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Lake Erie has the Great Lakes Warmest, Shallowest, Fishiest Waters

June 13, 2023

Ohio Dept of Agriculture
Van Erk CAFO Permit Comments
A.B. Graham Building, 8995 East Main Street
Reynoldsburg, Ohio 43068

Comments Sent via email along with attachments: lepp@agri.ohio.gov

Lake Erie Waterkeeper(LEW) is a licensed member of the International Waterkeeper Alliance. LEW's mission is for drinkable, swimmable waters in the Lake Erie Watershed with advocacy, education, litigation, and science. LEW's primary focus for almost twenty years is for source reductions that cause harmful algae. LEW has long been an advocate for nutrient TMDL and funding accountability as tools to help achieve the 45% Dissolved reactive phosphorus harmful algae source reduction goals. The only growing changing source is from continuing growth in Confined Animal Feeding Operations (CAFO's) including dairy cows, hogs, poultry and now cattle in the western basin of Lake Erie. The switch from pasturing untreated 'solid manure' land application from hogs and cows to untreated liquid manure amounting to over one billion gallons annually from hogs and cows is a significant change impacting runoff to streams and Lake Erie. The harmful algae started in the late 1990's when CAFO dairy operations began in the Maumee River watershed. Studies of the western Lake Erie watershed show that: Untreated land applied liquid manure will runoff into field tiles, ditches and streams; Antibiotics in water increase when CAFO's increase; and continuous monitors show that DRP increases when CAFO's increase. How permitted and unpermitted CAFO manure runoff from manure, especially liquid, is or is not managed and treated in the western basin of Lake Erie continues to be a focus for needed phosphorus reductions to reduce harmful algae in Lake Erie. The permit commented on here is for an industrial digester that will receive 183 million gallons of liquid manure annually to create methane. The waste from this process is both a 'solid' and liquid digestate that may be more bioavailable when applied to fields is the subject of these comments. LEW has hired an experienced engineer with extensive CAFO knowledge to address concern over this new industrial manure digester and is submitting these and attached comments.

In the Van Erk PTI and PTO there is a fatal flaw in what is submitted. The Ohio Department of Agriculture(ODA) fact sheet states that this PTI and PTO is part of the existing Van Erk Dairy CAFO for permit for 2,000 dairy cows in four freestall barns with lagoons that hold 36.4 millon gallons of liquid manure, when in fact none of this manure is proposed to be used in the proposed digester, and the digester plans show none of the existing CAFO site, lagoons etc. Also, it is reported that Van Erk has a digester on the existing CAFO site, that is not shown or referenced anywhere.

The Van Erk Dairy PTI and PTO is a new anaerobic digester facility separate and apart from the existing permitted Van Erk CAFO Dairy facility. The new facility will not be accepting any of the manure from the existing Van Erk CAFO, but rather will solely receive liquid manure from outside sources not under its control, therefore this a new industrial anaerobic digester facility not connected to the existing CAFO, must have industrial facility permits including wastewater, air etc. ODA must deny the PTI and PTO permit because of two distinctly separate and unconnected operations – one a 2000 head dairy CAFO and one an industrial digester that accepts 41.9 million gallons and250 tons of solids annually. The Van Erk Nutrient Management Plan(NMP) in the fact sheet is for the 2000 dairy cows and that manure will not go to the new offsite digester facility.

What is also of great concern is the basis for determining the amount and bioavailability of the phosphorus in the manure after the digester process. The references for the source of the phosphorus amounts are 'other' with no data or other information. And the failure of this industrial operation to have an air permit.

The following are detailed comments on the permit for the Van Erk PTI and PTO. In addition to the above, the major problems with the proposed PTI and PTO permit include:

1. **Industrial wastewater permit.** The Manure Digester wastewater management system should be regulated under the Ohio Environmental Protection Agency (Ohio EPA) as an industrial facility. The digester receives wastewater from facilities that are not under the direct control of the owner and/or operator of the digester and thus neither the Paulding Digester nor the GreenTop Digester is a private digester but a commercial digester. The digester project should have an industrial wastewater permit for non- discharging facilities on an NPDES permit if the design proves to have a surface water discharge element during review.

2. **Air quality permit.** The Manure Digester air emissions should be regulated under the Ohio EPA. The proposed manure digester projects will create biogas that includes methane, CO2, ammonia, hydrogen sulfide, and other trace volatile organic compounds (VOCs) – all of which are regulated air pollutants under the Clean Air Act. The digester projects should each have air permits for the air emissions from: (a) digesters, (b) the biogas upgrade system, (c) the boiler, (d) emergency generator, (e) the solid digestate dryer, and (f) flare. The facility-wide air emissions should be evaluated for total potential to emit to ascertain if the facility would trigger New Source Performance Standards (NSPS) and Title V major source permit and control technology requirements.

3. **Federal Stormwater Construction Permit** – how does the stormwater pond and drainage swales proposed coincide with construction stormwater controls that meet the federal stormwater construction general permit requirements?

4. **Compliance history.** The PTI/PTO does not include known compliance issues related to BioTownAg digester in Reynolds, Indiana which is owned/operated by Green Rock Energy Partners, LLC. Considering Green Rock Energy Partners, LLC has operated a manure digester, the absence of information about the Indiana facility is peculiar. ***See attached document titled "Information about Applicant and Members".***

5. **Operational Record Keeping Requirements for Digester.** On page 414 of 459, the Van Erk/GreenTop Acres PTI/PTO purports to list all required records for the permitted facilities (dairy and two digesters) but does not include forms that could be used to monitor the compliance of the proposed GreenTop Acres, LLC manure digester and the existing mixed-waste anerobic digester at the Van Erk Dairy.

Incoming manure wastewater/outgoing digestate. There are no forms included that could be used to keep track of incoming volumes of manure wastewater from each contributing dairy and the volume of digestate returned to those same dairies.

Inspection of digester structures, solid/liquid separators, and solid digestate storage. There are no forms included that identify what parts of the digester structures should be inspected for integrity, leakage, overtopping, and solids accumulation.

Anaerobic digestion efficiency. There are no forms included that could be used to track traditional anaerobic digestion operating criteria, such as volatile solids loading rate, pH, holding time for complete digestion, biogas production, and sludge removal.

Digestate solids removal and proper disposal. The applicant claims that only the liquid portion of the digestate will be returned to the contributing dairies and the solid portion would be dried on-site, stored, and baled in anticipation of transferring to third parties for distribution and utilization. There are no forms included that could be used to track the amount of solids (a) removed from the digestate, (b) processed through the dryer, (c) stored in the storage barn, and (d) removed from the property to qualified vendors of the dried digestate solids.

6. Contributing Dairies to the Digester Project. The PTI for the Van Erk Dairy GreenTop Acres, LLC manure digester proposes to receive dairy manure wastewater from several 'contributing dairies' located in Indiana that are (a) not properly named and
(b) when identified should be investigated for compliance history prior to allowing out-of- state wastes to be brought into the Lake Erie watershed. The five generically named "Indiana Dairy" information was found in email communications between the applicant and ODA as follows:

Indiana Dairy Monroe Township Adams County IN Indiana Dairy Nottingham Township Wells County IN Indiana Dairy Liberty Township Wells County IN Indiana Dairy Nottingham Township Wells County IN Indiana Dairy Jefferson Township Huntington County IN

In addition to the five Indiana dairies, there are seven Ohio dairies to be considered as 'contributing diaries' including:

Van Erk Dairy: Contributing Facilities

Dairy	Township	County	State
Sugar Lane	Tully	Van Wert	OH
Convoy	Tully	Van Wert	OH
Wildcat	Benton	Paulding	OH
Gina Dairy Dairy	Liberty	Van Wert	OH
Indiana Dairy	Monroe	Adams	IN
MVP Dairy	Center	Mercer	OH
Heartland Holdings, LLC	Hopewell	Mercer	OH
Indiana Dairy	Nottingham	Wells	IN
Indiana Dairy	Liberty	Wells	IN
LDT Keller Farms, LLC	Granville	Mercer	OH
Indiana Dairy	Jefferson	Huntington	IN
Indiana Dairy	Nottingham	Wells	IN

All the contributing dairies asked to be kept out of the PTI/PTO application and the ODA complied. Did ODA coordinate with IDEM to determine if the five Indiana dairies are in compliance with Indiana CFO regulations? Did ODA determine if all the Ohio dairies are in compliance with their PTI/PTO manure management plans? Did ODA compare the manure characteristics presented in the PTI/PTO to manure analysis from each of the contributing dairies?

See attached document titled "Contributing Dairies to GreenTop Acres (Van Erk Dairy) Digester.

7. Nutrient Accumulation of P2O5 at the proposed digester. The applicant claims that digestate liquids will be returned to the contributing dairies but does not claim to send the digestate solids to those dairies. Instead, digestate solids will be processed on site and then removed through a 'distribution and utilization' process. From page 215 of 459 of the Van Erk Dairy/GreenTop Acres Digester PTI/PTO:

Summary of Manure To Be Land Applied under the Control of the Facility

Annual Total N Applied (lbs): 356,604
Annual Total P_2O_5 Applied (lbs): 201,760
Annual Total K_2O Applied (lbs): 411,85
Total Acres under Control of the CAFF: 3,373

Summary of Manure To Be Distributed to Others through Distribution and Utilization

Annual Total N Applied (lbs): 2,522,880
Annual Total P_2O_5 Applied (lbs): 1,399,410
Annual Total K_2O Applied (lbs): 2,953,580

The amount of P2O5 that must be 'distributed to others' is 7 times more than the amount of P2O5 that the host dairy produces and applies to crop land as follows:

1,399,419 lbs P2O5 solid digestate / 201,760 lbs P2O5 dairy manure = 6.9

GreenTop Acres Dairy Digester Mass Balance for phosphorus shows that only half of the phosphorus is returned to the contributing dairies in the digestate liquid – the other half is in the digestate solid:

Digester inputs = 3834 lbs P2O5/day

Digestate liquid = 1944 lbs P2O5/day Digestate solids = 1890 lbs P2O5/day

GreenTop Acres Digester 'contributing dairies' would receive half the P2O5 that they sent to the digester.

1890 lbs P2O5/day x 365 days/yr = **689,850 lbs P2O5/year** that the digester operator must dispose of and not the dairy that generated it.

From the PTI/PTO documentation, it appears that the burden of proper disposal of phosphorus is being transferred from the contributing dairies that generated it to the operator of the digester (GreenTop Acres, LLC).

8. Digestate characteristics not substantiated. The nutrient content of the digestate is based on an unnamed digester. Did ODA investigate which digester was relied upon and whether the design, construction, operation, and maintenance of that digester is similar to that proposed for the GreenTop Acres, LLC digester at Van Erk Dairy?

9. Signature and certification statement. The signature and certification statement for the GreenTop Acres, LLC (Van Erk Dairy and Anaerobic Digester) was signed by

Craig Stoller on 04-05-2022. The original PTI/PTO was date stamped received by the ODA on December 19, 2022. Numerous documents were provided after the certification signature date in response to ODA review comments.

Question: Are all those emailed amendment documents included in this 459 page PTI/PTO document? For example, the engineering drawings are NOT included.

Question: Did ODA require a new signature and certification after all the amended documents were compiled into the final PTI/PTO? Where is that signature page?

10. Permit Level Drawings are not Final Construction Level Drawings. The engineering drawings provided in the PTI for the anaerobic digester and biogas conditioning facility are clearly labeled "permit level drawings" and "not for construction". The PTI for the digester system does not include an adequate narrative description of the function and limitations of each digester system component that would allow the public (and ODA) to understand how and where millions of gallons of manure wastewater will be handled safely and protect public health and the environment.

Question: Does ODA require the submittal of final construction drawings prior to construction of the facility and what happens if the final drawings are different than the permit-level drawings?

459 page PTI/PTO does not include engineering drawings. The PTI for the Van Erk Dairy/GreenTop Acres, LLC Digester does not include the engineering drawings, but they were submitted to ODA by email on 06-16-2022. The set of drawings includes 14 sheets (including cover sheet) that include extremely minimal information about the components of the digester system – basically rectangles and squares with footprint dimensions and light tan lines suggesting the location of force mains used to transport wastewater between the components.

The Subsurface Hydrogeologic Report included in the PTI/PTO refers to sheet 2 of the engineering drawings dozens of times as that is the drawing that shows the cross- section boring logs taken to determine subsurface materials beneath all waste storage structures. Without access to the engineering drawings, the general public reading just the 459 page PTI/PTO would not fully understand the Hydrogeologic Report.

Question: Why are the engineering drawings not included in the public noticed PTI?

11. Emergency Response Plan does not mention the anaerobic digester. The Emergency Response Plan forms provided by the ODA are focused on livestock production facilities and typical emergencies related to wastewater spills or barn fires. The applicant did not supplement the Emergency Response Forms to include information about the fire and safety issues related to the anaerobic digester (contained biogas under concrete roof), the biogas upgrade facility, the flare, the network of piping biogas from the digester, and the components of raw biogas that includes ammonia and hydrogen sulfide.

Name of facility in Emergency Response Plan. In the Van Erk Dairy/GreenTop Acres, LLC PTI/PTO Emergency Response Plan, the name of the facility was scratched out (GreenTop Acres, LLC) and someone wrote "Van Erk Dairy" in its place. Who did that? When and why? Why wouldn't the names of the facility be consistent throughout the PTI/PTO?
Underground Pipeline Right-of-Way. The Emergency Response Plan does not acknowledge the right-of-way for the two buried pipelines that cross the property diagonally. The PTI/PTO does not say what is in those two pipes. The engineering drawings sent to ODA on June 16, 2022 (and that are not in the PTI/PTO) indicate that the right-of-way is 78 feet wide and there are two buried pipes. No other information is provided.

12. Above grade wastewater storage. The proposed triangular shaped digestate storage pond is proposed to contain at least half of the maximum operating level above grade. Why would ODA allow for the above grade construction and what precautions will be taken to prevent a catastrophic loss of wastewater should the berm be breached?
If just four feet of the maximum operating depth occurs above ground level, then the volume of wastewater at risk can be calculated using the depth to volume chart on Sheet 4 of 14 as follows:

6,042,652 – 4,671,740 = **1,370,912 gallons at risk for catastrophic breach**

13. Groundwater monitoring should be required. All the water wells in the immediate vicinity of the proposed digester are used for either domestic drinking water or water for the dairy and drilling logs indicate limestone bedrock at 27 feet below ground surface.
Soil borings G1 to G4 made below the location of the proposed digester show groundwater encountered within 10 feet of the proposed bottom of the digester that rose up in the borehole to depths equal to the bottom of the digester.
The solution provided in the PTI/PTO is to create a "water tight seal" on the concrete floor of digester and a four foot compacted soil liner on the digestate wastewater storage pond.
Water-tight seal. Claiming a water-tight structure for the digester is not "additional design criteria' as they should have a water-tight structure in the first place. The digester dimensions are proposed to be 289 feet by 348 feet or 100,572 square feet of concrete. The reliance on there being *no cracks and no leaks* during the operational life of such a massive concrete structure is completely unrealistic.
Question: Why didn't the ODA require groundwater monitoring or even a more extensive leachate collection system under the digester to make sure wastewater leakage from the digester is (a) discovered and (b) captured and directed to the surface for proper disposal.
Four foot compacted soil liner. Contrary to the statements made in the Subsurface Hydrogeologic Report, the proposed compacted soil liner *will not* be 4 feet thick – but instead 3 feet thick on the inside abovegrade berm and 1 foot thick on the belowgrade berm and bottom of the storage pond. The bottom 1 foot thickness is proposed to be 6 inches of existing subsurface soils scarified and recompacted with an additional 6 inches added to that to create only 1 foot of liner with a permeability of 1×10^{-7} cm/sec.
Using the NRCS Animal Waste Management Field Handbook, the seepage volume from the digestate storage pond could be up to **469,871 gallons per year at max operating depth.**
Question: By approving the PTI/PTO, does the ODA intend to allow shallow groundwater to be contaminated with nitrates and other pollutants of concern without any reliable method of detection and monitoring?
Question: Why didn't ODA require groundwater monitoring upgradient and downgradient of the digestate storage pond to (a) detect groundwater contamination from liner seepage and (b) allow for interception of the contaminant plume before it travels off-site?