

Midwest Environmental ADVOCATES

pro bono publico

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BY ELECTRONIC MAIL

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Wisconsin Department of Natural Resources
101 S. Webster Street
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**Re: Comments on the Draft Environmental Impact Statement (EIS) and Draft
WPDES Permit for Rosendale Dairy LLC**

Dear Mr. Pardee and Ms. Spaeth-Werner,

Thank you for the opportunity to submit written comments on the Draft Environmental Impact Statement (“Draft EIS”) and Draft Wisconsin Pollutant Discharge Elimination System (WPDES) Permit (“Draft Permit”) for Rosendale Dairy. Garvey, McNeil & McGillivray, S.C. and Midwest Environmental Advocates, Inc. submit these comments on our own behalf and on behalf of Mr. and Mrs. Severin Swanson, of Pickett, WI, and the unincorporated association of citizens known as People Empowered Protect the Land (PEPL) of Rosendale.

Midwest Environmental Advocates (“MEA”) is Wisconsin’s first and only nonprofit, public interest environmental law center. MEA provides legal and technical assistance to community groups and nonprofit organizations working for clean air, clean water, and clean government in the Western Great Lakes region.

Garvey McNeil & McGillivray, S.C., is a Madison, Wisconsin- based public interest law firm. The firm represent clients in federal and state court litigation, and before government agencies, on a wide range of public interest issues, including: Environment and Safe Energy; Open Government Laws (FOIA); Constitutional Rights and Civil Liberties; Political Rights; and Employee Rights.

Because certain issues relating to the water quality impacts of the proposed dairy are so intertwined, segregation of our comments between the two parallel Department processes is impracticable; therefore we intend this letter to serve as joint comments for both the Draft EIS

and the Draft Permit. To the extent possible we have identified those comments which are relevant primarily to one document or the other.

We also hereby incorporate as our own the comments submitted under separate cover, but on our behalf, by Mr. Alexander J. Sagady.

I. Introduction

This is believed to be the first time the Wisconsin Department of Natural Resources (“Department” or “DNR”) has prepared an EIS for a concentrated animal feeding operation (“CAFO”). The fact that this is the first such EIS, while surprising to us, should not suggest to the industrial livestock industry a radical change in Department policy, for the Rosendale Dairy, if permitted to operate at intended levels at Phase II, would be the state’s largest industrial dairy. As such, and for the additional reasons explained in this letter, Rosendale Dairy poses a significant risk of contaminating the region’s air and water quality; threatening the public health; and causing widespread and permanent changes to the region’s land use patterns, wildlife habitat, local economy, community, and quality of life.

Whether or not this EIS represents a permanent change in policy for the Department remains unclear, but we hope it does. Even though the Department has largely failed to conduct the necessary analysis on the direct, indirect, and cumulative impacts of the Rosendale Dairy required by WEPA, we applaud the Department’s decision to prepare the EIS in the first place and urge the Department to faithfully execute its present and future obligations under Wisconsin law to “encourage productive and enjoyable harmony among people and their environment; to promote efforts which will prevent or eliminate damage to the environment; and to enrich the understanding of the important ecological systems and natural resources of the state.” Wis. Admin. Code § NR 150.025(1)(a).

It must be made clear that PEPL does not oppose Rosendale Dairy *per se*. The members of PEPL appreciate the economic benefits of agriculture to our state and they consume on a daily basis the products provided by agriculture. PEPL does oppose the issuance of a permit to discharge pollutants to a facility which poses significant risks to their quality of life and the natural environment upon which it depends. Members of PEPL are resolute in holding that this facility, as designed and intended to operate, will greatly harm the environment, that pollutant discharges to ground and surface water are inevitable based upon the information in the record, and that Rosendale Dairy has an absolute obligation not to degrade natural resources or the quality of life of this community.

The function and procedure of the requisite WEPA analysis is to “enable agencies to take a “hard look” at the environmental consequences of a proposed action,” *Clean Wis., Inc. v. PSC of Wis.*, 282 Wis. 2d 250, 376 (Wis. 2005), and the EIS must include “information which is important to evaluating reasonably foreseeable significant adverse impacts on the human environment[.]” Wis. Admin. Code § NR 150.22(1)(e). The Draft EIS shows plainly that the Department has yet to take a genuine “hard look” at the widespread impacts of Rosendale Dairy.

(A) DNR’s simultaneous issuance of the Draft EIS and Draft WPDES Permit demonstrates the agency’s lack of commitment to the WEPA process.

Of initial and overarching concern is the inherently flawed procedure by which the Department simultaneously released, and solicited public comment upon, both the Draft EIS and the Draft WPDES Permit. The purpose of the EIS in this case was to assess the potential environmental impacts of the Rosendale Dairy, flowing as they will from the state action of permit issuance. Thus it was presumed that the contents of a Final EIS (issued following a public hearing and comment on the Draft EIS) would inform the *drafting* of the WPDES permit. The environmental review under WEPA “must be part of the *initial* planning process for [DNR] projects and initiated *at an early stage* of the regulatory review process.” Wis. Admin. Code § NR 150.025(2)(e) (emphasis added). The resulting Final EIS should be an “analytical document that enables environmental and economic factors to be considered *in the development of* a proposed action.” Wis. Admin. Code § NR 150.22(1)(b) (emphasis added). It is unclear whether any of the factors discussed (however briefly) in the Draft EIS were considered in the development of the Draft WPDES Permit for Rosendale Dairy.¹ Indeed, it is unclear whether the Permit or the EIS was drafted first, and how one influenced the contents of the other.

The Draft Permit even has an effective date of March 1, 2009 included on the cover page, suggesting that the EIS was never intended to affect its contents. It is inconceivable that between February 4 and March 1 the Department will have the time and resources to (a) review the extensive public comments anticipated on these two documents; (b) conduct the additional environmental analysis necessary to bring the EIS into compliance with WEPA; (c) solicit from Rosendale Dairy the additional information necessary to complete its permit application; (d) consider what changes are necessary to the Draft Permit in order to bring the permit into compliance with the Clean Water Act and state and federal regulations implementing that act; (e) notice for public review and comment both the Final EIS and a revised Draft Permit; (f) solicit and review further comments on what we expect will be a significantly revised Draft Permit.

(B) Public notice flaws and untimely amendments to the WPDES permit application by Rosendale Dairy frustrate effective public participation.

The Draft Permit was released for public comment on December 19, 2008. The Draft Permit was based in part on a nutrient management plan (NMP) submitted by Rosendale Dairy through a various filings, including submissions on November 18, November 21, and December 1, 2008. The NMP was determined by DNR to be complete and in compliance with applicable requirements in NR 243 on December 10, 2008, nine days prior to the public noticing of the Draft Permit. From that point forward, many concerned citizens began to exercise their rights to review and inspect the NMP as well as other components of the permit application.

We understand that or about January 26, 2009, Rosendale Dairy submitted to DNR a significantly revised NMP. This revised NMP, which was apparently developed using the

¹ Neither the WPDES Permit nor the Environmental Impact Statement is labeled “Draft”, leading to confusion about the process among concerned members of the public. We take the position that both documents are currently in draft form, and that the Department must follow with final determinations on both documents.

December 15, 2008 update of the SNAP-Plus software, purportedly supersedes the NMP that was submitted to the DNR by Rosendale Dairy on or about November 17, 2008. Whether or not the DNR considers the January 26 NMP submission to be a modification of Rosendale Dairy's permit application or merely a public comment on that application, DNR may not consider the contents of that new NMP in issuance of the Draft Permit without violating the public's right to participate in the permitting process.

NMPs serve two important functions in the WPDES permitting process. First, an NMP is a central part of the permit application. A "final permit application" for CAFOs must include a "complete nutrient management plan that meets the requirements of NR 243.14." Wis. Admin. Code § NR 243.12(2)(a)(6). Second, an NMP is a *de facto* effluent limitation for Clean Water Act purposes because it is the primary means by which the permittee, the DNR, and the public may ensure that the CAFO will meet water quality standards. Thus the NMP is necessarily a core component of the CAFO permit itself. See *Waterkeeper Alliance, Inc. v. United States EPA*, 399 F.3d 486, 502 (2d Cir. 2005) (explaining that nutrient management plans "ensure that the Large CAFOs will, in fact . . . comply with all applicable effluent limitations and standards."); *Sierra Club Mackinac Chapter v. Dep't of Env'tl. Quality*, 277 Mich. App. 531, 554 (Mich. Ct. App. 2008) (concluding that CWA § 101(e), "which requires public participation in development, revision, and enforcement of effluent limitations, is applicable to development, revision, and enforcement of the comprehensive nutrient management plans[.]").

Should the DNR choose to allow the January 26 NMP, with substantial modifications, to substitute for the NMP ruled complete on December 10 (thereby substantially modifying the permit application and the enforceable terms of the WPDES permit itself), the DNR must revise the permit as necessary and re-notice the Draft Permit for public review and comment.

Should the DNR choose not to allow the January 26 NMP to replace the December 10 NMP, the permit application should be denied based on the December 10 NMP's failure to comply with the requirements of NR 243 and the technical standards incorporated in that chapter. As explained below and in the technical comments submitted by Mr. Sagady, the December 10 NMP is insufficient to demonstrate compliance with NR 243 or to be protective of water quality. The January 26 NMP submitted by Rosendale Dairy (a submission presumably intended to make up for the fact that the December 10 NMP was insufficient) implicitly recognizes this failure.

II. WEPA-Required Elements Missing or Insufficiently Addressed in the Rosendale Dairy Draft EIS

A number of WEPA-required analytic components are either completely absent or given unacceptably short shrift in the Rosendale Dairy Draft EIS. The Final EIS must consider these elements as described below.

- (A) Proposed preventative and mitigating measures (Wis. Admin. Code § NR 150.22(2)(c).)

It appears, so far as we can tell, that the discussion of mitigation is relegated to a half-page at the very end of the Draft EIS, at VI-8. In this short section it appears that the discussion of mitigation measures is limited to four “possible wildlife impact mitigation measures.” Draft EIS at VI-8.² Possible mitigation measures concerning the following environmental impacts of Rosendale Dairy are either absent entirely or insufficiently addressed:

- *Surface water quality* (including mitigation measures to control direct runoff of manure from the CAFO site; runoff of stormwater and silage leachate at the CAFO site; and surface water runoff at manure application sites)
- *Groundwater quality* (including mitigation measures to control infiltration of manure, stormwater, leachate, and other sources at the CAFO site, and infiltration of manure into groundwater at manure application sites)
- *Air quality* (including mitigation measures to control odors and emissions of ammonia, hydrogen sulfide, methane, PM, VOC, methanol, and other greenhouse gasses)

(B) Analysis of alternatives to the proposal (NR 150.22(2)(e)).

In order to comply with Wis. Stat. § 1.11(2)(e), the department is required to “study, develop, and describe appropriate alternatives to recommended courses of action[.]” Wis. Admin. Code § NR 150.20(g). The department has not conducted its own “detailed statement” on alternatives to the proposed action. *See* Wis. Stat. § 1.11(2)(c). Additionally, the Draft EIS must include “[a]n evaluation of alternatives to the proposal, including a rigorous exploration and objective evaluation of the environmental impacts of all reasonable alternatives, particularly those that might avoid all or some of the adverse environmental effects of the proposed action.” Wis. Admin. Code § NR 150.22(2)(e). This Draft EIS fails to study, develop and describe alternatives; instead, it does little more than list and discount them. It lacks serious independent analysis of the alternatives.

(1) The Draft EIS fails to fully evaluate alternatives to spreading manure.

Phase 1 will produce 46 million gallons of waste each year; Phase II will produce another 46 million gallons annually. If this was a municipality, secondary if not tertiary sewage treatment undoubtedly would be required. The Draft EIS, beginning at page VI-4 in the section entitled “Applicant Alternatives”, gives short shrift to any rigorous analysis of alternatives such as reducing the number of animals or the utilization of digesters or treatment to reduce the quantity of manure to be land applied. . “An environmental analysis shall be an analytical document that enables environmental and economic factors to be considered in the development of a proposed action.” Wis. Admin. Code § NR 150.22(1)(b). The department is to do its own analysis, not just accept the applicant’s.

² Although the “mitigation” section is captioned as “wildlife impact mitigation measures,” there are two statements in that section that appear to address impacts beyond wildlife. They include the construction of a secondary containment area to “minimize environmental damage to wetlands” near the site, and implementation of an “odor management plan” that includes “conserving water” and “notifying neighbors before agitating or spreading manure.” Draft EIS at VI-8.

Draft EIS § VI.B.2. purports to be an analysis of alternatives to manure spreading sites. Unfortunately, it utterly lacks any independent analysis by the department as to whether alternatives to land spreading are viable. It states only that the “operation could voluntarily implement additional best management practices,” Draft EIS at VI-6, and then identifies two BMPs that “go beyond” NR 243 requirements. There is no analysis of whether they are other alternatives that could be appropriate.

(2) The Draft EIS fails to independently analyze alternatives for production area technologies.

The EIS contains only a list of alternative technologies for the production area that “could be implemented either alone or in concert with others as part of Phase II.” Draft EIS at VI-6. The Draft EIS includes no analysis indicating why these alternative technologies are not now viable Phase I alternatives for handling and treating manure and process wastewater.

Under a discussion of “Department Alternatives”, the Draft EIS acknowledges that the Department’s alternatives are limited by virtue of the fact that the applicant has already constructed substantially all of the facility needed for Phase I. Draft EIS at VI-1. It does not seriously consider denial of the permit or requiring reconstruction of the production facilities as alternatives.³

Discussing the inclusion of additional water quality based restrictions as part of the WPDES permit, the Draft EIS acknowledges that the department could include “additional design requirements for the production area and that it could include additional or more restrictive best management practices beyond NR 243.14 “primarily to ensure additional levels of protection of groundwater.” It states that “[i]mplementation of these additional requirements would further reduce potential impacts to water quality beyond what is required in NR 243, but does not completely eliminate potential impacts.” Draft EIS at VI-3.

Wis. Admin. Code § NR 243.13 (2)(b) allows alternative discharge limitations for production areas when the permittee demonstrates an alternate treatment technology would result in an equivalent or lesser discharge of pollutants. The Draft EIS contains speculation as to whether any alternative treatment technology would result in an equivalent or lesser discharge of pollutants, but it contains no data-based analysis. Instead, the Department falls back on past practice:

As a matter of current and past practices when issuing WPDES permits for CAFO’s, the Department has relied on the implementation of best management practices rather than requiring treatment technologies when additional levels of water quality protection are determined to be necessary.

³ It must be noted that Rosendale Dairy constructed most of its facilities unlawfully, without first obtaining Department review and approval pursuant to NR 243.15. See Attachment 15 (Notice of Noncompliance (NON) dated August 26, 2008). By that August 26 letter, the Department ordered the applicant to stop construction of structures requiring regulatory approval; to the best of our knowledge the applicant disregarded the Department’s NON and continued construction, and no sanctions have been imposed to date by the Department.

Draft EIS at VI-4. With that dismissive statement, the Draft EIS rejects:

Treatment technologies [that] exist that may reduce or eliminate pathogens in manure (e.g. anaerobic digestions), thus further reducing the potential for pathogen contamination of groundwater associated with land application practices . . . additional best management practices that are more restrictive than the specific requirements contained in NR 243 (e.g., additional field investigative work prior to land application, increased setbacks from areas of concern, further restrictions on timing and manure applications).

Id. NR 243.14(1)(b) provides that the department may require additional management practices be included in the nutrient management plan to ensure compliance with NR 243.

The Draft EIS identifies alternatives that it states could reduce the environmental effects but fails to conduct any “rigorous exploration or objective exploration” of those alternatives. *See* Wis. Admin. Code § NR150.22(2)(e) The Draft EIS reads more like an effort to justify the applicant’s proposal and the permit than an independent objective analysis. Alternative treatment technologies are rejected without any justification

(3) The EIS fails to independently analyze alternatives to the proposed manure hauling.

The Draft EIS at I-21 discusses alternatives to manure hauling. The document describes “advanced manure technology” that might be adopted by the applicant in Phase II of the project: anaerobic digestion, “Air Flotation” coupled with center pivot irrigation, and “Ultra filtration” are all identified as advanced technologies that could reduce the amount of manure that needs to be hauled and spread. However, they will only be “evaluated” (presumably by the operator) for Phase II. There has been no independent evaluation by the department as to whether these are appropriate alternatives to the applicant’s proposal for Phase I.

The Draft EIS should contain an independent analysis of the viability of putting these technologies to use in Phase I rather than waiting for nothing more than the possibility that the applicant will evaluate them to see if they might be used in Phase II. There is no departmental analysis whatsoever in the Draft EIS why these are not viable alternatives that ought to be put in place for Phase I.

The language of the Draft EIS implies there are better management practices, yet neither evaluates them or recommends their inclusion in the permit, presumably for no reason other than that the applicant has not proposed to use them. The Draft EIS begins to look like an exercise undertaken simply to rubber stamp the applicant’s plans. “An environmental analysis is not a document of justification.” Wis. Admin. Code § NR 150.22(1)(c).

Instead of putting the environment at risk with hauling manure over local public highways and spreading it on fields, the DNR ought to require advanced treatment system technology, including anaerobic digestion, as the Best Management Practices available. The applicant has the financial wherewithal to make the necessary investment – there are 22 digesters operating on 17 other smaller operations in the state.

Contrast the situation at Rosendale Dairy with that at Emerald Dairy, a smaller CAFO with 2240 animal units located in Baldwin, Wisconsin. That WPDES permit (No. WI-0059315-01-1) was amended late in 2008 to include alternative discharge limitation on daily discharges “based on the ability of the treatment system technology being used at the site.” That technology consists of a “manure treatment system consisting of a digester and several solids separation technologies including ultra filtration and reverse osmosis”. Simply put, if it is good enough for Emerald why isn’t it good enough for Rosendale? The Draft EIS is entirely silent.

Presumably Emerald Dairy voluntarily installed that technology because it found that doing so was feasible and economical. It presumably *is* an alternative that reduces the number of loads hauled and the gallons of manure and process wastewater that are spread on the land. One has to ask whether the DNR approved it only because the operator installed it voluntarily and is not willing to require it installed. The Draft EIS analysis for Rosendale ought to shed light on this alternative, and the department ought to require advanced treatment system technology.

In addition, the Final EIS should discuss the mitigating benefits to air and water quality from requiring immediate (as opposed to within 24 or 48 hours) incorporation of manure. Immediate incorporation would lower the risk of surface water runoff and also reduce the hazardous air emissions (including ammonia) associated with land application of manure.

(4) The Draft EIS is incomplete because it fails to include the Nutrient Management Plan as an appendix or to make it readily available to the public.

Although the NMP is available on a CD to those who have time to seek it out and who know how to maneuver the DNR bureaucracy to do so, the failure of the department to attach the NMP to the Draft EIS as an appendix greatly undermines the adequacy of the Draft EIS. On page after page the DNR asserts that the NMP is adequate and meets the standards of NR 243, but it provides no readily available way for members of the public to review the NMP independently. At the very least the Draft EIS that is available on the department’s web site ought to have included a link to the NMP. The inability of the members of the public to readily review the NMP undermines its credibility.

III. Specific Substantive Areas of Analysis Lacking in the Draft EIS

This section of our comments goes into further detail regarding specific environmental impacts that are either raised but insufficiently analyzed in the Draft EIS or are ignored altogether. Collectively, these omissions demonstrate the extent to which the Department has failed to thoroughly assess the potential impacts of Rosendale Dairy to air and water quality.

(A) Analysis of Air Emissions in the Rosendale Dairy Draft EIS.

DNR’s cursory assessment of the air emissions likely to be released from Rosendale Dairy is insufficient to withstand scrutiny and falls far short of what is required by WEPA. The Draft EIS, at pages IV-5 to IV-8 and pages V-3 to V-5, does not make any effort to quantify or assess the anticipated emissions of ammonia, hydrogen sulfide, PM, VOC (including methanol)

or any other air pollutant, nor does it address any of the potential regulatory requirements to which Rosendale Dairy may be subject, nor does it make any effort to explain what steps may be taken by Rosendale Dairy or the Department to mitigate the dairy's air emissions. In fact, portions of the "evaluation" of air emissions (at pages V-3 to V-5) appear to have been cut and pasted, verbatim, from the "environmental effects" section of the Draft EIS (at pages IV-5 to IV-8). The Final EIS must thoroughly analyze the impacts of Rosendale Dairy, both individually and when combined with current and reasonably foreseeable future confinement dairy operations, on Wisconsin's air quality.

The Department and the dairy industry, both locally and nationally, have commonly disavowed the technical ability to monitor or model air emissions from confined livestock operations, and recent regulatory decisions have relied upon this purported "knowledge gap" to extend the industry's free ride. For instance, despite actions taken by a variety of other States to control the hazardous air emissions from large dairies, the DNR recently extended to July 2011 the deadline by which livestock facilities must comply with certain state regulatory requirements for toxic air pollution. *See Wis. Admin. Code § NR 445.09(6)(d)*. This regulatory avoidance, however, does not excuse the DNR from analyzing the impacts that Rosendale Dairy will have on air quality; nor does it excuse the DNR from considering other regulatory requirements under State or Federal law that may be required of Rosendale Dairy.

(1) Unsubstantiated statements in the Draft EIS regarding air pollution impacts leave considerable gaps in DNR's analysis that must be addressed.

The following statements from the Draft EIS, which almost completely comprise the Department's air emissions analysis, indicate to an alarming degree the great extent to which the Department avoided a genuine assessment of the conventional and hazardous air pollution likely to be emitted by Rosendale Dairy. Each statement is followed by specific questions or concerns that the Department must address before finalizing the EIS:

- "The generation rates of these gasses, organisms and particulates varies depending on time of year and day, species, type of housing, manure handling system, feed type, and management system." (Draft EIS at V-3 to V-4)
- What type of housing will be used by Rosendale Dairy, and how will the housing type contribute to or reduce air emissions?
- What type of manure handling system will be used by Rosendale Dairy, and how will the manure handling system contribute to or reduce air emissions?
- What type of feed will be used by Rosendale Dairy, and how will the feed type contribute to or reduce air emissions?
- What type of management system will be used by Rosendale Dairy, and how will the management system contribute to or reduce air emissions?
- "Even when using best management systems and mitigation techniques, some airborne contaminants may be generated. . . . Most [health] concerns are associated with chronic or long-term exposure. However, some human and

animal health concerns or safety hazards can result from acute or short-term exposures.” (Draft EIS at V-4)

- What best management systems are available to Rosendale Dairy to reduce or control air emissions?
- What best management systems does Rosendale Dairy intend to deploy?
- How much of each airborne contaminant (including ammonia, hydrogen sulfide, PM, VOC, methanol, methane, NO_x, and other greenhouse gasses) will be generated by Rosendale Dairy at Phases I and II? What are the environmental and public health impacts of those airborne contaminants?
- What are the public health concerns associated with both long-term (chronic) and short-term (acute) exposures to the airborne contaminants that will or may be released from Rosendale Dairy?
 - “Despite the lack of established emissions factors for animal agricultural operations at the federal level, some states have addressed air quality issues at animal agricultural operations.” (Draft EIS at IV-6)
- What research has been performed by EPA, other States, or research universities to estimate emissions for confined dairy operations? What range of emissions estimates is supported by available science?
- What actions, precisely, have other States taken to address air emissions from large dairies? What best management practices are required by other States?
- Can any of the actions taken by other states to control air pollution from livestock facilities be used as mitigation measures by Rosendale Dairy?
 - “Based on information from Rosendale Dairy, a number of BMPs will be implemented at the facility which may mitigate air emissions relating to odor, VOC, and/or ammonia (including diet manipulation, solids separation, frequent scraping, mechanical sand separation). . . . Implementation of any of these practices could potentially mitigate air quality impacts.” (Draft EIS at IV-6)
- What BMPs will be implemented by Rosendale Dairy, and what will be the resulting reduction in air emissions? Substantiating information is entirely lacking from the Draft EIS.
- What other BMPs are available to Rosendale Dairy but will not be implemented, and what are the potential reductions to air emissions that will therefore not be attained?
 - “The final stages of [the DNR study assessing the effects of certain BMPs on air emissions] will occur in spring 2009, with a final report released in July. An interim report will be available in January 2009.” (Draft EIS at IV-7).

- What are the interim results from the DNR study, published in January 2009? How do the results of that study impact available mitigation techniques for Rosendale Dairy’s air emissions?
- Which BMPs included in the DNR study would have an effect on the air and odor emissions from Rosendale Dairy?
 - “Rosendale Dairy submitted modeling information that demonstrated compliance with ammonia and hydrogen sulfide standards at and beyond the company property. BAM staff reviewed the information and performed an independent analysis with the newly submitted data that confirmed the Rosendale analysis.” (Draft EIS at IV-8).
- Precisely what additional analysis did the Department perform in the wake of the submission by Rosendale Dairy? What documentation was prepared by the Department to support that statement?
- What ammonia and hydrogen sulfide emissions factors were used by the Department and Rosendale Dairy? Are those emissions factors supported by sound science?
- What information was submitted by Rosendale Dairy, or prepared by the Department, to determine whether Rosendale Dairy might be subject to other state or federal regulatory requirements for air emissions?

(2) *DNR must fully assess the potential emissions of ammonia from Rosendale Dairy, the resulting environmental and public health impacts, and potential regulatory implications.*

The livestock industry is responsible for approximately 70% of the nation’s ammonia emissions.⁴ Cattle alone are believed to emit over 40% of the nation’s ammonia,⁵ and Threemile Canyon Farms, a 50,000+ head dairy in eastern Oregon, is believed to be the nation’s single largest stationary source of ammonia.⁶ Ammonia is a leading precursor for fine particulate matter (PM2.5),⁷ for which new, more protective regulations have recently been promulgated by the U.S. Environmental Protection Agency. Ammonia is harmful to human health at medium to high doses, and exposure to very high levels of gaseous ammonia can cause burning and permanent damage to the eyes, throat, and lungs.

There presently exist numerous professional or scientific studies that provide emissions estimates for ammonia from confined dairy operations. While the emissions factors proposed by

⁴ Roe, S.M. et al., Emissions Inventory Guidance for Anthropogenic Non-Agricultural Ammonia Sources (included as Attachment 23).

⁵ Battye, R., W. et al., 1994. Development and Selection of Ammonia Emission Factors. EPA/600/R-94/190. Final report prepared for U.S. Environmental Protection Agency, Office of Research and Development. USEPA Contract No. 68-D3-0034, Work Assignment 0-3.

⁶ See Letter from National Association of Clean Air Agencies to United States Environmental Protection Agency, March 27, 2008 (included as Attachment 11).

⁷ See, e.g., Gay, Susan W. and Knowlton, Katharine F., 2005. Ammonia Emissions and Animal Agriculture, Virginia Tech Publication Number 442-110, available at <http://www.ext.vt.edu/pubs/bse/442-110/442-110.html>

these studies vary, even at the lowest end of the spectrum Rosendale Dairy will likely emit significant quantities of ammonia gas, emissions which may trigger various regulatory obligations under State and Federal law. Despite these probable emissions, the Draft EIS makes absolutely no effort to estimate, quantify, or otherwise analyze the potential ammonia emissions from Rosendale Dairy.

- a) The Department's faulty reliance on air emissions modeling data submitted by Rosendale Dairy cannot replace actual analysis.

Perhaps most alarming, from the standpoint of members of the public concerned with air quality, public health, and the continuing ability of the Department to adequately regulate sources of air pollution in Wisconsin, is the Department's unquestioning acceptance to the dispersion analysis performed by Rosendale Dairy's consultants, Conestoga-Rovers & Associates. As mentioned on page IV-8 of the Draft EIS (but without further explanation or documentation), the Department first performed an air dispersion analysis in conjunction with the EA, showing that Rosendale Dairy was likely to exceed the NR 445 thresholds for ammonia by a considerable amount. Following the submission of a competing study by Rosendale Dairy, the Department concluded that an "independent analysis" performed by the Department "confirmed the Rosendale Analysis." Draft EIS at IV-8.

The analysis submitted by Rosendale Dairy (and subsequently reviewed by the Department) used unusually low emissions factors when estimating the quantity of ammonia that Rosendale Dairy was likely to emit. In its revision to the EIS, the DNR must perform its own *detailed analysis* to determine the extent of the Dairy's likely ammonia emissions. Documentation supporting the Department's "independent analysis" must be included in the Final EIS.

Table 1, below, presents just a small selection of emissions factors employed by other regulatory agencies and the corresponding ammonia emissions expected from Rosendale Dairy; DNR should review these and other readily available data in its analysis.

Once the DNR has accurately modeled the potential ammonia emissions from Rosendale Dairy, several further impacts must be addressed, including (1) the impacts of airborne deposition of ammonia on surface waters near Rosendale Dairy (numerous studies show that deposition of ammonia to surface waters is a serious concern near CAFOs⁸); (2) the impacts of Rosendale Dairy's ammonia emissions on the formation of fine particulate (PM2.5); and (3) the extent to which Rosendale Dairy should be regulated under federal and state clean air laws for its contributions to PM2.5.

⁸ See, e.g., Wilson, Sacoby M. and Marc L. Serre, 2007. *Examination of atmospheric ammonia levels near hog CAFOs, homes, and schools in Eastern North Carolina*, Atmospheric Environment 41:23, 4977-4987.

Table 1: Estimated annual ammonia emissions from Rosendale Dairy

<i>Estimated ammonia emissions for Rosendale Dairy (in tons per year)</i>	Pinder ⁹	U.S. EPA 2002 Emissions Inventory (Draft Report) ¹⁰	ICL-IDEAL negotiated emissions factors for Idaho dairies ¹¹
	Emissions factor: 28.9 – 122.3 lbs/cow/year	Emissions factor: 18.5 lbs/cow/year	Emissions factor: 72 – 122 lbs/cow/year
Phase I (4,150 head)	60 – 254	38	150 – 253
Phase II (8,300 head)	120 - 508	77	299 – 509

- b) DNR must address the potential regulatory implications of Rosendale Dairy’s anticipated ammonia emissions under State and Federal law.

WEPA requires that the Final EIS include an evaluation of “the conformance or nonconformance of the project with applicable statutes, rules, and regulations.” Wis. Admin. Code § NR 150.22(2)(f). That analysis is largely missing from the Draft EIS, especially as it relates to the air emissions from Rosendale Dairy. Furthermore, page I-23 of the Draft EIS states that “Rosendale Dairy has no plans to perform formal environmental monitoring of odors or air emissions at the site and none are required by law.” This statement belies the fact that Rosendale Dairy, like other facilities emitting air pollution, is subject to various reporting requirements under state or federal law and may be required, very likely now or certainly in the near future, to obtain an air permit. These considerations should be addressed in the Final EIS.

NR 438, Wis. Admin. Code, requires facilities emitting air contaminants over certain threshold levels to submit to the Department annual emission inventory reports. Wis. Admin. Code § NR 438.03(1). Among the air contaminants likely to be emitted by Rosendale Dairy and for which reporting under NR 438 is required are ammonia (reporting level: 4,097 lbs/yr); hydrogen sulfide (reporting level: 3,279 lbs/yr); and methanol (reporting level: 6,000 lbs/yr). Wis. Admin. Code § NR 438.03, Table 1. As discussed above, ammonia emissions from Rosendale Dairy are likely to be, *at a minimum*, 76,000 lbs/year, exceeding the NR 438 reporting threshold by a factor of 18. It is possible that emissions of hydrogen sulfide, methanol, or other gasses by Rosendale Dairy will trigger similar reporting requirements. These must be discussed in the Final EIS.

⁹ Pinder, R.W. et al., Ammonia Emissions from Dairy Farms: Development of a Farm Model and Estimation of Emissions from the United States, available at <http://www.epa.gov/ttn/chief/conference/ei12/part/pinder.pdf> (included as Attachment 10).

¹⁰ USEPA’s 2002 National Emissions Inventory is available at <http://www.epa.gov/ttn/chief/net/2002inventory.html>.

¹¹ Dairy Air Emissions Analysis (Focus: Ammonia Emissions) for Typical Dairy Management Systems in Idaho, 2005. Developed in a Collaborative Negotiation between Idaho Conservation League and Independent Dairy Environmental Action League, available at <http://www.4cleanair.org/Documents/ThresholdReport.pdf> (included as Attachment 9).

- (3) *DNR must fully assess the potential emissions of methanol from Rosendale Dairy, the resulting environmental and public health impacts, and potential regulatory implications.*

Methanol, also known as wood alcohol, is a listed hazardous air pollutant (HAP) under section 112 of the federal Clean Air Act. 42 U.S.C. § 7412(b)(1). Methanol is also a volatile organic compound (VOC) and contributes to the formation of ground-level ozone. According to U.S. EPA, “[a]cute (short-term) or chronic (long-term) exposure of humans to methanol by inhalation or ingestion may result in blurred vision, headache, dizziness, and nausea.”¹² Methanol has also been linked to decreased gestation time, an increased number of caesarian-section births, and various developmental impairments.

Under the federal Clean Air Act, any stationary source that has the potential to emit 10 tons per year or more of any single hazardous air pollutant (or 25 tons per year or more of any combination of hazardous air pollutants) is required to comply with emissions limitations developed by the EPA or the state representing the maximum achievable control technology (MACT). 42 U.S.C. § 7412(g)(2)(B). In the absence of an applicable emissions limitation (as is the case for methanol emissions from livestock operations), construction of a major source of methanol is prohibited without a site-specific MACT determination. *Id.* The relevant provision of the Clean Air Act states:

After the effective date of a permit program under title V in any State, no person may construct or reconstruct any major source of hazardous air pollutants, unless the Administrator (or the State) determines that the maximum achievable control technology emission limitation under this section for new sources will be met. Such determination shall be made on a case-by-case basis where no applicable emission limitations have been established by the Administrator.

Id. A MACT determination under CAA section 112(g)(2)(B) must achieve “the maximum degree of reduction in emissions of HAP which can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.” 40 C.F.R. § 63.43(d)(2).

Recent studies suggest that confined dairy operations of the type Rosendale Dairy plans to operate have the potential to emit greater than 10 tons per year of methanol, thereby triggering the requirement to obtain a MACT determination by the Department. For instance, the research performed by Dr. Frank Mitloehner of the University of California at Davis shows considerable dairy methanol emissions stemming from a combination of fresh waste, enteric emissions, and fermenting silage. Dr. Mitloehner’s research suggests average emissions factors ranging from 3.09 lbs/cow/yr for dry cows and 11.42 lbs/cow/year for lactating cows.¹³ It is likely, therefore,

¹² U.S. EPA, Air Toxics Web Site: Methanol, at <http://www.epa.gov/ttnatw01/hlthef/methanol.html>.

¹³ Motloehner, F. et al., Volatile Fatty Acids, Amine, Phenol, and Alcohol Emissions from Dairy Cows and Fresh Waste: Final Report Submitted to the California Air Resources Board (May 31, 2006) (included as Attachment 1).

that that Rosendale Dairy will emit between 6.4 and 23.7 tons per year of methanol upon completion of Phase I, and between 12.8 and 47.3 tons per year of methanol at Phase II, triggering the regulatory requirements of section 112 of the Clean Air Act.

In the Final EIS, DNR must fully assess the impacts of the Rosendale Dairy's potential methanol emissions on air quality and public health. Furthermore, beyond the revisions to the EIS that are clearly necessary, the Department should advise Rosendale Dairy and the public of the dairy's obligations to obtain a MACT determination and necessary permits under the Clean Air Act.

(4) *The Draft EIS entirely failed to include the required analysis of energy impacts.*

Wis. Admin. Code § NR 150.22(2)(d) provides in part that “[a]n analysis shall also be made of the energy impacts of the proposed project.” The Draft EIS is completely silent on Rosendale Dairy's anticipated energy use. There are numerous sources of information readily available to assess modern dairy energy use; a basic internet search is a good place to begin.¹⁴

II. Analysis of Water Quality Impacts in the Rosendale Dairy Draft EIS

In many substantial ways the Draft EIS fails to fully assess the likely water quality impacts of the Rosendale Dairy and its manure spreading activities.

(1) *Unsubstantiated statements in the Draft EIS regarding water quality impacts leave considerable gaps in DNR's analysis that must be addressed.*

The following statements from the Draft EIS are indicative of the incomplete or unsubstantiated assessment of the potential pollution of ground and surface water by the operations of Rosendale Dairy. Each statement is followed by specific questions or concerns that the Department must address before finalizing the EIS:

- “Land applied animal waste, or leaking manure storage lagoons are potential sources of contamination to groundwater in Fond du Lac County.” (Draft EIS at III-20);
“There is a potential for increased nitrate and bacteria contamination in private wells in the vicinity of the dairy and spreading sites.” (Draft EIS at IV-4)
- What is the likelihood of groundwater contamination from the operation of Rosendale Dairy? How might the operation of Rosendale Dairy contribute to the historic groundwater contamination in Fond du Lac County?
- What can be done to prevent this contamination?

¹⁴ See, e.g., DLtech, Inc., *The Dairy Farm Energy Management Guidebook (Introduction)* (2006), available at <http://www.dairyfarmenergy.com/page1.html>. Additional chapters are available at the same website.

- “Due to low gradient wetland stream channels common across the area, most of the manure solids would likely be trapped within the wetlands closest to the discharge site.” (Draft EIS at IV-13)
- What portion of land spreading sites contain wetlands? To what extent will the operations of Rosendale Dairy have adverse impacts to wetlands? Have the wetlands in the fields where land applications are to occur or those “closest to the discharge site” been delineated?
- What are the efforts made by either the Department or Rosendale Dairy to protect the area’s wetland functional values?
- What determinations, if any, has the Department made pursuant to Wis. Admin. Code § NR 103.08 to protect, preserve, restore and enhance the quality of the area’s wetlands?
 - “Many of the waters in the vicinity of Rosendale Dairy are already phosphorus enriched.” (Draft EIS at IV-15)
- Exactly which waters in the vicinity of Rosendale Dairy are phosphorus enriched? Which waters in the vicinity are currently designated by the Department as impaired for phosphorus or likely to become impaired in the near future?
- How will the application of manure in the vicinity of Rosendale Dairy impact current phosphorus levels in each of the three main watersheds impacted by land application? (Fond du Lac River/Fox River/Rush Lake, Big Green Lake, and Rock River.) (Draft EIS at III-9)

(2) Analysis of Rosendale Dairy’s nutrient management plan is lacking in the Draft EIS

Not surprisingly, Rosendale Dairy’s nutrient management plan (NMP) is a central component of the WPDES application. However, analysis of the NMP and its ability to control nutrient and other pollution in the vicinity of Rosendale Dairy is completely lacking in the Draft EIS. Although the Draft EIS includes numerous conclusory statements about the efficacy of the NMP, these statements, without analysis or substantiation, are inadequate.

- a) The Final EIS must take into account recent updates to the Rosendale Dairy NMP.

The Draft EIS at page V-2 states, “[t]he NMP for Phase I has been reviewed by the Department and determined to be in compliance with applicable NRCS 590 criteria and all NR 243 requirements.” This statement, while perhaps true at the time the Draft EIS was released, is inconsistent with our recent communications with DNR staff and is no longer accurate.

On or about January 26, 2009, an updated NMP was submitted by Rosendale Dairy (see discussion in Section (I)(B) of these comments, above); to our knowledge, an analysis of this revised NMP has yet to be completed by the Department. Not only have these recent developments potentially rendered the WPDES permit application for Rosendale Dairy incomplete, they have rendered inaccurate the above-quoted statement from page V-2 of the Draft EIS. The Final EIS must address any revisions to the NMP.

- b) Reliance on the Rosendale NMP, which was not included in the EIS, cannot make up for actual analysis of nutrient impacts

The Draft EIS at page V-2 makes numerous references to the NMP for Phase I of Rosendale Dairy, yet the NMP is neither included as an attachment to the Draft EIS, nor made publicly available in any manner, such as through a website (although the Department has made copies of it available upon request). Reliance upon the NMP cannot replace actual analysis of the potential water quality impacts from nutrient application.

- (3) *The Draft EIS fails to fully consider impacts to groundwater quality and the potential to exceed groundwater quality standards.*

Pages I-13 through I-20 of the Draft EIS contain discussion of the potential impacts of manure spreading on ground and surface water quality, but fail to address the possibility that the land application of manure may cause exceedences of groundwater quality standards under Wis. Stat. § 160 and Wis. Admin. Code § NR 160. Pursuant to those authorities, the Department has established preventative action limits and enforcement limits for a variety of substances that are known to adversely affect human health. In the Final EIS the Department must assess whether the land spreading activities of Rosendale Dairy will have any impact on human health-derived groundwater standards under state law.

- (4) *The Draft EIS fails to fully analyze the impact of the Rosendale Dairy on phosphorus as a threat to the State's waters.*

The Draft EIS reports that phosphorus and soil particles are the two constituents of runoff pollution that pose the greatest threat to the State's water resources. Draft EIS at III-8. Animal waste and fertilizer are two common sources of phosphorus, but the Draft EIS goes on to state that "[T]he two constituents of greatest concern from manure runoff are ammonia and Biochemical Oxygen Demand (BOD)" with no further mention of phosphorus. Subsequently, the reader learns that all of the surface waters near the production facility are "phosphorus enriched from landscape runoff." Draft EIS at III-31. Under that same analysis for the manure spreading field ("Hydrography & surface water quality & quantity", Draft EIS at III-36), one learns the little is known about the surface waters near the fields:

Very little is known about the water bodies closest to the fields identified in the nutrient management plan. Documentation of the hydrology, water quality, habitat, and biological communities of the intermittent and perennial streams is lacking.

Draft EIS at III-37. But later we learn that "many of the waters in the vicinity of Rosendale Dairy are already phosphorus enriched." Draft EIS at IV-15. This is another glaring inconsistency in the document that leads to unreliable analysis. How can the Draft EIS analyze the potential environmental impact of the permit on these streams and ditches if there is no baseline information? That information should be in the document itself.

When the Draft EIS looks at the environmental effects of Rosendale Dairy on the hydrography of the production area one learns that phosphorus associated with manure and process waste water can have detrimental impacts on ground and surface water and can contribute to fish kills and reduced recreation. Draft EIS at IV-2 What follows is a rationale for the WPDES program and a continued description of the dairy's plans, with one sentence of conclusion on the environmental impacts that is not supported by any data or analysis. That sentence says only that if the operation conducts landspreading in accordance with the NMP and the WPDES permit (suggesting the drafters of the EIS had already seen the Draft Permit, before even the draft EIS, let alone the Final EIS, was complete.), and maintains an adequate land base, and maintains equipment, the "threat to groundwater, wetlands, and surface water should be minimal under normal operating and climatic conditions." Draft EIS at IV-4. With no phosphorus baseline, and no further analysis, the conclusion is not credible.

(5) *The Draft EIS fails to adequately analyze the impacts to groundwater of spreading manure on unsuitable soils.*

One of the main flaws of the NMP, and consequently of the Draft EIS and WPDES permit, are that it permits manure application on unsuitable soils where there is a high potential for contamination of surface or groundwater and that there is no assurance that the workers driving and operating the equipment will avoid high risk areas in individual fields. It is evident from the record that many acres in fields proposed for spreading have a depth to groundwater that is shallow or even non-existent, especially in Rosendale. The significant threat to groundwater posed by Rosendale Dairy is the predominance of wet soils in the acreage where the dairy proposes to apply manure and process wastewater.

The Draft EIS acknowledges that a majority of the fields identified in the nutrient management plan where application of manure and process wastewater is planned contain soils described as 'w' soil units, i.e., they are wet soils that have less than 12 inches to the apparent water table. Draft EIS at I-18. The Draft EIS recognizes that this "represents an increased risk for bacterial pollution of ground water from manure spreading activities." *Id.* In some fields more than 90% of the soils are wet soils, according to the Draft EIS. *Id.* The Draft EIS states "it is expected" that compliance with the departmental guidance and the NMP will reduce the risk for nutrient pollution of groundwater. *Id.* Although the Department may expect compliance, analysis of potential noncompliance must still be included.

The "departmental guidance" apparently is the "DNR Interim Guidance" (undated) that provides steps that CAFO's may take to demonstrate compliance with the NR 243 depth to groundwater requirement. Wis. Admin. Code § NR 243.14(2)(b)(7) prohibits the application of manure and process wastewater to soils where the depth to groundwater is less than 24 inches.

That guidance is unworkable on this scale. Given the variability in the soils and the change in conditions over time on the 5,631 identified acres, it will be necessary to field check countless sites, many in each field and prior to each separate application in that field, in order to fully avoid areas of the field in which the depth to groundwater is less than 24 inches. Conditions

change: an area with more than 24 inches at one time may have less than 24 inches at the time of the next application, or vice versa.

The guidance requires that for each field listed in the NMP all wet soil units are mapped. It does not require that they be mapped at a scale useful to the operator of spreading equipment who must make a decision whether to apply or not as the equipment is driven across the field. The guidance further provides that “before any application” (emphasis added) it must be demonstrated that the wet sections of the field are trafficable and plantable. In order to do this, there are three options available. First, the operator can drive a fully-loaded manure spreader across the wet sections of a field (assuming there is a good map available) at least two times using a W pattern. If the equipment does not get stuck or does not rut up the wet soil “significantly” (which is not defined) then spreading can continue. Common sense suggests that test is not likely to determine whether there is groundwater less than 24 inches below the surface under all conditions.

The second test is to locate all drain tiles and determine if they are functioning and the tile depth is 24 inches or greater. The Draft EIS reports that Rosendale Dairy has been unable to locate any drain tiles, in spite of the fact that many of the fields are within one of two organized drainage districts and local resident Timothy Thiel has successfully located several places where there are tiles.¹⁵

The third unworkable and unreliable test of whether an area in a field has wet soils is to excavate at least two representative soil pits within each five acre sized wet soil section. This spacing of holes is inadequate; conditions are too likely to be different parts of even a five acre area.

It undoubtedly is time-consuming and expensive to do adequate field verification for any application on every part of every field where the depth to the water table could be less than 24 inches. It is for that very reason that PEPL does not have confidence that it will occur, resulting in discharges to ground and surface water in violation of the permit as drafted and in violation of Wis. Admin. Code § NR 243.

The EIS notes that Lomira-Virgil and Houghton-Palms soils are common in the fields where it is proposed that manure be spread. “Wetness is the main limitation for both.” Draft EIS at III-2. These are not suitable soils for spreading manure.

The 1973 Soil Conservation Service Soil Survey for Fond du Lac County includes an engineering analysis of the limitation on the soils for onsite sewage systems. This analysis indicates the ability of the soil to absorb and dispose of sewage effluent without contamination of surrounding areas:

The rating is slight if the limitations are few and easy to overcome, moderate if the limitations can be overcome by good management and careful design, severe if the

¹⁵ See Statement of Timothy Thiel, dated February 4, 2009 (included as Attachment 22).

limitations are difficult to overcome, and very severe if use for the given purpose is generally unsound. Those soils that have a moderate to severe limitation require onsite investigations and appropriate tests before suitability can be determined.”

Factors that affect the limitations of the soils for onsite sewage systems are permeability and percolation, structure stability, ground water level, depth of the soil, kind of underlying material, susceptibility to flooding, slope and proximity to streams and lakes.¹⁶

PEPL submits to the record several maps and tables¹⁷ indicating the soil types for every field where Rosendale Dairy proposes to spread manure. The data is taken from the Soil Survey for Fond du Lac County and from the maps made available by the applicant. In the Towns of Ripon, Rosendale, and Springvale, 100% of the fields have soils identified by the applicants for spreading manure and process wastewater with limitations for sewage disposal systems rated as “severe” to “very severe.” Stated another way, placing sewage treatment systems on these soils poses a high risk of groundwater contamination. The field application of manure to these fields is not significantly different than the installation of sewage treatment systems, i.e., septic systems.

PEPL also submits to the record two maps showing “Depth to Water Table” in the Town of Ripon and “Depth to Groundwater” in the Town of Rosendale.¹⁸ Both were prepared as part of the towns’ respective comprehensive planning efforts. Presumably because the Department does not have the data, the Draft EIS contains little analysis of the soils, other than by reference to a nutrient management plan not readily available to members of the public and which the applicant modified significantly after the EIS was prepared and after the public hearing was held.

The Draft EIS recommends, but the permit does not require, “that field verification of soil surveys be done prior to spreading animal waste. Verification should include but not be limited to soil type, soil thickness, depth to water table if less than two feet, and distance to wetlands and wells.” Inconsistently, the Draft EIS suggests that this data is not necessary because the NMP already has the data:

The NMP addresses the application and budgeting of nutrients (e.g., manure and process wastewater) for plant production on field-by-field basis. The NMP describes, in specific detail, crops, tillage, nutrient application rates, locations, and methods implemented in order to protect surface water and ground water resources while maintaining the physical, chemical and biological condition of the soil.

The NMP accounts for all nutrient sources, including soil reserves, commercial fertilizer, manure, organic byproducts, and crop residues to ensure proper utilization and protect

¹⁶ Soil Survey of Fond du Lac County Wisconsin, United States Department of Agriculture Soil Conservation Service, et. al., April, 1973.

¹⁷ See Ripon Plat Map with Soil Survey Charts (included as Attachment 17); Springvale Plat Map with Soil Survey Charts (included as Attachment 18), and Rosendale Plat Map with Soil Survey Charts (included as Attachment 19).

¹⁸ See Town of Ripon Depth to Groundwater Map (included as Attachment 20) and Town of Rosendale Depth to Water Table Map (included as Attachment 21).

water quality. The NMP is written to ensure all manure and process wastewater applied to fields is incorporated into the soil as a fertilizer for plant uptake, thus significantly reducing the potential for nutrient pollution of surface or ground water.

Draft EIS at I-17. It is inexplicable how the department can conclude that the NMP has addressed, on a field by field basis and in specific detail, the “locations and methods implemented to protect surface and groundwater resources...” if it does not have perhaps the most critical data: the specific locations of the wet soils in every field.

The Draft EIS states at III-20 that “land applied animal waste” is a potential source of groundwater contamination in Fond du Lac County. It also tells us ...that “[because] *so little is known about depth to groundwater around spreading sites*, the DNR also recommends that additional information on soils for each spreading field be provided to the Department.” (emphasis added). Draft EIS at IV-16. This recommendation goes to the heart of the nutrient management plan, which one presumes the department had in hand when it prepared the Draft EIS. Because the data in the NMP is not sufficient, no permit should be approved.

Regarding what is arguably the biggest threat that this facility poses, it is inherently inconsistent and illogical to say, on one hand that data is lacking about the depth to groundwater, and to say on the other that the data is in the NMP. *See, e.g.*, Draft EIS at V-8. (“There is also the potential for unknown field characteristics that increase the potential for groundwater impacts to occur in this area.”) The DNR and the applicant simply cannot have it both ways. If they do not have the acre-by-acre information on depth to groundwater, they cannot protect the groundwater from contamination from land spreading of manure. Simply stating that it will be protected is not by any means the same thing as actually protecting the groundwater.

PEPL proposes an alternative. If issued, the Final WPDES permit should prohibit the application of manure and process wastewater on any ‘w’ soil. That would be consistent with Wis. Admin. Code § 243.14(2)(b)(7) which prohibits the application of manure or process wastewater to areas of a field with a depth to groundwater or bedrock of less than 24 inches. It would enable Rosendale Dairy to avoid the tedious task of confirming depth to groundwater in every area of every field prior to every application, which is the only way to avoid violating the permit. It would greatly reassure the local residents as well.

(6) The Draft EIS lacks of detail about groundwater quality, justifying the inclusion of extensive groundwater monitoring in the WPDES permit.

The permit requires groundwater monitoring wells in only two fields among the many that make up the 5,631 spreadable acres, without any rationale in the Draft EIS as to why only two are adequate. Groundwater monitoring wells in only two fields will not give adequate notice when groundwater contamination occurs. The department must require a groundwater monitoring well in every field where any portion of the field is less than 24 inches to groundwater, and the Department, not the applicant, must to specify the locations.

The Draft EIS finds that there are strong downward gradients in western Fond du Lac County that “are a concern” because “contamination can be drawn quickly into the lower sandstone” from which many private and public wells draw drinking water. Draft EIS at III-16. In spite of this, the Draft EIS recommends only that that Rosendale Dairy “inventory” all wells near their operations, Draft EIS at IV-5, and that residents be given “information on DNR well testing recommendations and well inspections.” Draft EIS at IV-16; IV-19.

The permit, if issued, must require that all wells within two miles be inventoried and tested by Rosendale Dairy, at Dairy, not landowner, expense, before operations begin, in order to establish a baseline. It should also require that the applicant re-test the same wells periodically and if they are found to be more contaminated than in the baseline the applicant should be required to stop spreading on any fields up gradient of the contaminated well and to remedy the situation to assure clean drinking water.

(7) The Draft EIS analysis of the potential to water quality at the production area is inconsistent and inadequate.

According to the Draft EIS there are no soil borings available to determine depth to groundwater or bedrock at the production site prior to construction of the storage lagoons. Draft EIS at. I-9, I-24. The Draft EIS is inconsistent regarding soil borings: at pages I-9 and I-24 the Draft EIS states that there were no soil boring done prior to construction of the production area. However, at page III-30 it states that soil boring logs were provided along with plans and specifications. Without the necessary soil borings there is no way to independently confirm that the standards of NRCS 313 are met. Those standards require three feet of clearance over groundwater.

The inconsistency continues on page III-33, where the Draft EIS states specifically “no boring logs showing depth to water have been provided.” There is no indication of what basis the department has for confirming the depth to groundwater other than the statements of the applicant; there has been no independent confirmation.

At the public hearing held January 22 a different story was told, alleging that some 250 pits had been dug prior to construction. Neighbors report never having seen that work being done. More importantly, that information is completely inconsistent with the EIS, undermining the public’s confidence that the Department’s environmental analysis is reliable.

(8) The NMP does not provide adequate information on a field-by-field basis to prevent inadvertent application of manure and process wastewater to unsuitable areas.

Wis. Admin. Code § NR243.14(4)(a) provides that if manure or process wastewater is land applied within a Surface Water Quality Management Area (SWQMA) the WPDES permittee may choose one of several options, all of which require precise knowledge of the part of the operator of the application equipment as to where he is on the land. Among the options is a prohibition on applications within 25 feet or, alternatively, 100 feet of a navigable water or

wetland, depending on other selected practices. Wis. Admin. Code § NR 243.14(4)(a) 1., 2. and 5.

Condition 1.5.1 of the Draft Permit provides that manure or process waste water may not be applied on areas of a field with a depth to groundwater or bedrock of less than 24 inches, within 200 feet of a direct conduit to groundwater, within 200 feet of a private well, or within 1000 feet of a community well. Compliance with those limitations, and compliance with the Rosendale Dairy NMP, requires a precise knowledge of where the equipment is in the field at all times. Certainly one of the best management practices now available is the use of GPS systems and precision farming practices that permit the operators of spreading equipment to know exactly where they are on a field at any time. Such a system would reduce the possibility of operator error that could result in the application of manure and process wastewater to portions of fields where application is prohibited by the permit, by Standard 590, or by NR 243 because of conditions such as a shallow depth to groundwater. Although this is an accepted, if not required practice in some other jurisdictions, the Draft EIS fails to provide any analysis of whether this technology would help protect the environment.

The NMP does not appear to include any program for training those who will apply the manure in the fields. Other than the bald assertion that manure will not be spread on soils with shallow bedrock and will be prohibited near sensitive features, there is no discussion of how the dairy will assure that equipment operators will not inadvertently or unknowingly do so. The maps in the NMP clearly do not provide sufficient detail and are not at a scale adequate for equipment operators to accurately remain a precise number of feet away from a wetland, soils with less than 24 inches to groundwater, saturated soils, private wells, or subsurface drains that discharge to waters of the state.

In California, NRCS Standard 590 identifies “GPS controlled applicators or precision farming techniques” as an acceptable method of applying nutrients. PEPL requests that the Final WPDES permit, if issued, include a requirement for GPS systems in the application equipment. PEPL also requests that a permit, if issued, include detailed operator training plan be prepared and monitored.

IV. Essential Clean Water Act and State WPDES Program Requirements are Missing or were Not Considered in the Draft Permit

As explained in this section, the Department has fundamentally failed to comply with several essential Clean Water Act requirements for permit issuance in this case. These failings render the Draft Permit illegal under the act and serve on their own as basis for permit denial or, in any case, re-drafting and re-noticing of the Draft Permit following completion of the necessary regulatory review.

- (A) CAFO Permits under NR 243 are WPDES discharge permits, and therefore subject to all of the WPDES permit program requirements under Wis. Stat. 283.

Although the DNR operates the CAFO WPDES program almost exclusively pursuant to Wis. Admin. Code § NR 243, CAFO permits are nonetheless, like other WPDES permits, subject to the rest of the NPDES/WPDES statutory and regulatory requirements of state and federal law. In drafting the Rosendale WPDES Permit, the DNR has failed to consider several regulatory provisions which govern the WPDES program.

It is important to recognize that the Draft Permit is not a “no-discharge” permit. In fact, the Draft Permit (and associated state law incorporated therein) explicitly or implicitly authorizes a new discharge to waters of the state in at least three ways. First, Condition 1.1 of the Draft Permit authorizes the discharge of manure or process wastewater directly to navigable waters from the production area if (a) precipitation causes an overflow from a containment or storage structure; (b) the containment or storage structure is designed, constructed, and maintained to contain all the manure and process wastewater from the operation, including the runoff and direct precipitation from a 25-year, 24-hour rainfall event (assumed to be 4.6 inches for Fond du Lac County); (c) the production area is operated in accordance with certain requirements in NR 243.19; and (d) the discharge complies with groundwater and surface water quality standards.

Second, Wis. Admin. Code § NR 243.12(1)(d)3., note, recognizes that CAFOs discharge to waters of the state, both from manure storage facilities and from land application sites. That section states:

Due to the extent of water resources in the state, it is the department’s position that if the manure or process wastewater from a CAFO is land applied to sites in Wisconsin, pollutants from the manure or process wastewater will reach waters the state either via leaching to groundwater or surface runoff. Also, it is the department’s position that storage facilities constructed at or below grade will have some pollutant discharges to groundwater.

Third, as the Wisconsin NRCS Technical Standard 590 recognizes, even compliance with that standard (which forms the basis for CAFO nutrient management plans) may allow the discharge of nutrients to waters of the state. The 590 Standard is designed to maximize crop production; it only minimizes – and does not prevent – nutrient pollution entry to surface or groundwater, and implementation of the 590 Standard “may not eliminate nutrient losses that could result in a violation of law.”¹⁹ The Draft permit at Condition 1.5.1 allows discharges of manure or process wastewater by a CAFO from land application sites during certain precipitation events when the terms of the (NRCS 590-based) nutrient management plan and other permit conditions are met.

Portions of the Draft EIS recognize that CAFOs do, in fact, discharge to navigable waters or groundwaters on a regular basis. *See, e.g.*, Draft EIS at III-20 (“Land-applied animal waste, or leaking manure storage lagoons are potential sources of contamination to groundwater in Fond du Lac County”); IV-2 (“CAFOs are not allowed to discharge pollutants from the CAFO

¹⁹ Natural Resources Conservation Service, Conservation Practice Standard 590 (Nutrient Management), *available at* <http://efotg.nrcs.usda.gov/references/public/WI/590.pdf> and incorporated into the Draft Permit at Condition 1.5.

production area . . . to navigable waters, *except* under certain conditions where additional protection for surface waters is provided.”).

The Draft Permit, therefore, is far from a “no-discharge” permit because it recognizes, and indeed authorizes, the discharge of pollutants to waters of the state by the permittee. Once this authorization to discharge is recognized, certain mandatory steps must follow in order to meet the requirements of the Clean Water Act.

(B) The DNR failed to perform an antidegradation review to determine whether the new discharge authorized from Rosendale Dairy will lower water quality in the receiving waters.

NR 102.05(1) and NR 207 comprise the antidegradation policy and implementation procedures for Wisconsin. Collectively, these regulatory provisions implement the Clean Water Act’s antidegradation policy, 33 U.S.C. § 1313(d)(4)(A) and (B), the purpose of which is to “keep clean waters clean” and prevent unnecessary lowering of present water quality. There are no exemptions from the antidegradation review, for CAFOs or any other category of point source.

Wis. Admin. Code § NR 207.03(5) provides that, for new or increased discharges to the Great Lakes System, the Department must establish effluent limitations using the procedures in sections NR 207.04 and 207.05. NR 207.04 requires certain submissions from the permit applicant that appear to have not been submitted by Rosendale Dairy, including:

- Assessment of existing treatment capability (NR 207.04(1)(a));
- Effluent quality data and background water quality data sufficient to determine whether a significant lowering of water quality will occur (NR 207.04(1)(b));
- If the new discharge will lower water quality, a demonstration by the applicant that the new discharge will accommodate important economic or social development (NR 207.04(1)(c));
- If the new discharge will significantly lower water quality, a demonstration by the applicant that the lowering of water quality cannot be prevented by using cost-effective pollution control alternatives (NR 207.04(1)(d)).

Based on these submissions from Rosendale Dairy, DNR then must make certain determinations, including a determination of the appropriate effluent limitations given the likely impacts to water quality and the ability of the applicant to deploy alternative treatment technologies. Because this mandatory antidegradation review did not occur, the Permit must be denied and may only be re-drafted and re-noticed after such review takes place.

(C) The Department failed to include water quality-based effluent limitations as necessary to ensure compliance with water quality standards.

Both state and federal law require that all WPDES permits include water quality-based effluent limitations (“WQBELs”) when needed to ensure compliance with applicable water

quality standards, yet DNR has failed to include any such limits in the Draft Permit. State law provides:

More stringent limitations. The department shall establish more stringent effluent limitations than required under subs. (2) and (4) [i.e., technology-based limits for various categories and classes of point sources] and shall require compliance with such water quality based effluent limitations in any permit issued, reissued or modified if these limitations are necessary to meet applicable water quality standards, treatment standards, schedules of compliance or any other state or federal law, rule or regulation.

Wis. Stat. § 283.13(5). These WQBELs are a necessary addition to the technology-based requirements included in NR 243, for they allow the Department to take the water quality needs of the specific receiving waters into consideration when crafting WPDES permit terms and conditions. The Draft Permit does not include any such WQBELs, nor is there any information in the record to suggest that the Department even considered the receiving waters into which Rosendale Dairy will discharge when crafting the Draft Permit's terms and conditions.

We note that the Draft EIS includes helpful information that could guide the Department to craft effective WQBELs; at the very least, this information shows that there is a need for more stringent effluent limitations in the Draft Permit to protect the already-impaired surface waters where Rosendale Dairy's discharges will occur. The Draft EIS explains that many of the waters in the region of Rosendale Dairy are impaired for a variety of pollutants, notably phosphorus and sediment. *See, e.g.*, Draft EIS at III-11 (“This stretch of the [Lower Fond du Lac River] is subjected to heavy sediment and nutrient loads from upstream rural runoff pollution . . . resulting in poor water quality.”); *id.* at III-14 (noting that the various tributaries to Big Green Lake are “on the list of Impaired Waters due to degraded habitat from sediment and/or phosphorus coming from runoff pollution” and that Lake Winnebago has “severe algae blooms resulting from nutrient enrichment” and is on the list of Impaired Waters for “contaminants in fish, degraded habitat, and nutrient enrichment.”); *id.* at III-15 (describing the Rock River as having “degraded habitat and poor water quality from urban and rural runoff pollution of phosphorus and sediment.”).

How the Department overlooked this information in the Draft EIS is unclear, but the failure to include WQBELs as necessary to meet water quality standards in these receiving waters must be corrected.

V. The Draft Permit fails to meet the requirements of NR 243 and therefore must be modified or denied.

In several respects the Draft Permit itself fails to meet requisite state standards under NR 243, and in other respects the permit application (including the NMP) submitted by Rosendale Dairy fail to demonstrate that it can comply with the standards. Where the Draft Permit does not meet the requirements of NR 243, it must be modified to correct those errors. Where the Draft Permit application submitted by Rosendale Dairy fails to meet state standards, those failures render the permit application incomplete and thus cannot be the basis for permit issuance. *See,*

e.g., Wis. Admin. Code § NR 243.12(2)(6) (requiring, as part of a CAFO permit application, a “complete nutrient management plan that meets the requirements of s. NR 243.14.”). The Department should deny the permit until such time as a sufficient application is received and a sufficient permit can be drafted.

- (A) Rosendale Dairy has failed to adequately identify tile lines, inlets, and other direct conduits to surface and groundwater as required by NR 243.14(2)(e).

Wis. Admin. Code § NR 243.14(2)(e) requires the permittee to “identify as part of its nutrient management plan, to the maximum extent practicable, the presence of subsurface drainage systems in fields where its manure or process wastewater is applied.” This requirement is obviously critical, as under some circumstances tremendously large amounts of water pollution can travel through a tile line directly to surface waters.

In addition, certain other regulations governing the land application of manure from a CAFO, which apply to and are binding upon Rosendale Dairy, place restrictions upon the land application of manure in surface water quality management areas (SWQMAs). Wis. Admin. Code § NR 243.14(4). A SWQMA is defined to include, *inter alia*, “[t]he area within 300 feet of conduits to navigable waters.” *Id.* § NR 243.03(66)(d). Regulations restricting the application of manure in SWQMAs inherently require that the permittee be aware of the existence and location of all SWQMAs.

The NMP submitted by Rosendale Dairy does not fully identify the location of all SWQMAs on lands where the application of manure is planned, nor has Rosendale Dairy identified “to the maximum extent practicable, the presence of subsurface drainage systems” in those fields where the dairy intends to apply manure. The NMP submitted by Rosendale Dairy to the DNR in support of its application for a WPDES Permit states in part as follows:

After an *exhaustive search*, subsurface drainage system maps have not been located, and to the plan writers’ knowledge do not exist. Farmer and plan writer will work to map these fields as tile lines and surface inlets are identified. More information will be gathered on location, length, and depth of tile lines and added into future plan updates. These are important to locate because of potential to transfer nutrients into ground or surface waters.

Rosendale Dairy NMP at Section 6.1 (emphasis added). So far as the record reveals, Rosendale Dairy has *not even begun* to search for drainage system maps or drain tiles themselves, for this information is readily available from a number of sources.

A statement by Timothy Thiel, a resident of Ripon, WI²⁰, shows the ease by which, through observation and record inspection, the extensive network of drain tiles, culverts, ditches, drain pumps, and other direct conduits to navigable waters can be readily identified and mapped. Mr. Thiel uncovered this information using very “practicable” methods – and by no means has

²⁰ The Statement of Mr. Thiel is included as Attachment 22 to these comments.

he yet conducted an “exhaustive search” to locate them all.

Mr. Thiel’s research generated three maps²¹ that clearly show just some of the many direct conduits to navigable waters that extend across, and under, the fields where Rosendale Dairy plans to spread manure. It is incumbent upon Rosendale Dairy to make further efforts to identify these sources of water pollution, map them (note that the lack of available maps does not conclude the need for further research), and ensure that water quality is protected. Further review by either the Department or Rosendale Dairy will bring to light not only the many drain tiles but also the many direct conduits to navigable waters (and, by extension, SWQMAs) in the region.

Supporting Mr. Thiel’s statements, the Draft EIS further recognizes the many small surface conduits and channels that exist throughout the area of intended manure spreading. Page III-15 of the Draft EIS states:

The [Upper Rock River] watershed has numerous small unnamed drainages flowing through agricultural fields and wetlands. Many of these stream channels have been ditched and straightened in an effort to improve agricultural suitability of the surrounding landscape. This level of disturbance severely degrades aquatic habitat. These channels provide a delivery network for transporting runoff pollution to the larger water bodies in the watershed.

Unless and until Rosendale Dairy can determine the location of the subsurface drainage systems and other channels connecting the fields where manure will be applied to the surface and groundwaters of the region, the permit application is incomplete and the Draft Permit must be denied. Furthermore, the

(B) The Draft Permit contains insufficient manure, process wastewater, and soil sampling requirements.

Condition 1.6.2 of the Draft Permit requires Rosendale Dairy to “collect and analyze soils from fields used for manure or process wastewater applications at least once every four years.” This sampling rate is the minimum sampling required by NR 243 and NRCS Standard 590; DNR has ample authority to require more frequent sampling in the Draft Permit, including sampling for parameters other than phosphorus, nitrogen, and percent solids. Wis. Admin. Code § NR 243.19(c). The sampling included in the Draft Permit is not sufficient to ensure the protection of water quality from land application by Rosendale Dairy. Given the shallow soils and ease with which nutrient contamination can occur, the Department should revise the Draft Permit to require soil sampling on an annual basis.

(C) The Draft Permit contains insufficient surface and groundwater monitoring requirements.

²¹ Included as Attachments 12, 13, and 14.

The DNR also has the authority to require sampling of surface and groundwater monitoring of the sites where land spreading of manure will occur as well as sampling of surface waters immediately downstream of manure application sites. Such sampling may, in fact, be necessary to ensure that water quality standards will be met by Rosendale Dairy's discharges of manure and wastewater.

DNR derives authority to require water quality monitoring from several statutory or regulatory provisions. First, the Department has broad authority under Wis. Stat. § 283.31 to include in WPDES permits “[a]ny more stringent limitation” necessary to comply with water quality standards or groundwater protection standards. Wis. Stat. § 283.31(3)(d) and (f). In fact, the DNR *must* include such limitations where necessary. The term “limitation” is not defined, but it clearly encompasses surface water quality monitoring necessary to ensure compliance with applicable water quality standards. This authority enables the Department to make site-specific changes to what would otherwise be standard permit conditions in order to protect local water resources. Where the potential for surface or groundwater contamination is severe, as it is in this instance, water quality monitoring is a necessary component of the WPDES permit so as to ensure (and verify) compliance with ground and surface water quality standards.

Second, the Department may exercise its authority to protect groundwater quality pursuant to Wis. Admin. Code § NR 140:

The department may take any actions within the context of regulatory programs established in statutes or rules outside of this chapter, if those actions are necessary to protect public health and welfare or prevent a significant damaging effect on groundwater or surface water quality for present or future consumptive or nonconsumptive uses, whether or not an enforcement standard and preventive action limit for a substance have been adopted under this chapter.

Id. at § NR 140.02(4). That application of that regulatory authority extends “to all facilities, practices and activities which may affect groundwater quality and which are regulated under” various statutes, including the WPDES program’s authorizing statute, Wis. Stat. 283. Wis. Admin. Code § NR 140.03. This provision, without question, covers the CAFO permitting program.

The Draft Permit at Condition 2.8 includes a vague requirement for Rosendale Dairy to craft a “groundwater monitoring plan” for the wet fields upon which it plans to apply manure. Rosendale Dairy is given the discretion to select two sites for this plan. A mere 2 sites to cover several thousand spreadable acres cannot conceivably be described as monitoring “at locations and depths sufficient to yield groundwater samples that are representative of background water quality at or near the facility, practice or activity.” Wis. Admin. Code § NR 140.20. At a minimum, the Department must require groundwater quality monitoring at each and every field that is identified as containing wet soils in the Rosendale NMP.

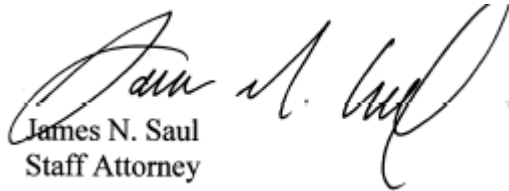
VI. Conclusion

The Draft EIS is fundamentally inconsistent and flawed. It fails to develop, describe and evaluate obvious reasonable alternatives, including those that might avoid all or some of the adverse environmental effects of the proposed action. Wis. Stat. § 1.11 and Wis. Admin. Code § NR 150.22(2)e, and fails to analyze in a detailed manner the myriad potential environmental effects of the action, including impacts to air and water quality. The Final EIS must address the issues presented in these comments in order to meet the minimum requirements under WEPA.

The Draft Permit must be denied because, in conjunction with the flawed NMP and supporting documents in the record, it illegally authorizes a new discharge to impaired waters and fundamentally fails to ensure that water quality standards can be attained. At a minimum, the Draft Permit must be re-noticed so that public participation opportunities can be enjoyed by those citizens concerned with water quality and who must be given opportunity to review a complete, and legally sufficient, permit application. In addition, the Department must strengthen the Draft Permit requirements so that the ground and surface waters near Rosendale Dairy can be protected.

Sincerely,

MIDWEST ENVIRONMENTAL ADVOCATES, INC.


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