

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 9
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June 29, 2015

Dear Sir or Madam:

**Responsiveness Summary
Part 360 Solid Waste Management
Facility Permit Modification – Additional Fields in
Marilla and Bennington
Quasar Energy Group/Sustainable BioElectric, LLC
Niagara/Buffalo BioEnergy Land Application Sites
DEC No. 9-9909-00112/00001**

Thank you for expressing your interest in the above-referenced Part 360 Solid Waste Management Facility Permit Modification application for the addition of farm fields in the Towns of Marilla and Bennington, in Erie and Wyoming County, respectively, to the existing permit for the land application of digestate from the Niagara BioEnergy and Buffalo BioEnergy Anaerobic Digestion Facilities. After careful consideration of the application and your comments, the New York State Department of Environmental Conservation (the Department, NYSDEC or DEC) has made a determination to issue a Solid Waste Management Permit Modification for the addition of the farm fields in accordance with applicable provisions of the Environmental Conservation Law (ECL), other applicable policy and regulation, and consideration of the effects that the proposed action will have on the natural resources of the State and the general welfare of the public. The issued permit can be viewed on the Department's website at <http://www.dec.ny.gov/chemical/94368.html>. This letter summarizes and responds to the comments received from the public as a result of the publication of the Notice of Complete Application for the project.

Many questions and concerns have been raised regarding the anaerobic digestion process as well as the land application of the resulting digestate. The attached fact sheet (also found at <http://www.dec.ny.gov/chemical/94368.html>) was prepared by the Department to provide additional information on the anaerobic digestion process and the various approved and proposed Quasar projects in NYSDEC Region 9. Currently, two subsidiary companies of Quasar Energy Group have permits to construct and operate anaerobic digestion facilities. The Niagara BioEnergy Anaerobic Digestion Facility is located in the Town of Wheatfield and the Buffalo BioEnergy Anaerobic Digestion Facility is located in the Town of West Seneca. The anaerobic digestion facilities are designed to convert certain approved waste products into biogas, which is then converted into electricity. In addition to biogas, the digesters also produce a digested liquid material (digestate) which can be used as a source of nutrients on farm fields. The Trav-Co Farm storage tank has also been permitted to store the digestate during the times of year when it cannot be directly land applied due to frozen ground or other reasons. There is no digester at the site of the Trav-Co Farm storage tank.

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Some concerns were raised by residents that biosolids are being directly accepted at the Trav-Co storage tank or directly land applied, however, this is not the case. Biosolids may only be accepted at the digesters. The term biosolids means sewage sludge that can be beneficially used [360-4.1(B)(4)]. According to the Environmental Protection Agency, agricultural use of biosolids that meet strict quality criteria and application rates, have been shown to produce significant improvements in crop growth and yield. In the case of the Quasar projects, the biosolids, which already meet State and Federal pollutant requirements for land application, will receive further treatment through the anaerobic digestion process at one of the Quasar digesters. Once the digestion process is complete, digestate remains. When land applied, the digestate has agronomic (nutrient) value and can be used to fertilize fields for raising crops.

RESPONSES TO PUBLIC COMMENTS

Concern: Summary of the State Environmental Quality Review (SEQR) Process for the proposed project

Response: Concerns were raised regarding the Department's approach to coordination of the SEQR review. The Department took a more conservative approach with this application and considered it a Type 1 Action under the SEQR regulations, however in a May 7, 2014 letter NYS Department of Agriculture and Markets made a determination that the use of the land included in this permit application for the storage and application of equate (digestate from the Niagara and Buffalo BioEnergy Anaerobic Digestion Facilities) is agricultural in nature. Based upon this determination, the activity covered by this permit application would be considered a Type 2 action under SEQR as an agricultural farm management practice, however, the Department retained the Type 1 designation for this application and prepared and issued a Negative Declaration, but did not coordinate for Lead Agency because the application was for an agricultural activity. Each field that was previously permitted and is currently proposed for land application of digestate was reviewed individually for the presence of regulated resources and other natural resource concerns as part of the SEQR review for this permit modification. The SEQR regulations require that "the entire set of activities or steps must be considered the action" and considering only a part or segment of an action is contrary to the intent of SEQR. In this case, the action is a permit modification for land application on several fields in the Towns of Marilla and Bennington, therefore the review of each individual field was considered in one SEQR review for the entire action. Land application of the digestate may only occur on the reviewed and approved fields. The land application permit is not a blanket permit to land apply digestate on any field in any particular town. Going forward, new land application permits will be addressed as a Type 2 action as an agricultural farm management practice.

Concern: Relationship of state approvals and local approvals for a project, consistency of project with local zoning

Response: Department permits contain language indicating that the permittee is responsible for obtaining all other permits, approvals, lands, easements and rights-of-way that may be required to carry out an activity authorized by a NYSDEC permit. State approvals do not supersede any local approvals required for this project. It is up to the local municipality to determine if the project is consistent with local zoning codes, and if not, whether zoning variances or changes will be granted to allow the project to proceed.

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Concern: Impact on property values

Response: Impacts to property value are principally a local issue which can be addressed through zoning requirements or other measures by the local government. The digested material is ultimately intended for use on approved agricultural fields and the Towns of Marilla and Bennington are agricultural communities.

Concern: Human health and wildlife impacts, impacts on hunting and fishing

Response: New York State has been regulating the practices of storage and land application of biosolids for more than 30 years and has long established standards for pathogen treatment, pollutants limits, and site controls to address the potential human health and environmental concerns associated with these practices. The digestate will meet regulatory requirements that have been set forth based on USEPA's exposure pathways used in the risk assessment process for the land application of biosolids. EPA evaluated the potential for harm to humans and wildlife when establishing the federal regulations that are incorporated into DEC's Part 360 regulations. Through the digestion process, the pathogens will have been reduced to levels that do not pose a threat to public health and the environment when applied according to specified conditions. Additionally, the digested material will be sampled prior to storage and land application and will meet all regulatory standards. Access to the site will be controlled with posted signs and standard operating procedures will be in place to protect human health and wildlife.

Concern: Proximity of fields to homes with drinking water wells and to surface waters, potential ground water and surface water impacts

Response: Nitrogen and phosphorus are the primary water contaminants from biosolids. Both nutrients are necessary for plant growth and can be controlled in an environmentally sound manner.

The digestate will be directly injected into the soil which will minimize any potential for runoff. Additionally, surface waters can be protected by using conservation practices that reduce erosion and prevent the movement of sediments and accompanying nutrients from the site of application to ponds, lakes, or streams.

The NYSDEC Part 360 regulations restrict biosolids application to sites where surface runoff is minimized and restricted from reaching surface water bodies, drainage ditches, and other impoundments. Application within 200 feet of wells is prohibited to reduce the potential for waste constituents to move from the soil into groundwater and application within 100 feet of surface water is prohibited to reduce the potential for waste constituents to move into the surface water.

Concern: Sampling requirements including heavy metals

Response: All in-coming wastewater treatment plant sludges (biosolids) and the digestate resulting from the digestion of biosolids must both be analyzed for the frequency and parameters outlined in 6 NYCRR Part 360 Solid Waste Management Facilities Regulations, Subpart 4.7(c)(1), including:

Total Kjeldahl Nitrogen, Ammonia, Nitrate, Total Phosphorous, Total Potassium, pH, Total Solids, Total Volatile Solids, Arsenic, Cadmium, Chromium (total), Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, and Zinc.

The Part 360 regulations set forth testing frequency and concentration standards for these metals and the digestate must meet the concentration standards prior to land application or tank storage. Additionally, all biosolids must be treated by a method to reduce pathogens in accordance with DEC Part 360 and US EPA Regulations.

Annually, the soil in the fields where digestate will be land applied must be analyzed for the following parameters: pH, Arsenic, Cadmium, Chromium (total), Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, and Zinc. A minimum of one analysis is required for every 50 acres, or fraction thereof. Each soil sample must be a composite of a minimum of ten randomly selected sample locations.

Concern: Rate of application, how often is land spreading repeated on a particular field

Response: In cases where land application is approved under a permit, nutrient management planning ensures that the appropriate quantity and quality of digestate are land- applied to the farmland. The digestate application is specifically calculated to match the nutrient uptake requirements of the particular crop to be planted on the field. The application rate must not exceed the agronomic rate for the crop grown; calculations showing the nutrient loading, including nitrogen, phosphorus and potassium are required annually; and the metal loading must not exceed 20% of the cumulative loading limit in any one year.

Concern: Necessity of site restrictions, crops cannot be grown for human consumption after land application.

Response: In New York State, there are buffer requirements, public access, and crop harvesting restrictions for the land application of Class B biosolids (treated but still potentially containing detectable levels of pathogens). The use of appropriate controls (application rates, buffers to surface waters, etc.) is common for the management of all nutrients (manure, commercial fertilizer, etc.) used on well-operated farms.

According to the FDA "Guidance for Industry – Guidance to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables", biosolids recycled in accordance with EPA regulations are recognized as safe for use. Decades of studies have demonstrated that biosolids can be safely used on crops. The National Academy of Sciences has reviewed current practices, public health concerns and regulatory standards, and has concluded that "the use of these materials in the production of crops for human consumption when practiced in accordance with existing federal guidelines and regulations, presents negligible risk to the consumer, to crop production and to the environment." In addition, an epidemiological study of the health of farm

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families using biosolids showed that the use of biosolids was safe. Pathogens that may be present die off soon in the field due to exposure to sunlight, temperature variation and absence of their host organism. According to Part 360 Regulations, "food crops with harvested parts that are totally above the land surface must not be harvested for 14 months after land application. Food crops with harvested parts below the surface of the land must not be harvested for 38 months after land application." The restriction on the growth of crops for human consumption is related to the potential presence of remaining pathogens in the digestate and is only for a limited amount of time. After that period, there is no further restriction. It is known that any pathogens that could potentially be present will eventually die as they cannot live in absence of their host organism.

In areas where land application is permitted, each area must be staked prior to land application to define the application boundaries. Land application is prohibited in areas where groundwater is within 24 inches of the ground surface at the time of application. Land application is also prohibited in areas where bedrock lies less than 24 inches below the ground surface. Further, application within 100 feet of surface water is prohibited to reduce the potential for waste constituents to move into the surface water.

Concern: Migration of bacteria/pathogens into ground water

Response: Concerns were raised regarding the potential for bacteria to seep into the water table and contaminate wells. The concern relates to the potential movement of pathogens, defined as any disease-producing agent, especially a virus, bacterium, or other microorganism, from the property where land application is occurring to an adjacent property. Similar to pathogens in manure, pathogens in the digestate (present in very low levels, if at all, since the material has been exposed to a heat treatment during digestion) can migrate through airborne means (dust), water, and vectors (flies, etc.). However, for this digestate, the potential for pathogen migration through any of these routes is controlled by regulatory criteria and application practices. The digestate liquid is directly injected below the soil surface and therefore would not be part of any dust that might be emitted from a dry soil surface during wind conditions that are amenable to off-site transport, and would not be an attraction to vectors. The potential movement of pathogens (and nutrients) to water sources is controlled by numerous criteria in Part 360 Regulations including, but not limited to, incorporation, required separation distances to both groundwater and bedrock, required buffer zones to surface water resources, slope restrictions, application rate restrictions, and soil type restrictions.

Concern: Odor

Response: The digestate will exceed the NYSDEC and USEPA requirement for a minimum of 38% volatile solids reduction. Volatile solids are the portion of the material that can cause odor. The volatiles will be removed during the digestion process when biogas is created and converted to electricity. Additionally, odor will be minimized as the digestate will be directly injected and incorporated into the soil.

Concern: Trav-Co storage tank – structural integrity, leaking potential, odor

Response: A Part 360 Solid Waste Management Facility permit has already been issued for the Trav-Co storage tank. Comments pertaining to the Trav-Co tank have been addressed during the review of the permit application for that facility as well as in the March 7, 2014 responsiveness summary prepared for that project. A copy of that responsiveness summary is included for your review.

If you have any questions regarding this letter, please feel free to contact me at 716/851-7165.

Sincerely,



Lisa M. Czechowicz
Deputy Regional Permit Administrator

ecc: Mr. Peter Grasso , NYSDEC Division of Materials Management, Attn: Ms. Efrat Forgette
Ms. Sally Rowland, NYSDEC Division of Materials Management, Central Office
Mr. Bruce Bailey, Quasar Energy Group
Hon. Earl Gingerich, Supervisor, Town of Marilla
Hon. Ellen Grant, Supervisor, Town of Bennington