water quality concerns by imposing winter spreading prohibitions, winter spreading plan requirements, setbacks to direct conduits, and nitrogen restrictions based on sensitive soil types. The proposed revisions to the standard includes a provision for planners to take steps to identify and address locally identifiable runoff risks.~~

The Committee agreed that the concepts in the March 23, 2015 proposal for the revised 590 NM Standard should be incorporated into ATCP 51. When the standard is finalized, DATCP should evaluate the best approach to include the new NRCS requirements as part of the rule.

~~The Committee discussed whether or not the proposed revisions to NRCS 590 Standard will adequately address concerns raised by some local governments that are not confident that locally identifiable risk areas and potential groundwater problems are being considered when writing nutrient management plans.~~

~~The Committee also discussed the lack of understanding and uncertainty in the process by local governments to meet state requirements for adopting more stringent standards to protect groundwater. Among the challenges relate to this is the technical capacity to accurately map affected land. For example, in many cases there is not accurate information to delineate Karst areas or drainage areas contributing to the groundwater conduit.~~ The committee suggested that DATCP clarify how locally identified restrictions authorized under NRCS 590 Section V.A (involving criteria for surface and groundwater resources) can be imposed under ATCP 51 requirements for nutrient management planning. Further, DATCP should help local governments understand how they can meet current state requirements for adopting more stringent standards to protect groundwater.

~~At its February 2015 meeting, the Committee will likely receive an update on the latest draft of the NRCS 590 NM Standard and may further consider whether the NRCS 590 NM Standard meets local needs. Members may examine and/or recommend manure spreading provisions in terms of the depth to bedrock, areas that drain to groundwater conduits, and other sites susceptible to groundwater contamination (as defined by NR 151). The group also may examine provisions in NR 243 or local ordinances in this review.~~

With respect to groundwater risks from pathogens, the March 23 2015 version of the NRCS 590 standard identifies the addition of lime in septage and other treatment approaches as methods to kill pathogens.

Odor

There is a hierarchy of source information used to evaluate the numbers assigned to livestock structures for odor generation and control practices. For its review and recommendations, the Committee utilized peer-reviewed, published studies which are considered the gold standard. The Committee also found significant value in published scientific studies that are not peer-reviewed, while literature reviews on certain subjects provided an informative and useful overview. Acknowledging the gaps in research, particularly the limited amount of odor research conducted within the last four years, the Committee considered observational data, and intuitional opinions of experts.

O Question # 1
The following recommendations relate to the odor generation numbers identified in Worksheet 2 (Appendix A, Chart 2, 390-25) for the listed livestock structures:

- For Dairy Free Stall and Beef and Dairy Heifers (slatted floor including floor and pit below), (scrape) and (bedded pack), the current generation numbers of 6, 4 and 2 respectively should be retained since there is not adequate research or other information to make changes, and the definition of housing types should include naturally-ventilated (which is wind-driven and random) and power-ventilated (which is controlled and adjustable). In the case of power-ventilated housing, if ventilation is located on the side further from the property line, this additional separation may be included in the calculation of the odor generation number.
- For Dairy Free Stall and Beef and Dairy Heifers (Alley flush to storage), the odor generation number should be increased from 10 to 20, clarify that this housing type includes natural and power-ventilated housing, and define in the specification the baseline related to flush water used in the system (e.g. untreated water drawn from manure storage). This recommendation is supported by observational data, the anaerobic quality of the flush water, and findings from the National Air Emissions Monitoring Study (NAMS), http://www.epa.gov/agriculture/airmonitoringstudy.html, a two-year examination of air emissions from poultry, swine and dairy animal feeding operations sponsored by the US Environmental Protection Agency. The odor control practices for these flush systems will be reviewed to ensure that operators have the full benefit of the latest technologies and treatments.
- For Poultry Housing, layers (PLAY), two categories for layers should be created, with different odor generation numbers: high rise housing (birds and litter in same building) should retain the current number of 20 and belt system housing (litter stored separately from birds) should be assigned a number of 1, which is the same number used for broiler housing with litter. This recommendation is supported by observational data and inference and analogy based on the removal of manure before it goes anaerobic.
- For Waste Storage Facilities (Short term-less than 6 months) and (Long term-6 months or more), the numbers of 13 and 28 should be retained, but the method for predicting odors should be based on surface area, not storage duration. The odor generation number of 28 should be assigned to structures less than one acre and the number of 13 to structures larger than 1 acre. One acre of storage, at average depth, holds manure from a 500 cow dairy for six months. Surface area should be determined based on a measurement of the

stored waste with the structure at its maximum operating level (MOL). This recommendation is supported by the science of odor generation, observational data, and opinions of experts. In addition, surface area is less challenging to measure than duration. A higher odor generation number should not be assigned to storage of manure from swine vs. dairy or poultry. It was suggested that the credit for solid separation may need to be adjusted, which will be taken up later.

- Sand and Solids Separation Systems, including sand separation lanes (a.k.a. sand channels) and mechanical separation systems (e.g. screen, friction dryers, and screw presses), should be recognized in calculating an odor score. A new odor generation number of 40 should be assigned to areas of active treatment (e.g. lane where sand is separated, or a building housing mechanical separation equipment) and a generation number of 2 should be assigned to the sand/solids storage areas. A lower generation score of 20 might be assigned to settling lanes and other separation systems that do not use water drawn from manure storage. In counting the square footage of sand lanes, the new standard should distinguish between intermittent vs. continuous use, and not double count a second lane if it used in alternation with the first lane. The idle lane should be treated as storage. This recommendation is supported by a published study, and analogy to similar structures. For systems enclosed by buildings, appropriate odor control practices, e.g. bio-filters, should be recognized.

O Question # 2

The following recommendations relate to the odor control practices and credits identified in Worksheet 2 (Appendix A, Chart 3, 390-26) for the listed livestock structures:

Housing

- For diet manipulation (A1) related to housing, DATCP should retain a credit of 20%, but improve the specification to include odor control as a feed nutrition management goal and require applicants to document the specific feed ration for verification of its effectiveness. Milk urea nitrogen (MUN), commonly used to monitor feed nitrogen efficiency, also can be used to track the control of nitrogen emissions from a dairy farm, http://ars.usda.gov/SP2UserFiles/Place/36553000/pdf's/30_MUN_2nd_study.pdf
- For bio-filter (B1) related to housing, DATCP should retain the 90% credit but redefine how it is calculated. The credit should only be applied to the portion of the total ventilation air that is treated, which typically only involves air from the under floor pit. The specification should include a scheduled biofilter maintenance component.
- For wet scrubbers related to housing, create a new odor control practice with two parts: one that provides 90% credit if bleach or other chemicals are used, and another that provides 50% credit if water is used. Like biofilter, the credit should only be applied to the portion of the total ventilation air that is treated. This practice cannot be combined with practices in Chart 3, Category B. Chuck will provide supporting information.
- For Fresh Water Flush (B3) related to housing, DATCP should eliminate this practice, (since it is not practical), replace it with a new control practice involving "recirculated flush water" with treatment, and assign it a credit of 50%. A specification must be developed that accurately captures the practice of using gray water and re-circulating

flush liquids stored for less than 7 days. Some treatment may be needed to remove solids. This new practice cannot be combined with practices from Chart 3, Category B.

- For Treated Water Flush (B4) related to housing, DATCP should retain a 30% credit but the specification must be clarified to ensure adequate treatment. If separately treated in a small basin, for example, wastes from manure storage could be reaerated without excessive power requirements. Treatment should not include anaerobic digestion as an option. DATCP may need to more clearly identify appropriate treatment methods.
- For Air Dam (B5) related to housing for swine, DATCP should retain the current credit of 10%.
- For Windbreak (C1) related to housing, DATCP should retain the current 10% credit but consider offering additional credit if certain conditions are met (such as a planting that exceeds the minimum standard).

Manure Storage

- For Anaerobic Digestion (E1) in connection with waste storage, DATCP should reduce the current credit from 80% to 50% to more realistically reflect the odor control from this practice. This approach accounts for the best available research (e.g**.** *Manure Storage & Handling - Anaerobic Digestion Overview,* https://store.extension.iastate.edu/Product/AMPAT15), and recognizes the variables in the digestion process (e.g. reduced retention times). The specification, which will draw on NRCS Standard 366, should be modified to cover use of off-farm feed stocks to avoid compromising odor control. This practice should not be combined with other practices in Chart 3, Category E. Note: Digesters are one example of a trend toward separate ownership and operation of farm facilities that might be regulated under the siting rule. The committee recommended that DATCP review how the siting rule allows for regulation of these related facilities under a siting permit.
- For Chemical or Biological Additives (E2) related to waste storage, DATCP should retain the 20% credit. Similar to the recommendation for diet manipulation, applicants must identify the additive that will be used and provide documentation to show that it is effective. DATCP should allow applicants to claim a higher credit by meeting the requirements for an innovative odor control practice. Applicants should not be allowed to combine this practice with others listed in Chart 3, Category E.
- For Compost (E3) related to waste storage, DATCP should retain the 80% credit which applies to odor generated from stacked manure. In addition to incorporating the NRCS standard 317, the specification for the practice should ensure adequate containment and treatment of contaminated runoff.
- For Solids Separation and Reduction (E4) related to waste storage, DATCP should reduce the current credit to 20%. The specification should be modified to limit this practice to manure separation (as opposed to sand separation), to apply odor control practices separately to each chamber of a storage facility, and to include periodic checks (e.g. after agitation) to document compliance with the 2% or less solids requirement.
- For Aeration (F1) related to waste storage, DATCP should not provide a predetermined credit of 70%, but should require that applicants seek individual DATCP approval for innovative practices and receive a credit that is consistent with documented effectiveness for the proposed technology. This approach recognizes the variety of practices being installed and the risks of increased odor from under-designed systems.

- For Geotextile Cover (F3) related to manure storage, DATCP should increase the credit from 50% to 60% based on the most current scientific research on odor control.
- For Natural Crust (F5) related to waste storage, DATCP should retain the 70% credit but the specification should be improved to include measurable criteria, e.g. "80% of the surface must be covered, 80% of the time."

O Question # 3

From a technical standpoint, there is insufficient basis to change the exemptions to the odor standard in ATCP 51.14(2)(c) and Worksheet 2 (Appendix A, 90-22). Exempting livestock facilities by size (new facilities with fewer than 500 AUs and expansions over 1,000 AUs) can be justified. For example, smaller operations have fewer significant odor sources. Exempting operations with structures at least 2,500 feet from the nearest affected neighbor encourages good site selection.

O Question # 4

The committee considered options for awarding additional points toward a passing odor score based on the completion of plans related to incident response, employee training and odor management (Appendix A, Application for Local Approval, Nos. 12 and 13, p. 390-18). The prevailing view of the committee is that applicants should be required to complete all three plans. Planning is a critical component in successfully managing complex issues such as odor. The most effective plans are all-encompassing.

The committee could not agree on the number of points applicants should receive for completing required plans. ~~The committee discussed the degree to which the current plans provide odor protection beyond compliance with the odor model.~~ If the full 100 points were to be awarded, plan requirements must be strengthened. For example, ~~applicants could be required to prepare all three plans, including the optional odor management plan.~~ there will need to be enhanced requirements related to plan implementation and monitoring. If applicants are limited to earning only 50 points, they could be unnecessarily penalized, particularly if the rule is changed in other ways to increase setbacks or impose additional hurdles to securing a passing odor management score.

The difficulty in recommending a point award, the committee determined, is due to the three approaches collectively used to manage odor in ATCP 51: plans addressing employee training, incident response and odor management; a predictive odor model that assigns values to odor generation and for control practices; road and property line setbacks for livestock structures. Ideally the goal is to combine these approaches to achieve acceptable levels of odor. Reaching this goal is complicated by challenges presented by each tool. The odor standard ultimately is tied to an air dispersion model that does not fully capture how odors travel. Also additional research is needed to shed more light on odor generation and control practices. In the case of setbacks, property line setbacks do not take into account the proximity of existing residences, schools, and other occupied buildings adjacent to a permitted livestock facility. However, applicants who must complete the odor management worksheet do measure and account for odor impacts on nearby residences.

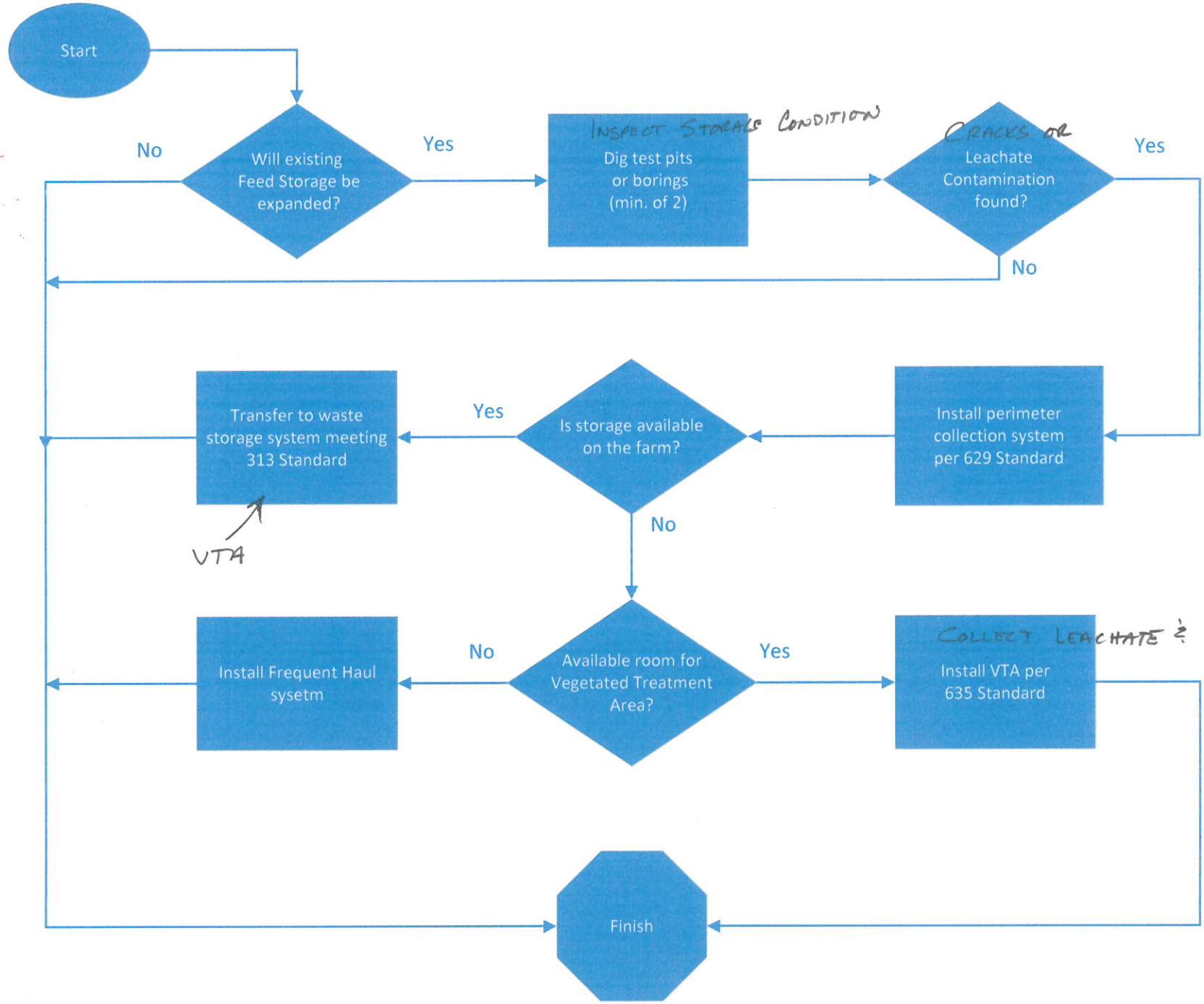
O Question # 5

Regarding monitoring compliance with odor control practices, the committee believed it sufficiently addressed this issue in its recommendations related to engineering practices (See E Question # 6 above). To support monitoring, DATCP should develop checklists and facilitate local review and oversight.

Setback Question # 1

The committee's discussion on setbacks was interconnected with its discussion on the odor standard and management plans as noted in answer to Odor Question # 4. Recognizing this relationship and the need to account for possible changes in other odor management tools, the committee agreed that the current system of setbacks should better account for the size of permitted facilities. Unlike setbacks for other livestock structures, which increase when a facility exceeds 1,000 animal units, the setback for manure storage structures remains constant. For manure storage structures located on facilities over 1,000 animal units, the committee agreed on a greater setback than the 350-foot road and property line requirement in the rule. The committee considered increasing the property line/road setback distance, applying increased setbacks to occupied buildings rather than property lines, accounting for high density uses such as schools in establishing a setback, and allowing use of odor control practices to reduce setbacks larger than 350 feet. The committee also discussed these issues: (1) increasing setbacks for livestock structures (e.g. housing) other than manure storage particularly for larger facilities, and (2) requiring greater setbacks for livestock facilities under 1,000 AUs unless these facilities used established methods to document how they will manage odor (e.g. secure a passing odor score).

The Committee's next meeting will be scheduled in May. The specific date depends on the status of recommendations from the manure irrigation workgroup whose next meeting is April 29th. For the May committee meeting, Ken Genskow will be invited to present the workgroup's recommendations, and the committee will consider whether any of the recommendations should be incorporated into ATCP 51. Once this is completed, the only remaining step for the committee is to review and approve its final recommendations.


Start
Will existing Feed Storage be expanded?
No
Yes
Dig test pits or borings (min. of 2)
INSPECT STORAGE CONDITION
Leachate Contamination found?
CRACKS OR
Yes
No
Install perimeter collection system per 629 Standard
Is storage available on the farm?
Yes
Transfer to waste storage system meeting 313 Standard
VTA
No
Available room for Vegetated Treatment Area?
Yes
COLLECT LEACHATE ?
Install VTA per 635 Standard
No
Install Frequent Haul sysetm
Finish

Assignment
Livestock Facility Siting Technical Expert Committee
September 18, 2014

Scope of Assignment and Desired Outcome

The committee is charged with recommending options for adjusting the existing siting standards and related rule provisions to ensure that the standards keep pace with changing agricultural practices and remain environmentally protective. The standards in the siting rule must be practical for producers to achieve and for local governments to implement, while continuing to meet the objectives of the siting law.

The scope of this committee is limited to technical issues related primarily to water quality and odors are the focal point. The committee will not evaluate broader policy areas such as social acceptance of large livestock farms, animal husbandry practices, or other related issues. Specific issues, such as manure irrigation, may not be covered in detail by the committee since a UW-Extension workgroup is currently evaluating research in that area. However, the committee may make a recommendation following the release of the workgroup's report.

Before each committee meeting, members will be provided questions to answer for that meeting. While assignments are tailored to be completed during a scheduled meeting, the committee can carry over an assignment into its next meeting. Notes will be prepared by DATCP staff reflecting the committee discussions. Future assignments will be organized by the following topics: 1) engineering, 2) nutrient management, 3) odor and setbacks. A separate document entitled *Committee Structure and Logistics* describes the process members will use to develop recommendations.

Your assignment for the first meeting will be to address the following questions:

Incorporation of NR 151 and ATCP 50 Standards

1. Both NR 151 and ATCP 50 adopted a prohibition against significant discharges of process wastewater.

   Background: NR 151.055 prohibits the significant discharge of process wastewater, and defines the criteria for determining if a discharge is significant. NR 243.03(53) defines "process wastewater" as any wastewater from the production area including water that comes into contact with any raw materials or animal byproducts including manure, feed, milk, eggs or bedding. ATCP 50.04 requires that all farm landowners implement conservation practices that achieve compliance with this and other performance standards. This prohibition against significant discharges applies to existing facilities as well as new or modified facilities. The current siting rule has no requirements related to process wastewater discharges other than those involving feed storage, see ATCP 51.20(3), and therefore is not consistent with the current nonpoint rules.

   What is the best way to accomplish incorporation of this standard into ATCP 51?

2. Consistent with NR 151 performance standards, ATCP 50 adopted NRCS 629 as the technical standard for the design, construction and maintenance of new and substantially altered feed storage runoff control systems.

   Background: ATCP 50.705 establishes the practice standard for the design, construction and maintenance of feed storage runoff control systems. NRCS technical guide waste treatment standard 629 (January, 2014) and NRCS technical guide vegetated treatment area standard 635 (September, 2012) are critical technical standards referenced in ATCP 50.705. The current siting rule, ATCP 51.20(3)(c), uses practice standards for new and substantially altered feed storage that are not consistent with the most current version of ATCP 50 and the latest NRCS technical standards. With other siting standards, such as nutrient management and odor, the siting rule applies different requirements for facilities under 500 animal units. For example, smaller facilities are not required to submit a nutrient management plan if they have an adequate land base as defined in Worksheet 3B.

Would the following proposed recommendation to modify ATCP 51 achieve consistency with the nonpoint rules, or is there other language that the committee should consider?

"ATCP 51 should require compliance with NRCS 629 (January 2014) for all new and substantially altered feed storage facilities. Feed storage requirements should apply to all of the commonly stored feeds, consistent with NRCS Standard 629, not just feed over 70 percent moisture (cannery, brewers and distillers byproduct feeds). Requirements for existing feed storage (Worksheet 5, Feed Storage, 2. (b)) should use 500 AU as the threshold for applying this requirement."

3. ATCP 50 adopted NRCS technical standard 629 as the technical standard for control of milking center wastewater.

   Background: ATCP 50.77 establishes the practice standard for the design, construction and maintenance of milking center waste control systems. NRCS technical guide waste treatment standard 629 (January, 2014) and NRCS technical guide vegetated treatment area standard 635 (September, 2012) are critical technical standards referenced in ATCP 50.77. The current siting rule does not address the control of milking center waste.

Would the following proposed recommendation to modify ATCP 51 achieve consistency with the nonpoint rules?

"ATCP 51 should require that all permitted farms manage milking center wastewater in accordance with NRCS technical guide waste treatment standard 629 (January 2014). Most dairy farms with manure storage may comply with this standard by directing this wastewater to storage."

4. Both NR 151 and ATCP 50 adopted a phosphorous management tool for croplands. What is the best way to accomplish incorporation of this component into ATCP 51?

   Background: NR 151.04 requires that cropland have an average Phosphorus Index (PI) of 6 over a rotation and annual PI not to exceed 12. ATCP 50.04(3)(a) provides that an ATCP 50 compliant nutrient management plan, if it includes an appropriate phosphorus index (PI) calculation value, may be used to demonstrate compliance with s. NR 151.04. NRCS technical guide nutrient management standard 590 (September, 2005) requires a phosphorus management strategy using either an approach based on the PI or soil test phosphorus. The PI strategy in the 590 standard requires average PI values for up to an 8-year rotation in each field to be 6 or lower. The current siting rule, ATCP 51.16(1) incorporates the requirements of the NRCS 590 standard, but does not include the full requirements in the nonpoint rules related to phosphorus management.

5. Both NR 151 and ATCP 50 adopted the following standards:

   a. A requirement that pastures be managed to control erosion and be covered by a nutrient management plan if they have certain stocking rates.
   b. A requirement that tillage not be conducted within a 5-20 foot setback between cropped fields and surface water.

   Background: The following DNR requirements apply to pastures as well as cropland: NR 151.02 requires that pastures be managed to achieve tolerable soil erosion rates, NR 151.04 requires that pastures have an average Phosphorus Index (PI) of 6 over a rotation and annual PI not to exceed 12. DNR rules [see NR 151.015(15m)] determine if farmland with animals is a pasture or a feedlot subject to separate runoff control requirements. ATCP 50.04(3)(b) defines which pastures must be included in a nutrient management plan for purposes of meeting NR 151 requirements. A nutrient management plan is required for pastures stocked at an average stocking rate of more than one animal unit per acre at all times during the grazing season. This fact sheet provides additional information, NRCS technical guide nutrient management standard 590 (September, 2005) provides the technical standards for developing NM plans for pastures. The current nutrient management standard in the siting rule, ATCP 51.16(1) does not include nutrients applied to pastures. NR 151.03 establishes a tillage setback requirement for cropland. ATCP 50.04(4) establishes the procedures for implementing the standard including the method for determining the setback distance and documentation requirements for setbacks greater than 5 feet. ATCP 50 does not specify NRCS or other technical standards for determining an appropriate setback, nor does it require cost-sharing for implementation. The current siting rule does not address a tillage setback.

Should these requirements be included as a standard that must be implemented as condition of a siting permit?

6. Regarding recommendations for questions No. 1-5, what, if any, adjustments should be made if full incorporation of NR 151 and ATCP 50 standards subjects livestock facilities permitted under ATCP 51 to requirements greater than those imposed on CAFOs under NR 243?

   Background: DNR will be available to provide guidance on the extent to which the NR 151 standards have been or will be made part of WPDES permit requirements for CAFOs. With this information, the committee could evaluate any recommendations to determine whether these standards should be enforced though permit requirements, rather than through NR 151 compliance efforts that are linked to cost-share requirements.

7. To be consistent with ATCP 50, should ATCP 51 references be updated to reflect the following NRCS technical standards?

   a. NRCS technical guide waste storage facility standard 313 (January, 2014).
   b. NRCS technical guide, closure of waste impoundments standard 360 (March, 2013).
   c. NRCS technical guide waste treatment standard 629 (January, 2014).
   d. NRCS technical guide waste transfer standard 634 (January, 2014).
   e. NRCS technical guide vegetated treatment area standard 635 (September, 2012).

   Background: The practice standards in Subchapter VIII of ATCP 50 have or will be updated to reflect the latest technical standards listed above. In addition to the most recent revision of ATCP 50 in 2014, which updated NRCS standards, DATCP is pursuing agency-wide technical rule changes that will result in further updates. Follow this link for more information on the technical rule change, https://health.wisconsin.gov/admrules/public/Rmo?nRmoId=16543

Assignment
Livestock Facility Siting Technical Expert Committee
October 15, 2014

Scope of Second Assignment

The committee's second assignment covers the topic of engineering. While assignments are tailored to be completed during a scheduled meeting, the committee may carry over an assignment into its next meeting. Notes will be prepared by DATCP staff reflecting the committee discussions. Future assignments will address the following topics: 1) nutrient management, and 2) odor and setbacks. Next year, the committee may be reconvened to provide advice regarding manure irrigation and nutrient management.

These are the specific questions related to engineering (all underlined blue text provides links to the referenced documentation):

Engineering

1. The siting rule references a model for predicting animal lot runoff, BARNY, that is not the most current model supported by NRCS, which now uses BERT.

   Background: ATCP 51.20(2) requires applicants for a siting permit to document that all existing animal lots have an average annual phosphorus runoff of 5 pounds if they are located near a waterway and 15 pounds if they are not. ATCP 51 requires that applicants use BARNY to predict phosphorus loadings. BARNY is not currently supported by NRCS, and has been replaced by BERT. In fact, the Note ATCP 51.20(2) is incorrect to the extent it states that an Excel spreadsheet version of BARNY may be obtained from the Wisconsin NRCS website (engineering directory).

   Should NRCS BERT replace BARNY as the model for predicting runoff under the siting rule? Does BERT include all the necessary functionality to model runoff for the siting rule? For example, does BERT need modification to confirm laminar (sheet) flow across the buffer? Whichever model is used, what documentation must an applicant provide to demonstrate compliance with the runoff limits (e.g. a printout of the model inputs and outputs)?

2. When an existing animal lot fails to meet the applicable runoff threshold in ATCP 51.20(2) it may be retained only if it, or an adjacent treatment area, is altered in some manner to control runoff. An applicant may be issued a permit based on a commitment in the application (e.g. submission of engineered design) to install practices to control the runoff.

   Background: The runoff control requirements in the rule depend on whether the alteration of an animal lot is minor or substantial. The definition of "substantially altered" in ATCP 50.01(40), for the purpose of animal lot as "an increase of more than 20% in the area or capacity of a livestock structure used to house, feed or confine livestock." Worksheet 5 (Appendix A, 390-35) defines "minor

alterations" as repairs or improvements that do not result in a substantially altered animal lot, and suggest that they may include conservation practices such as runoff diversions, contouring, and planting vegetation.

ATCP 51.20(2) requires that *substantially altered* animal lots must meet NRCS technical guide wastewater treatment strip standard 635. An applicant must submit an engineered design for any substantially altered animal lot, and this submission represents a commitment by the applicant to install the facility in accordance with the design and applicable technical standards. A local government may take action if the livestock operator fails to honor this commitment. See ATCP 51.34(4)(b)2.

With respect to minor alterations, neither the worksheet nor rule refers to NRCS or other technical standards for the installation of runoff diversions and other minor practices. Nor is there reference to how an applicant documents the commitments to make minor alterations. In the same vein, there is no mechanism in the application for livestock operators to document proposed management changes (e.g. more frequent cleaning of lots and reduced density) that can reduce runoff risks.

Regarding the commitments made in the application, ATCP 51.08(2) allows a permitted facility up to two years to start construction on the proposed modification. The current rule does not allow a local government to shorten the period for compliance. For example, in the case of an animal lot the rule does not require that the livestock facility control a discharge before a permit can be issued.

How can the rule be clarified or improved to support minor alterations to animal lots needed to meet the runoff thresholds in ATCP 51.20(2)? For example, can the rule better identify practices and related technical standards that constitute a minor alteration? Should applicants be required to submit designs or other document to reflect their commitment to install water quality practices related to a minor alteration? If there is a significant discharge, or other problem that presents a significant risk to water quality, should a local government be able to impose a condition to correct the problem within a time period of less than two years?

3. To continue to use existing manure storage structures and waste transfer systems, an applicant for a siting permit must document that these facilities were designed according to certain technical standards and do not present unacceptable risks of structural failure or leaking.

   Background: Worksheet 4 (Appendix A, 390-33) requires that a licensed engineer or engineering practitioner assess the condition of each waste storage facility that will continue in use without being substantially altered. In order to receive a siting permit each waste storage facility must meet certain standards as certified by the reviewing engineer or engineering practitioner. By definition [see ATCP 51.01(43)], a waste storage facility includes impoundments plus any

stationary equipment and piping used to load or unload them. The worksheet provides relatively clear standards for evaluating storage structures based on the age and design of the structure. The reviewer must also conduct a visual inspection for signs of substandard condition and repairs, leakage, or failure. The extent of the visual inspection depends on the age of the facility. The worksheet doesn't provide space to record information about the facility being evaluated, including its location and other descriptive information, its liner type, availability of designs and as-built documentation, the date of its construction, its dimensions and volume, date of its inspection, and level of manure in storage. For storage liner types that are more prone to damage (compacted clay, geomembrane, geosynthetic), there is no requirement to conduct an inspection when the structure is empty or as near to empty as practical (typically within two feet from the lowest point). For existing storage facilities, there is no requirement for safety fencing, as is the case for all new storage facilities. The worksheet offers no guidance on evaluating a waste transfer systems and no clear mechanism to document construction to meet technical standards and to be in sound operating condition (i.e. no risk of failure or leaking).

How can the worksheet's evaluation requirements be improved. For example, should the rule provide more concrete direction on how to conduct a visual inspection? Is there a way to make use of the evaluation processes used for NRCS Comprehensive Nutrient Management Plan (CNMP) and DNR Wisconsin Pollution Discharge Elimination System (WPDES) permits for animal feeding operations?

4. When adopted in 2006, ATCP 51 did not include emerging technologies that were not in common usage, such as sand settling lanes, and also did not set technical standards for newly developed technologies in advance of standards set by NRCS and other custodians.

   Background: The following technologies are relevant to ATCP 51, but neither the rule nor the accompanying worksheet include the most current definitions or technical standards: composting facilities, digesters, digester substrate storage, manure residual storage, solid separation and treatment of liquid waste, sand settling lanes, manure storage covers (bio−covers, geotextile impermeable), bio-filters, and air dams. Also, the rule references certain management practices, such as frequent cleaning of animal lots, which may not reflect the most current technical standards.

   Regarding the following, do you agree with the standards cited or do you have other recommended standards?

   - For composting facilities, reference NRCS Standard 317.
   - For anaerobic digesters, NRCS Standard 366.
   - For digester substrate storage, NRCS Standard 313 or DNR Industrial waste rules, such as NR 213, Wis. Admin. Code, based on types and amounts stored.
   - For manure residual storage, NRCS Standard 313.
   - For solid separation, NRCS Standard 632.

- For treatment of liquid waste, NRCS Standard 632.
- For sand settling lanes, NRCS Standard 632.
- For manure storage covers, NRCS Standard 367 (Does not include natural crust and bio-cover).

Are there other new technologies that are not adequately addressed in the rule or worksheets?

5. While all existing feed storage must be managed to avoid significant discharges, the rule does not impose affirmative requirements for permitted livestock operations except those limited number of facilities that store high moisture feed.

   Background: As part of a siting permit application, livestock operators with existing feed storage systems are not required to evaluate the condition of a storage facility in terms of the likelihood of failure, runoff events, or leakage.

   ATCP 51.20(3) requires that existing paved facilities must control runoff by diverting clean water and collecting leachate from larger-sized pads only if the facilities store feed with 70% or more moisture content (cannery, brewers and distillers byproduct feeds). When feed exceeds a moisture content level of 70%, or when rainfall infiltrates stored feed, it generates leachate with acids and sugars that are corrosive to exposed concrete and metal surfaces and can kill vegetation. Of the 121 permitted facilities in the state, nearly all store feed but only 10 are subject to the requirements for storage of high moisture feed.

   Other than the requirement in ATCP 51.20(3), the current rule does not impose structural and management practices that might control discharges and runoff from feed storage. For example, a landowner is not required to divert clean water or cover storage to limit water infiltration. When it comes to structural practices, costs for retrofitting existing systems may be high, particularly if subsurface collection systems must be installed. On the management side treatment areas may be maintained to assure proper flow and infiltration.

Should existing feed storage structures be required to meet certain minimum conditions to reduce runoff risks regardless of the moisture content of the feed being stored? What, if any, standards should be used to evaluate the water quality risks posed by existing storage at the time of a permit application? What, if any, structural and management requirements should apply to existing feed storage after the livestock facility is permitted? How do the following factors affect your answers to these questions: type of structure, the volume of feed stored, the type of feed stored?

6. ATCP 51 provides no guidance for conducting monitoring to determine whether engineered practices are properly operated and maintained.

   Background: Under the section related to local permit approval, ATCP 51.34(4) makes clear that the siting rule does not limit or define a local government's authority to monitor permit compliance. The silence regarding compliance monitoring is not a reflection of the importance of this issue. Monitoring compliance is important to ensure sound management of practices and to assist in evaluation of the functional condition of a practice. Without direct guidance local governments are left on their own to determine which conditions to monitor, the type of monitoring to perform, the frequency of monitoring and the method for documenting their efforts.

   Do you agree that the following recommendations are technically sound or would you make other recommendations?

   Checklists are an effective tool to ensure accuracy and consistency in monitoring livestock facilities for compliance. Checklists need to be specific to either the producer, if self-certifying, or regulatory authority, if for a compliance review. Checklists should be practice specific and incorporate operation and maintenance (O&M) requirements in NRCS technical standards. For example, animal lots should follow the O&M requirements in NRCS standard 635. Consideration should be given to a combination of self-certification with periodic review by an administering authority. Duplication should be avoided and existing compliance assurance measures (CAFOs) should suffice for most compliance objectives. DATCP should provide guidance and training to local authorities on checklist development and usage, and should work with these authorities to collect accurate information concerning the implementation of the siting law and the performance of permitted farms, including responding to changes in farming operations and documentation of monitoring results.

Assignment- Nutrient Management
Livestock Facility Siting Technical Expert Committee

Scope of Third Assignment

The committee's third assignment focuses on nutrient management (NM). Nutrient management planning in Wisconsin is described by the Natural Resources Conservation Service's (NRCS) 590 Nutrient Management Standard which includes managing the amount (rate), source, placement (method of application) and timing of plant nutrients and soil amendments. The issues and questions listed below originated through DATCP listening sessions conducted with various interested parties and stakeholders, and input from Livestock Facility Siting Review Board (LFSRB), as well as from issues identified by Livestock Siting staff through implementation of the law over the last four years. For ease of reference, the text of ATCP 51 related to nutrient management is included at the end of this document. The following are the specific nutrient management issues and questions for you to consider:

1. Documentation that may be requested by Local Governments

Non-WPDES Permit Holders (Operations with <1,000 Animal Units (AUs))

ATCP 51.16(1)2.(b) gives local governments the ability to request additional documentation to substantiate the applicant's responses to questions on the NM checklist, which demonstrates compliance with the Siting Law's nutrient management requirements.

Some political subdivisions may focus their resources on conducting a more thorough review of nutrient management plans for siting permit applicants to ensure that the land base exists and spreading restrictions are acknowledged. DATCP reviews numerous NM plans annually. The fastest, most consistent method for plan review is through analyzing the applicant's SnapPlus database and NRCS 590 NM restriction maps, which include soil types and associated spreading restrictions, and reviewing the NMP reports to determine compliance with the NRCS 590 Standard.

WPDES Permit Holders (Operations with >1,000 AUs)

While applicants with less than 1,000 AUs must submit the Appendix A, Worksheet 3 (Waste and Nutrient Management) information, and more if requested, as part of their permit application, WPDES permitted operations are exempt from the requirements of ATCP 51.16 (a), including demonstrating compliance with the NRCS 590 NM Standard and submitting Appendix A, if they submit their current WPDES permit covering an equal or greater number of AUs to the number for which they are seeking local approval under their siting permit. (ATCP 51.16(4)).

Having accurate information about the number of AUs approved under the WPDES permit and resulting manure generated is very important to local governments when approving the application because the farm must own or rent enough land to distribute all manure produced to comply with NRCS 590 and the nutrient management requirements in ATCP 51.16. The WPDES application materials contain information regarding AUs, however, the WPDES permit itself does not include the AU number approved in the WPDES permit, nor is there information to assure the local government that the applicant's operation is complying with all applicable nutrient management requirements. For

instance, a 3-year-old WPDES permit may not reflect current operating conditions and therefore not match the application condition or AU level requested in the Siting application.

Under the current exemption, it is unclear if local governments are allowed to request additional information to substantiate the applicant's compliance with their WPDES permit, AUs permitted, or NRCS 590 standard requirements.

QUESTION: Should local governments be given the ability to request additional documentation from WPDES permit applicants?

What information and documentation would be helpful for local governments to request to substantiate compliance? For example: items included in the NRCS 590 NM plan and Checklist, nutrient application restriction maps, and/or NM database, specific WPDES Permit Components?

2. Nutrient Management Planning for the Application's Maximum Animal Units

ATCP 51 currently requires that applicants prepare a NM plan in compliance with the NRCS 590 Standard and the NM Checklist components. Determining compliance with many aspects of the NRCS 590 Standard, especially the phosphorus requirements, includes assessing all nutrient applications over the course of a rotation, not on an annual basis.

The Livestock Facility Siting Review Board (LFSRB), in the case of Van Dyke v. Racine County, was asked to determine if a local government could conditionally approve a nutrient management plan for fewer than the maximum number of animal units requested by the applicant. The LFSRB determined that applicants must submit NM plans which "reflect that the amount of land available to spread the manure volumes calculated to be generated by the maximum number of animal units".

However, some local governments and landowners would contend that requiring NMPs to include the maximum AUs and manure volumes requires an operation to obtain additional owned or rented land base sometimes years in advance of when their operation would need that additional acreage. Using conditional approvals has allowed some jurisdictions to monitor an operation's growth annually and assess NM requirements and adequate land base determinations annually as well.

Contrastingly, some local governments may or may not have the resources to monitor and regulate AU increases over time to ensure compliance, making it important for the initial NM plan or land base calculation to account for all manure generated by the maximum number of AUs included in the permit. Planning to the maximum AUs allows all jurisdictions to have a level of confidence that the applicant has the planned ahead to obtain the spreadable land they need.

Lastly, the current rule provides for permit modifications (ATCP 51.34(4)(b)2.), which enables livestock operators to have their animal unit additions quickly approved by usually revising two worksheets (animal units, waste and nutrient management), rather submitting a full-blown permit application. Taking this approach, an operator submits his or her original permit application for the number of animal units anticipated in the "near future" and a NM plan to match. If the AU number is less than the AU number the operation is designed to hold, then before adding animal units, the operator may request a permit modification and submit the needed worksheet revisions to accomplish

this. Because permit modifications are only available for "reasonable changes," expansions over a set amount or beyond the initial application's maximum AU level would require a new application and related documentation. So, for example, a person could not double the size of a permitted operation from 500 to 1,000 AUs through a permit modification, and thus avoid the scrutiny and steps related to the full permitting process.

QUESTION: Should the rule requirements for maximum AU planning remain as is, or should other options be explored? Is the permit modification process feasible, implementable, and reliable enough to be used as an option?

3. Evidence of Rented Land Available for Spreading

The note in ATCP 51.16(2) indicates a complete application must include a waste and nutrient management worksheet (Appendix A, Worksheet 3) that identifies the acreage currently available for land spreading and provides a land spreading map.

The rule does not require that the NM plan or Checklist identify owned versus rented acres. It has been recommended that DATCP establish requirements for showing ownership of, or having rental agreements in place, for sufficient acres to manage the maximum number of animal units anticipated. Others contend that rental agreements that extend beyond one or two crop years can be difficult to obtain given the constantly fluctuating commodity prices and land values and requiring long-term, signed contracts to demonstrate land control could prove extremely difficult.

DNR's WPDES program requires CAFOs to submit field information describing the rental length, landowner name, and whether the land is shared. The WPDES program requires this information be updated through annual WPDES NMP updates, but there are difficulties in tracking whether rental agreements are submitted and updated. In cases of limited acreage available for land application, DNR has the authority to ask for signed contracts between the farm and landowner (NR 243.14(1)(b)). DNR is requesting such contracts on a more frequent basis. If a permitted facility only enters into a manure spreading agreement, it has less control over the field than if it was rented (i.e. the permitted facility doesn't determine what crops are grown, what nutrients are applied, what tillage occurs, etc.) which can impact spreading rates and availability of the spreadable acres.

QUESTION: When determining permit approval related to land base access for spreading, would it help local governments if applications identified the acres owned versus rented? If so, what is the best way to accomplish this?

4. NRCS 590 Nutrient Management Standard Exclusions and Local Restrictions

Under the siting law, a local siting ordinance must spell out every standard that a livestock operator must meet to obtain a permit. Under this framework, a local government does not have discretion to impose winter spreading restrictions that are not spelled out in advance in a local ordinance. Accordingly, the siting rule excludes local governments from implementing section V.A.2.b.(2) of the NRCS 590 standard, which authorizes the imposition of site-specific manure application restrictions

involving “locally identified areas delineated in a conservation plan as contributing nutrients to direct conduits to groundwater or surface water as a result of runoff.”

For example, the siting rule could establish winter spreading standards beyond those in the NRCS 590 Standard for specific high-risk conditions and these standards could then be incorporated into local ordinances. From a technical standpoint, it may be possible to identify what constitutes high risk conditions and the resulting risk-reducing practices required for farms exhibiting those high risk conditions, such as setbacks from certain features.

The WI NRCS 590 NM Standard (2005) is currently under revision by a team of technical experts to determine what requirements and parameters need to be adjusted to conform to the updated requirements in the National NRCS 590 NM Standard (2012). The revised WI NRCS 590 NM Standard is likely to include additional restrictions related to nitrogen application and winter spreading of manure and will be available for public review and comment in early 2015.

QUESTION: Should this committee identify the high risk conditions and risk-reducing practices that might be included in a siting rule standard related to winter spreading restrictions?

Should the Committee wait until the NRCS 590 NM Standard is revised before making recommendations since additional winter spreading restrictions are likely to be added as statewide requirement?

ATCP 51.16. Nutrient management. (1) NUTRIENT MANAGEMENT STANDARD.

(a) Except as provided in par. (c):

1. Land applications of waste from a livestock facility approved under this chapter shall comply with NRCS nutrient management technical standard 590 (September, 2005), except for sections V.A.2.b(2), V.D, V.E and VI.

Note: NRCS nutrient management technical standard 590 (September, 2005) is reprinted in Appendix B. The following sections of the reprinted standard do not apply for purposes of this chapter: V.A.2.b(2), related to additional requirements imposed by local conservation plans. V.D, related to additional criteria to minimize N and particulate air emissions. V.E, related to additional criteria to protect the physical, chemical and biological condition of the soil. VI, related to discretionary considerations.

2. A nutrient management checklist, shown in Appendix A, worksheet 3, part C, shall accompany an application for local approval. A qualified nutrient management planner, other than the livestock operator, shall answer each checklist question. The planner shall have reasonable documentation to substantiate each answer, but neither the planner nor the operator is required to submit that documentation with the checklist.

Note: A livestock operator is not required to submit a complete nutrient management plan with an application for local approval. Both the operator and the qualified nutrient management planner must sign the nutrient management checklist. See Appendix A, worksheet 3, part C.

(b) A political subdivision may ask a nutrient management planner to submit the documentation that the planner relied upon to substantiate the planner's answer to one or more questions on the nutrient management checklist under par. (a) 2. The political subdivision may deny local approval if the planner's documentation does not reasonably substantiate the answer.

(c) Paragraph (a) does not apply to a livestock facility with fewer than 500 animal units unless the operator's ratio of acres to animal units, calculated according to Appendix A, worksheet 3, part B, is less than 1.5 for dairy and beef cattle, 1.0 for swine, 2.0 for sheep and goats, 2.5 for chickens and ducks, and 5.5 for turkeys.

Note: A waste and nutrient management worksheet (Appendix A, worksheet 3) must accompany every application for local approval. Among other things, the worksheet shows the operator's ratio of acres to animal units under par. (c). Paragraph (c) is an exemption, not a requirement, for livestock facilities. If a livestock facility qualifies for exemption under par. (c), the operator is not required to submit a nutrient management checklist under par. (a). The ratios stated in par. (c) are based on the phosphorus content of manure from the respective livestock species.

(2) PRESUMPTION. For purposes of local approval, an operator is presumed to comply with sub. (1) if the application for local approval complies with s. ATCP 51.30.

Note: Under s. ATCP 51.30, an application must be complete, credible and internally consistent. The application must include, among other things, a waste and nutrient management worksheet (Appendix A, worksheet 3). The completed worksheet must include all of the following:

- The types and amounts of manure and other organic waste that the facility will generate when fully populated.
- The types and amounts of waste to be stored, the waste storage facilities and methods to be used, the duration of waste storage, and waste storage capacity.
- The final disposition of waste by landspreading or other means.
- The acreage currently available for landspreading.
- A map showing where waste will be applied to land.
- A nutrient management checklist if required under sub. (1). Local approval is conditioned upon compliance in fact (see s. ATCP 51.34 (4)). The presumption in sub. (2) may be rebutted by clear and convincing evidence in the record (see ss. ATCP 51.34 and 51.36).

(3) NUTRIENT MANAGEMENT UPDATES. An operator may update nutrient management plans and practices as necessary, consistent with sub. (1) (a) 1.

Note: This subsection does not require an operator to file updates with a political subdivision, but neither does it limit local authority to request updates or monitor compliance with sub. (1) (a) 1. See s. ATCP 51.34 (4).

(4) EXEMPTION. This section does not apply if all of the following apply:

(a) The operator holds a WPDES permit for the same proposed livestock facility, and that permit is based on housing for a number of animal units that is equal to or greater than the number for which the operator seeks local approval.

(b) The operator submits a copy of the WPDES permit with the operator's application for local approval. History: CR 05−014: cr. Register April 2006 No. 604, eff. 5−1−06.

ATCP 51.34. Granting or denying an application.

(4) TERMS OF APPROVAL. An approval under sub. (1) is conditioned on the operator's compliance with subch. II and representations made in the application for approval. This chapter does not limit a political subdivision's authority to do any of the following:

(a) Monitor compliance.

(b) Withdraw an approval, or seek other redress provided by law, if any of the following apply:

1. The operator materially misrepresented relevant information in the application for local approval.

2. The operator, without authorization from the political subdivision, fails to honor relevant commitments made in the application for local approval. A political subdivision may not withhold authorization, under this subdivision, for reasonable changes that maintain compliance with the standards in subch. II.

3. The livestock facility fails to comply with applicable standards in subch. II.

Note: A political subdivision should exercise sound judgment in deciding whether to take compliance action under sub. (4) (b). The political subdivision may consider extenuating circumstances, such as adverse weather conditions, that may affect an operator's ability to comply. A political subdivision may also consider the nature and seriousness of the violation, whether the violation was intentional or accidental, the operator's compliance history, consistency of enforcement, and whether the problem can be resolved without formal enforcement. Before taking compliance action, a political subdivision should give the operator notice and a reasonable opportunity to demonstrate compliance.

Assignment
Livestock Facility Siting Technical Expert Committee
December 2014

Scope of Fourth Assignment

The committee's fourth assignment covers the topic of odor generation and odor control practices as well as setbacks. All three are utilized in determining an odor score.

The questions in this assignment will likely take more than one meeting to complete. The first meeting will include a review of the odor model and standard and a discussion of odor generation and odor control practices, the numbers associated with them and the scoring system. The committee will determine whether or not changes need to be made to either odor generation numbers or the odor control practice credits. There will also be a discussion on property line and road right of way setback distances for structures (manure storage, animal lots, feed storage and housing.)

Notes will be prepared by DATCP staff reflecting the committee discussions and recommendations. As previously discussed, the committee will wait to address issues related to the odor from land applied manure, pending the completion of the work of Manure Irrigation Workgroup.

Odor

1. Worksheet 2 (Appendix A, Chart 2, 390-25) (a copy of which is also attached to this assignment) calculates the odor generated by livestock structures using odor generation numbers developed in accordance with the best available science.

   Background: ATCP 51.14 requires that certain livestock facilities have a passing odor score calculated according to Worksheet 2. The odor score is the product of a model that predicts odor from livestock structures in the proposed facility. Chart 2 assigns an odor generation factor, expressed as a number, for different types of housing, waste storage and animal lots commonly used in Wisconsin livestock facilities. Applicants multiply the odor generation factor for each livestock structure by its area (measured in square feet) to predict the untreated odor that will be generated. The odor generation factors were established in 2004 based on the best available science. Subsequent research and program implementation has shed new light on the method and numbers used to calculate odor. The current Chart 2 does not include odor from certain sources such as housing for sheep and goats or sand separation channels, or sources of odor not well documented at the time the chart was developed.

What is your recommendation with respect to odor generation numbers? Should the numbers stay the same or should they be raised or lowered?

With respect to dairy housing types, should it be clarified whether this housing include natural and power ventilated barns? With respect to poultry, there is currently only one category. Should two categories be created for layers with different odor generation

numbers? For example, currently layers and litter in the same building have an odor generation number of 20. There is no category for layers in housing equipped with a belt system where litter is stored separately from the birds. Currently, broilers in housing with litter have an odor generation number of 1.

With respect to waste storage facilities, should the method for predicting odors be switched from storage duration to storage surface area? Currently short term storage has an odor generation number of 28 and long term storage (6 months or longer) has a generation number of 13. If so, the current odor generation number of 28 could be used for structures less than one acre in size and the current odor generation of 13 for structures larger than 1 acre, when measured at the maximum operating level. Are the generation numbers correct? Is there a need to combine storage duration and surface area to properly predict odor?

Currently there is no category for sand and solid separation systems. First, should a category be established? If so, is it appropriate to distinguish between parts of the system used for separation and those used for storage of separated materials? It has been suggested that an odor generation number of 40 could be assigned to treatment areas (e.g. a lane where sand is separated or a building housing mechanical separation equipment) and a generation number of 2 for the sand/solids storage area. For systems enclosed by buildings, the use of appropriate odor control practices, e.g. bio-filters could be used.

Do you have additional recommendations regarding any source listed in Chart 2 or sources that should be listed in Chart 2?

Odor Source	*Chart 2 Number*	*Recommendation*
Dairy free stall (slatted floor including floor and pit below)	6	
Dairy free stall (scrape)	4	
Dairy free stall (Bedded pack)	2	
Dairy free stall (Alley flush to storage)	10	
Poultry Housing, layers	20	
Waste Storage Facilities (Short term-less than 6 months)	28	
Waste Storage Facilities (Long term-6 months or more)	13	
Sand and solids separation systems - sand separation lanes (a.k.a. sand channels) and mechanical separation systems (e.g. screen, friction dryers, and screw presses)	Not listed	

2. Worksheet 2 (Appendix A, Chart 3, 390-26) (a copy is attached) identifies odor control practices that reduce odor from livestock structures, and assigns an odor control percentage to each of the practices consistent with the best available science.

   Background: In calculating their odor score, livestock operators can take credit for practices that reduce odor. The practices listed in Chart 3 apply to specific sources, and may not be combined with other practices in the same category. For example, bottom fill and aeration cannot be combined to reduce the odor score for manure storage. In order to claim a credit for a practice, the practice must meet the specifications described in Worksheet 3. To reflect the odor reduction from a practice, the applicant multiples the credit, expressed as a percentage, by the amount of odor generated by the related source. The odor control numbers were established in 2004 based on the best available science. Subsequent research and program implementation has provided new information on control methods and the factors assigned to odor control practices. The current rule includes a process for DATCP to approve innovative control practices not listed in Chart 3. DATCP has used this authority on one occasion to recognize a new odor control innovation for layer operations.

   In 2010, DNR developed a list of control practices for air emissions including a rating of the effectiveness of the practice in controlling odor.

In the area of housing there are several odor control practices that livestock operators can implement. Do any of the reduction factors/multipliers need to be adjusted for diet manipulation, biofilters, fresh water flush, treated water flush, immediate return flush, air dams, or windbreaks. Also, should a new category for wet scrubber be added?

With respect to waste storage should the reduction factor/multiplier be adjusted for anaerobic digestion, chemical or biological additives, compost, solid separation and reduction, aeration, geotextile covering or natural crust? Should a category for poultry layer housing utilizing a dryer belt system be added?

Do you have additional recommendations regarding any source listed in Chart 3, or sources that should be listed in Chart 3?

Odor Source and Control Practice	*Chart 3 Reduction Factor*	*Cannot combine with*	*Recommendation*
Housing: Diet manipulation (A1)	20% (0.8 multiplier)	None	
Housing: Bio-filter (B1)	90% (0.1 multiplier)	B2, B3, B4, B5	
Housing: Wet scrubber	Not included		
Housing: Fresh Water Flush (B3)	60% (0.6 multiplier)	B1, B2, B4, B5	
Housing: Treated Water Flush (B4)	30% (0.7 multiplier)	B1, B2, B3, B5	
Housing - Immediate return flush	Not included		
Housing: Air Dam (B5)	20% (0.8 multiplier)	B2, B3, B4, B5	
Housing: Windbreak (C1)	10% (0.9 multiplier)	None	
Waste Storage: Anaerobic digestion (E1)	80% (0.2 multiplier)	E2, E3, E4, E5	
Waste Storage: Chemical or biological additives (E2)	20% (0.8 multiplier)	E1, E3, E4, E5	
Waste Storage: Compost (E3)	80% (0.2 multiplier)	E1, E2, E4, E5	
Waste Storage: Solids separation and reduction (E4)	40% (0.6 multiplier)	E1, E2, E3, E5	
Waste Storage: Aeration (F1)	70% (0.3 multiplier)	F2, F3, F4, F5, F6	
Waste Storage: Geotextile cover (F3)	50% (0.5 multiplier)	F1, F2, F4, F5, F6	
Waste Storage: Natural crust (F5)	70% (0.3 multiplier)	F1, F2, F3, F4, F6	

3. ATCP 51.14(2)(c) and Worksheet 2 (Appendix A, 90-22) exempts operators from the odor standard if their proposed livestock facilities are 1) a new facility with fewer than 500 animal units; 2) expansions less than 1,000 animal units, or 3) have livestock structures at least 2,500 feet from the nearest affected neighbor. "Affected neighbors" (ATCP 51.01 (2)) are residences or "high-use buildings" (ATCP 51.01 (16)) other than those owned by the livestock operator or by persons who agree to a shorter setback.

   Background: The exemption for new facilities with fewer than 500 animal units and expansions with less than 1,000 animal units is based on the assumption that these facilities are not large generators of odors. Further, these operations oftentimes have less flexibility and financial resources to move livestock structures to increase setback distances or implement other odor control practices than those which are more readily available to larger livestock operations. The 2,500 foot exemption is based on earlier decisions that odors beyond 2,500 feet are minimal, and the protection of nearest affected neighbors is not necessary.

   Some have indicated that the exemptions may discourage expanding operations from planning for their future and making investments to address regulatory requirements that come with expansions.

   Currently 39 of the 121 permitted facilities are exempt from the odor standard; 35 of which are expansions under 1,000 AUs and one of which is more than 2,500 feet from the nearest neighbor.

Is it appropriate from a technical standpoint to continue these exemptions from the odor standard?

4. Livestock operators who complete required plans related to incident response and employee training and an optional odor management plan (Appendix A, Application for Local Approval, Nos. 12 and 13, p. 390-18) may claim additional points toward a passing odor score.

   Background: All applicants for a siting permit are required to submit an environmental incident response plan that outlines procedures to respond to incidents including overflows and spills from waste storage facilities, catastrophic system failures, manure spills during transport and application, movement of manure during or after application, catastrophic mortality disposal emergency, and odor complaints. The plan must include contact information for the person at the operation responsible for handling concerns and mobilizing first responders. A model plan is available from DATCP.

   Permit applicants must also submit an employee training plan covering training on nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response. The plan must provide details about training related to the employees to be trained, the form and frequency of training, and training presenters. Operators must hold at

least one training per year, and have a system for recording employee attendance. A model plan is available from DATCP.

A permit applicant may prepare and submit an optional odor management plan, which must address activities to reduce community conflict; practices used to reduce dust; practices used to reduce odor from feed storage leachate; practices used to conserve water; and practices used to reduce odor from dead animals. There is no model for preparation of these plans.

In completing Step 3 of Worksheet 2 (Appendix A, 390-22), all applicants may take an 80 point credit for completing required incident response and employee training plans. Applicants may take an additional 20 point credit if they complete an optional odor management plan. All applicants who were required to complete the odor worksheet claimed the 80 points, while 18 of 121 applicants also claimed the 20 points for the optional odor management plan.

Is it appropriate from a technical standpoint to award 80 points for the mandatory plans and 20 points for the optional plan? Can the plans be improved or strengthened to better control odor? If not, should the odor scoring system be adjusted and still include a requirement to have a mandatory plan to address odor practices?

5. ATCP 51 provides no guidance to local governments for monitoring livestock operations to determine whether odor control practices are properly implemented and maintained.

   Background: As noted in an engineering question about monitoring practices, the rule does not provide guidance regarding responsible and appropriate monitoring procedures.

Should a checklist be developed similar to the one used for nutrient management that producers and local governments can use to verify that a facility has installed, and continues to properly operate, odor control practices and management activities required under a siting permit?

In addition to a checklist, is it appropriate to allow for self-reporting by farm operators, requests by local governments for documentation, and on-site inspections of permitted facilities? Should DATCP provide guidance and training to local authorities on compliance monitoring?

Do you have other recommendations?

Setbacks

1. ATCP 51.12 establishes the maximum setback distance that local governments may impose on permitted livestock facilities through a local siting ordinance. They in are:

- No more than 350 feet for manure storage structures from the property line and road right of ways for all sized livestock facilities.
- No more than 100 feet to 200 feet, depending on the size of the livestock facility, for other structures including animal housing, animal lots, milking parlors and feed storage from property line and road right of ways,

  Background: Separation distance is generally regarded as the best method to reduce the impacts on neighboring property owners and land uses. Distance dilutes odors through mixing with atmospheric air. Wind speed, direction, atmospheric conditions, surrounding land use and topography all affect odor impacts.

  The maximum setbacks were established as a compromise to protect the interests of bordering property owners and neighboring land uses while allowing for the expansion of livestock operations.

  The odor standard, which accounts for separation distance between structures and the nearest neighbor (as well as odor control practices), generally determines whether or not and where manure storage, housing, feed storage or animal lots can be sited on a livestock operation. Since the odor standard relies on several variables to predict odor, in some instances it has not proven to be as reliable as distance.

Do current road and property line setbacks provide adequate protection to residences, high use buildings, parks, seasonal residences for hunting, and public spaces while still allowing for new and expanded livestock operations?

Could structure-to-structure setbacks more effectively protect certain land uses from the impacts of livestock facilities, or does the odor standard adequately address potential odor impacts while still providing options for producers?

Worksheet 2 (continued)

Chart 2: Odor Generation Numbers

Animal Housing Area Type	Housing/ Management Type Code	Manure Management Method	Odor Generation Number	Exempt Buildings Maximum Size (ft^2) *(May exclude up to 4)*
Dairy Stanchion	DSDC	Daily to weekly cleaning	2	7500
Dairy Free Stall and Beef & Dairy Heifers (Forage Ration)	DBSS	Slatted floor (includes floor and pit below)	6	2500
	DBSC	Scrape	4	3500
	DBAF	Alley flush to storage	10	1500
	DBBP	Bedded pack	2	7500
Beef Finishing (High Energy Ration)	BFSF	Slatted floor (includes floor and pit below)	12	1000
	BFSC	Scrape	8	2000
	BFBP	Bedded pack	4	3500
Pork Gestation/ Farrow/Nursery	PGSF	Slatted floor (includes floor and pit below)	46	N/A
	PGPP	Pull plug to storage	22	N/A
Pork Finishing	PFSF	Slatted floor (includes floor and pit below)	34	N/A
	PFPP	Pull plug to storage	20	N/A
	PFSS	Scrape systems to storage	11	1500
	PFDB	Deep bedded	4	3500
Poultry	PBLT	Broiler (litter)	1	15000
	PDLQ	Ducks (liquid)	20	N/A
	PLAY	Layers	20	N/A
	PTDL	Turkey and Ducks (litter)	2	7500

Type Codes	*Waste Storage Facility* Types *Note: Storage under slatted floor is addressed under animal housing.*	Odor Generation Number
WSSS	Solid (stack)	2
WSLT	Long term (6 months or longer as determined in Column E of worksheet 3)	13
WSST	Short term (less than 6 months as determined in Column E of worksheet 3)	28

Animal Lot Codes	*Animal Lot* Types		Odor Generation Number
ALPV	**Paved**		4
UPDB	**Unpaved**	Dairy/Beef/Sheep/Goats	6
UPSW		Swine/Poultry	11

Worksheet 2 (continued)

Chart 3: Odor Control Practices

Category	Practice Code	Practice Name (Practices must meet specifications on pages A−11 to A−13)	Multiplier*
		Animal Housing Area	
A	A1	Diet manipulation	0.8
B (Choose only 1)	B1	Bio−filter	0.1
	B2	Vegetable oil sprinkling (for swine only)	0.4
	B3	Fresh water flush	0.4
	B4	Treated water flush	0.7
	B5	Air Dam (for swine only)	0.9
C	C1	Windbreak (includes man−made berms)	0.9
D	D1	Frequent cleaning of animal housing area	0.9
		Waste Storage Facilities	
E (Choose only 1)	E1	Anaerobic digestion	0.2
	E2	Chemical or biological additives	0.8
	E3	Compost	0.2
	E4	Solids Separation and Reduction	0.6
	E5	Water Treatment	0.1
F (Choose only 1)	F1	Aeration	0.3
	F2	Bio−cover	0.4
	F3	Geotextile cover	0.5
	F4	Impermeable cover	0.1
	F5	Natural crust	0.3
	F6	Bottom fill	0.9
G	G1	Windbreak (includes man−made berms)	0.9
		Animal Lots	
H (Choose only 1)	H1	Frequent cleaning of *animal lot*	0.4
	H2	Drag *animal lot*	0.5
I	I1	*Animal lot* moisture control	0.8
J	J1	Windbreak (includes man−made berms)	0.9

*Smaller multiplier = more odor controlled (e.g. a multiplier of 0.4 represents a 60% control).

Innovative Odor Control Practices (all odor sources):
You may take credit for odor control practices not listed in Chart 3 if *DATCP* pre−approves a multiplier for each of those practices. Follow the procedure in *ATCP 51.14(5)(c)* to obtain *DATCP* approval. If you obtain *DATCP* approval, you may include the approved practice and multiplier in odor worksheet calculations in the same manner as for odor control practices listed in Chart 3 (attach *DATCP* approval to your application).

Odor Table

Table 1	Existing ATCP 51.12 Setbacks (shaded)		With respect to each of the neighboring land uses, do existing setbacks adequately mitigate the impacts of odor? If "no," insert a suggested separation distance that would be more effective.			
Structure, or practice	Property line (feet)	Road (feet)	Single residential structure	High-use building (e.g. school) or cluster of 6 residences	Public areas (e.g. park)	Municipal boundary or non-ag zoned area
1.Animal housing*	100 ft for <1000 AU 200 ft for >1000AU	100 ft for <1000 AU 150 ft for >1000AU				
a. <1,000 AU						
b. 1000 – 5000 AU						
c. >5,000 AU						
2. Animal Lot*	100 ft for <1000 AU 200 ft for >1000AU	100 ft for <1000 AU 150 ft for >1000AU				
a. < 1/2 acre						
b. > 1/2 acre						
3. Milking parlor**	100 ft for <1000 AU 200 ft for >1000AU	100 ft for <1000 AU 150 ft for >1000AU				
4. Feed storage**	100 ft for <1000 AU 200 ft for >1000AU	100 ft for <1000 AU 150 ft for >1000AU				
a. < 2 acres						
b. > 2 acres						
5. Manure Storage*	350 ft	350 ft				
a. < 4 acres						
b. > 4 acres						
c. Composting pad						
* rule has provisions for odor control practices for these structures						