



Buffalo BioEnergy Digester Contingency Plan for Spills at Digester, Lagoon, or Storage Tank

SPILLS

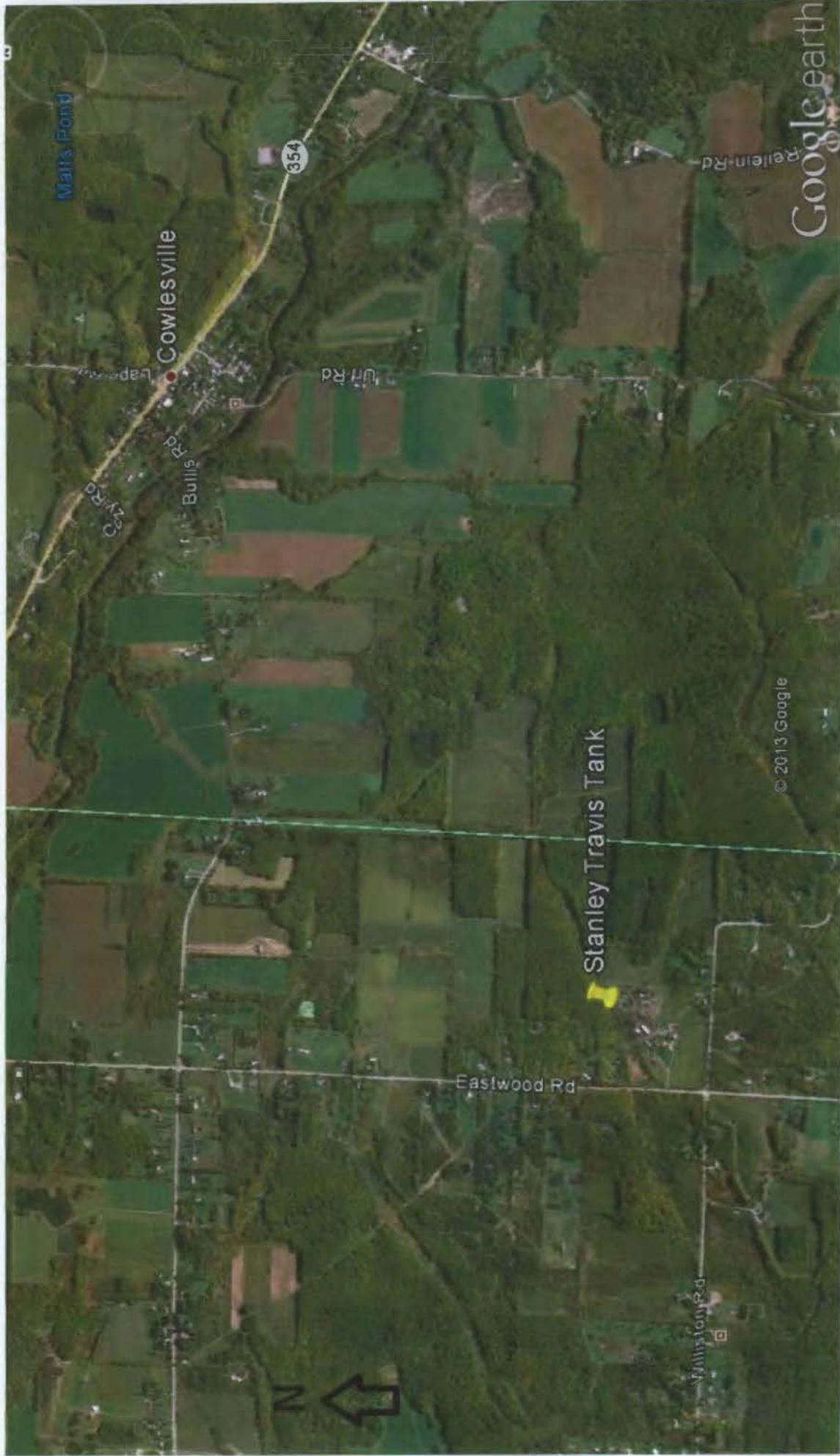
In the unlikely event of a spill during transportation to or within the digester Buffalo BioEnergy will take the following immediate actions:

1. HALT THE SOURCE OF THE SPILL.
2. CONTAIN SPILL; As appropriate, use straw bales to form a barrier.
3. CLEAN UP; Employ vacuum truck cleaning up large quantities of sludge.
4. FINAL CLEAN UP; As appropriate, flush roadways with water immediately after sludge is removed from the spill site, or sweep as necessary to clean. In the event a spill occurs on private property, the owner will be contacted immediately and final cleanup will be completed to the satisfaction of the owner.
5. MANAGEMENT OF CLEAN UP EFFORTS; Buffalo BioEnergy shall take immediate charge and initiate clean-up activities. Labor shall be secured as needed. Buffalo BioEnergy shall also be on hand to communicate with the public or media on the scene, answering questions and advising of clean up activities.
6. NOTIFICATION:
 - Dispatch Manager to notify Operations Managers with exact location, time of occurrence, and conditions of spill.
 - IMMEDIATE NOTIFICATION** will be given by Operations in the following order:
 - NYSDEC Office
 - Buffalo District Office 716.851.7165
 - Dispatch to notify R&M Manager about spill and needed equipment for clean-up.
 - R&M Manager to notify Managers if vacuum truck and/or personnel assistance is required.
 - Dispatch to obtain necessary information about spill such as police report and to follow-up as necessary to bill other parties for insurance claims.
7. SPILL PREVENTION; Buffalo BioEnergy shall take the following steps:
 - Ensure truck drivers/press operator watch truck while loading at plant.
 - Ensure that tailgate seals are in place on trucks. If not, they will be replaced or repaired as necessary.
 - Inspect trucks daily and replace or repair as necessary.
 - Ensure tarps are in place while transporting.
 - Ensure unloading operations in the field are conducted so as to minimize any spillage.
 - Instruct truck drivers of assured safe distances to follow traffic so as to prevent sudden stops.

BB 042413

quasar energy group
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Cleveland, OH 44141

(216) 986-9999
www.quasarenergygroup.com



Matts Pond

Cowlesville

354

Relein Rd

Google earth

Lap Rd

Uth Rd

Bullis Rd

C 24 Rd

Stanley Travis Tank

© 2013 Google

Eastwood Rd

Mills Rd





Williston Rd

Eastwood Rd

Stanley Travis Tank



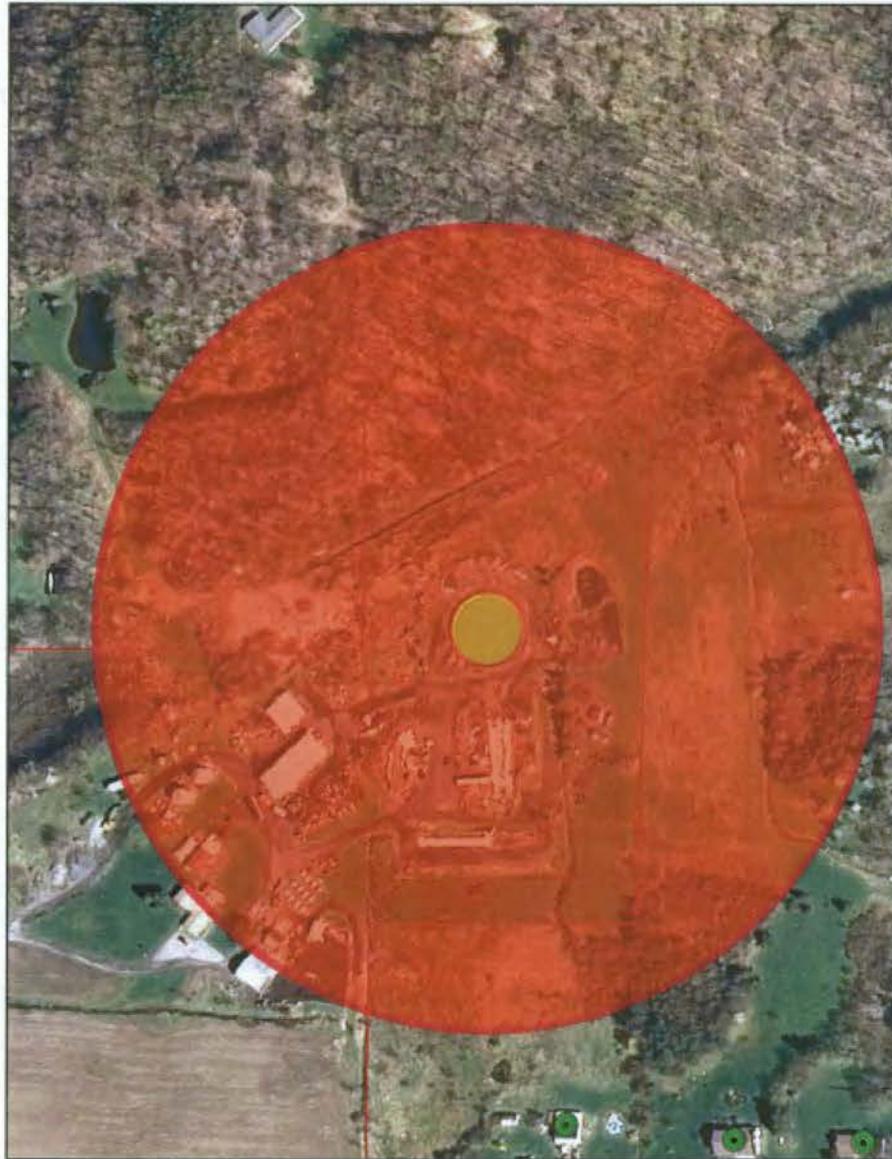
Trav-Co Storage Tank



0 125 250 500 Feet

- Residences
- 5_ft_contours
- Tank
- ▭ Trav-Co Property Boundary
- Trav-Co Tank 500 ft Buffer

Trav-Co Storage Tank



0 125 250 500 Feet

- Residences
- Tank
- ▭ Trav-Co Property Boundary
- ▭ Trav-Co Tank 500 ft Buffer



 Trav-Co Property Boundary



Trav-Co Storage Tank with 500 ft Buffer



Legend

- Streams
- Lakes / Ponds
- DEC Wetlands
- National Wetlands Inventory
 - Wetlands
 - No Digital Data
- FEMA Floodplains
- Steep Slopes
 - 8 - 15% Slope
 - 15% + Slope
- Municipal Boundaries
- 2011_bdy

0 466.00 932.0Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

**ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS**

This map is a user generated static output from an internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 5,592



Standard Operating Procedure

Public Complaint for Odor, Noise, and Spills Procedure

I. Introduction

In the anaerobic digestion and biosolids industry, our neighbors are likely to have concerns and complaints regarding odor, noise, dust and/or material spilled by trucks.

It is our responsibility to be good neighbors by showing respect and understanding and taking their concern seriously. It is our duty to investigate all complaints immediately.

II. Procedure - During Business Hours

Following are the steps to be followed when dealing with our neighbors in regard to any type of complaint.

When the complainant calls in and identifies the reason for their call, follow these steps.

1. Ask them to hold while you get a member of the management staff to help them.

Contact the front desk. The person there will follow the chain of command for responding to the call.

Plant Manager
First available manager
Administrative Assistant at Main Office

2. While listening/talking to the complainant, be polite and understanding, remember that *your attitude should reflect the impression that "the customer is always right"*.
3. Always indicate that "We want to be a good neighbor" Ask the following questions:
 - a. What time did you start noticing the odor/noise or... When did you first see the dust/spill?
 - b. Do you presently detect the odor/noise/dust/spill? If yes, Would it be okay to visit you at your place now and meet with you?
 - c. If it was a spill, was it a commercial truck or a pick-up? Name on truck?
 - d. What is your full name, address and phone number?
4. Whether they allow you to meet with them or not, you must investigate the site of the complaint. When doing the site investigation, observe the following:
 - a. Wind conditions
 - b. Unusual activity on the grounds or neighboring grounds.
 - c. Talk to adjacent neighbors if outside.
 - d. Note if there is road construction detouring trucks to/from the facility through their neighborhood.
 - e. Indicate any findings on the complaint form.
5. Complete the complaint form and pass it on to Operations for completion of the operational data.
6. Return completed form to front desk for typing and due process.

Standard Operating Procedure

Public Complaint for Odor, Noise, and Spills Procedure

7. Notify Bruce Bailey, Regulatory of the complaint by e-mail and/or cell phone 216.538.1151.

III. Procedure - After Business Hours

Following are the steps to be followed after business hours.

When the complainant calls in and identifies the reason for their call, follow these steps.

1. Ask them to hold while you get a complaint form.
 2. A. Complete the complainant's name and address.
B. Advise them that the odor will be investigated immediately.
C. Ask them if they would like a call back tonight or on the next business day.
 3. Call Operations Manager. If you cannot contact him, call the manager on call and relay the necessary information.
 4. The responding manager will drive to the area of the complaint and investigate the odor or spill.
 5. After investigating the site of the complaint, the manager will go to the composting facility to document the status of the plant. This includes:
 - A. Odor control system status
 - B. Any open doors
 - C. Material movement
- Depending upon the time of the call, the person investigating the complaint will contact the resident and discuss the findings.
6. Document all findings on the complaint form. Forward a copy of the form to Bruce Bailey and Operations Management.

IV. Mitigate Source of Issues

ODOR: This facility is located in an isolated, rural setting and farm odors are a normal occurrence.

However, some very localized odors will occur when the tank is actively mixed for land application. Due to isolation from neighbors there should not be impacts. Daily loading into the tank will be through existing pipes that deliver the inflow under the naturally occurring crust. The crust that forms reduces odor potential significantly.

NOISE: The facility is for storage of biosolids. It is isolated from neighbors. Noise will occur when trucks haul material to and from the tank and when a tractor is used to mix and unload the facility. Some noise occurs with land application activities. Seasonally activities will occur in ramped up activities as field access windows open and close. Care will be taken to operate during daylight hours as much as possible to minimize impacts. Equipment will have functioning mufflers in place.

Standard Operating Procedure

Public Complaint for Odor, Noise, and Spills Procedure

SPILLS: Regular pro-active inspection of trucks and/or manure spreaders hauling biosolids from the facility and at field application sites will be conducted to assure that equipment is properly sealed. In the case that a spill occurs clean-up and notification to NYSDEC will occur per Spill Management Plan.

Quasar Energy Group
Standard Operating Procedure (SOP)
Buffalo BioEnergy (BBE)
TRAV-CO Storage tank

The Buffalo BioEnergy – TRAV-CO Storage tank (the storage tank) is at The storage tank is used as effluent storage for the Buffalo BioEnergy (BBE) anaerobic digestion (AD) facility. Due to weather and seasonality, land application and other uses of the process effluent are not always feasible. In these instances effluent is pumped from the AD to the storage tank for storage.

The standard operating procedure (SOP) for the use of the Buffalo BioEnergy Storage tank is detailed below.

Operations

The Buffalo BioEnergy Storage tank has a **capacity of 1 million gallons**. An additional 1 to 2 rings may be added to increase the storage capacity in the future. The material to be stored is digested effluent or biosolids and/or other approved materials for land application. Materials unsuitable for land application will not be stored in the facility.

- Site access is monitored and controlled by on-site farmer.

Discharge: Effluent from the AD will discharge periodically throughout the day into the storage tank for storage purposes.

Equipment: Contracted equipment and operators will be utilized to load and unload the tank.

Mixing: Pumping and mixing will be done with a PTO driven Houle mixer/pump – Agi-Pompe Verticale Vertical Agi-Pompe. It requires a 150 HP tractor to run. Tractors are on site.

Periodic, uniform mixing is essential to prevent settling, create a consistent product, and ensure maximum material retrieval. Mixing will occur a minimum of two weeks prior to land application to allow for collection of representative sample or analysis and NANI generation.

- Mixing will be conducted weekly or biweekly during periods when the storage tank is being cleaned out (primarily the winter and summer months).
- Directly prior to major seasonal land application events in the spring and fall – when the storage tank will be rapidly emptied – more extensive mixing will be conducted.
- Mixing must be continual during land application events.

Land Application Events: The storage tank will be cleaned on an event basis when fields are accessible. Mixing will occur a minimum of two weeks prior to land application to allow for collection of representative sample or analysis and NANI generation. Dragline operators will be informed of application rates prior to starting field applications.

In Case of Spill Notify Bruce Bailey at 216.538.1151, bbailey@quasarenergygroup.com or Dave Kelly at 732.492.9985, dkelly@quasareg.com. They will notify NYSDEC per Permit Nos.: 9-1468-00224/00001-SW and 9-1468-00224/00002-ASF.

Effluent Sampling:

- Sampling will be conducted on a monthly basis for material sent to the storage tank and submitted to a NY certified laboratory for analysis. Coordinate sample containers and sample delivery with quasar's laboratory. Sampling should be done during the first week of each month.
- Effluent will be collected from at least seven (7) places in the storage tank. A sample for fecal coliform will be collected at each location and a single composite sample of material from all seven (7) locations will be collected for metals, VAR, and %TS analysis.
- Sampling will be conducted on a spreading event basis by NY certified lab or equivalent for metals, VAR, and fecal coliform analysis. NY certified lab or equivalent will provide sampling equipment for spreading events. Coordination must be done with NY certified lab or equivalent so that fecal coliform samples reach the laboratory within 6 hours. Samples will be taken at least two weeks prior to spreading event.
- At least one sample, minimum 250 mL, must be taken per land application event and submitted to a NY certified laboratory for analysis. A land application event is any hauling from the storage tank within a 24 hour time period. The % TS data collected will be used to adjust NANI forms between quarterly testing events.
- The Storage tank must be mixed for no less than two hours before each sampling event.

Regulatory Compliance

Use of the Buffalo BioEnergy Storage tank is conducted under NYSDEC Permit Nos.: 9-1468-00224/00001-SW and 9-1468-00224/00002-ASF.

- **Freeboard:** At least two (2) foot of freeboard in the storage tank will be maintained at all times.

- **Odor Control:** Activities will be conducted to minimize odors. All odor complaints must be documented by BBE. Follow the odor management SOP for preventative and documentation issues.
- **Housekeeping:** Activities will be conducted to prevent depositing biosolids on the ground as well or buildup of inert material on the banks of the storage tank.

Maintenance

Tractor: Check hydraulic oil and motor oil levels regularly. Do not store oil (new or old) products near BBE storage tank.

Storage tank Pump: Visually inspect pump whenever it is removed from the storage tank. Check for debris obstructing the impeller, loose parts, corrosion, etc. Correct problems as necessary. Grease PTO and accessible bearings before every hauling event.

Grounds: The grounds will be mowed as needed. Maintain cleanliness and pick-up trash/debris periodically.

Storage tank Clean-Out

Even with the protocols in place to minimize the settling of solids from the effluent, settling will occur during long periods of storage between beneficial use land applications. These long storage periods generally correspond to the summer and winter seasons. If possible, it is highly recommended that all solids that settle be cleaned out of the storage tank following major application events and prior to the long periods of storage, specifically in the late spring/early summer and late fall/early winter.

The solids that settle can be cleaned out with excavation equipment and hauled to NYSDEC approved land application sites and applied at agronomic rates. Testing of the solids must be done prior to land application to verify levels of heavy metals and nutrients and for calculation of agronomic rates.



**BUFFALO BIOENERGY, LLC.
ANAEROBIC DIDECTION FACILITY
SLUDGE MANAGEMENT PLAN FOR
SITE _____
OCTOBER 2012**

I. GENERAL INFORMATION

A. NAME, ADDRESS, AND PHONE NUMBER

1. Buffalo BioEnergy, LLC
7624 Riverview Road
Cleveland, Ohio 44141
Bruce Bailey
Project Manager
216.986.9999 ext. 116

Digester Facility Location
North American Drive
West Seneca, New York 14224
78° 43' 38.60"/42°50' 46.67"

Land Application Site

II. SOLIDS INFORMATION

This anaerobic digestion facility (ADF) is a merchant facility and will accept and process biosolids (sewage sludge), manure, foodwastes, FOG (fats, oil, & grease), energy crops, i.e., corn silage, and other organic feedstocks.

A. MANURE

A number of farms and/or livestock based events in the regional produce manures which may be directed to this facility. Due to the organic basis of manure it will contain volatile solids and anaerobic digestion will convert the volatile solids to biogas while stabilizing the manure.

B. FOODWASTE

Food processors in the region produce foodwastes which may be directed to this facility. Foodwaste will be accepted in liquid, semi-solids, and solid forms. Due to the organic basis of foodwaste it will contain volatile solids and anaerobic digestion will convert the volatile solids to biogas while stabilizing the foodwaste.

C. FOG

FOG represents a particular challenge to collection system operators in municipalities. As such a number have restricted acceptance of FOG. This facility will accept FOG because it produces a large volume of biogas when anaerobically digested and is difficult to dispose of through other methods.

D. ENERGY CROPS

Energy crops are grown for anaerobic digestion to produce biogas as a standard practice Europe. We anticipate that such a practice will occur within the expected lifetime of this ADF. Production of Energy Crops with a return of the digested product to farm fields forms a closed loop for beneficial use and the production of renewable green energy. Also included in this category is off-spec or damage agricultural products such as grain, hay, silage, spilled/soiled feed, stover, etc.

G. GLYCERIN, STILLAGE, & OTHER BIOGAS PRODUCING BY-PRODUCTS

Bio-Based fuels are quickly gaining a foothold in the US. In the case of biodiesel glycerin is a by-product. There is a market for a certain volume of this by-product in the cosmetics industry. As more and more biodiesel is produced a market glut occurs. In the western US it is already standard practice to add glycerin to boost biogas production. Glycerin is an excellent source of biogas when anaerobically digested.

Ethanol is the distillation of alcohol from grain. In the US ethanol is primarily produced from corn (*Zea mays*). Alcohol is produced from the starchy endocarp and the remaining distillers' grain (known as stillage) is usually dried to become DDGS (Distillers' Dried Grain with Solubles). As with glycerin, there is a finite market for DDGS. Stillage, the wet, as produced, form of ethanol by-products is an excellent source of biogas when anaerobically digested.

Organic, high energy materials such as glycerin and stillage will be accepted for anaerobic digestion at this facility.

I. SOLIDS MANAGEMENT

1. TANKAGE

The initial facility consists of a 750,000 gallon complete mix anaerobic digester and a 230,000 gallon feedstock receiving tank. Based on the designed inflow of up to 5,000 DT/year this volume of digester tankage will result in a 20 to 30 day hydraulic retention time. The 230,000 gallon mixing/contact basin (feedstock receiving tank) for homogenization of cake sludge to acceptable percent solids for introduction into the digesters.

2. PSRP/PFRP

The digested biosolids for direct land application purposes will meet PSRP Class B VAR through anaerobic digestion with a minimum volatile solids reduction of 38%.

The digested biosolids may be further processed to PFRP Class A through time/temperature regime.

3. DEWATERING INFORMATION

The digested, semi-liquid biosolids may be dewatered or thickened using a vibratory screen and screw press equipment (or other). This equipment will be dedicated for dewatering the digested solids along with a separate conveyance system so as not to contaminate the solids. The dewatered solids cake should range between 25 and 33% dry solids. Filtrate from dewatering that is not recycled to the digestion process may be 1) further treated through a Clean Water process involving RO and/or MBR and recycled or reused under separate permits; or 2) it will be land applied for agronomic value. Initially the management option will be land application.

4. CLASSIFICATION OF SOLIDS

When land application of liquid or solid biosolids or liquid filtrate/centrate is selected, the material will be Class B anaerobically digested.

When PFRP liquid or solid biosolids are generated the product will go off site to area market usage such as soil blending or mulch manufacture.

If for any reason any one of these parameters is not met in the ADS process the effected material will be recycled back through the process until such material meets all the Class B requirements. If the material still fails to obtain the requirements it will be considered for disposal in the landfill.

III. TREATMENT ALTERNATIVES

A. ANAEROBIC DIGESTION

The anaerobic digestion process at this facility will be a high solids digestion process that will have an annual capacity of 5,000 dry tons and will compliment an off-site soil blending process. A combination of solids cake and liquid sludge producing feed solids of approximately 10 to 15% will be fed into the primary digester, a complete mix digester. The solids will be gently mixed for a retention time of approximately 10 to 12 days. After exiting the primary digester, the solids will be transferred to the dual purpose tank. Here the solids will remain up to 14 additional days prior to being discharged into a holding tank. While in the digester, the solids will be held at a temperature between 95°F and 98°F and gently mixed with a set of mixers and/or pumps. This will meet Class B PSRP requirements for land application. With the breakdown of the volatile solids during the process, raw biogas will be produced that will be used to generate biogas (equivalent to natural gas) and/or electricity.

1. Capacity – The digester will have dimensions of 60' in diameter with a depth of 40' for a 750,000 gallon working capacity. One additional tank with a working capacity of 230,000 gallons is in the process. This tank is a 230,000 gallon feedstock equalization tank to assure acceptable % solids and to initiate digestion.

2. Detention time – The detention time for the digesters will be up to 30 days.

3. Pathogen reduction – For Class B for land application, pathogen control (PSRP) will be achieved by anaerobic digestion. For Class A EQ product pathogen control will be achieved through time and temperature regime.

4. Vector Attraction Reduction – Vector attraction reduction (VAR) requirements will be met using Option 1, whereby the mass of volatile solids in the solids shall be reduced by a minimum of 38 %. The volatile solids reduction will be measured by recording the solids entering the digester and those volatile solids remaining after the time/temperature process. The loss in solids divided by the volatile solids going into the digester will result in the volatile solids reduction.

5. Type of Cover – The dual purpose tank will have either a flexible cover, while the other tanks will have fixed covers.

6. Digester mixing mechanisms – Two mixing systems which employ either side wall mounted units or a top stirrer unit will be used.

7. Digester heating mechanisms – Boilers and/or heat exchangers (pulling waste heat from the generator) will be used to heat the digester.

8. Time and temperature record keeping – The anaerobic digestion process will have a process control system integrated into its technology.

C. OFF-SITE LOCATION

The ADS has the ability to divert the liquid, filtrate, and/or cake solids from the anaerobic digestion process and place the solids in trucks or water tight containers to be further processed elsewhere. The solids cake may be taken to an off-site location for further processing such as soil blending or disposed of at an approved landfill when necessary. NYSDEC will be notified of these operational changes in writing and the dry tons diverted will be documented.

IV. AGRONOMIC MANAGEMENT FOR BIOSOLIDS

A. STORAGE

Biosolids that are discharged from the ADS and dewatered are placed into storage until the following parameters are met:

1. Laboratory analyses- Analysis work is performed on the biosolids for:

- a) Pollutant (metals) levels as defined in attachment A
- b) Fecal coliform ($\leq 2,000,000$ MPN /gram fecal coliform). For Class A $\leq 1,000$ MPN.
- d) At a minimum, volatile solids will be reduced by 38%

2. Storage of biosolids will occur at the ADS within tankage.

Annual production of biosolids will be approximately 20,000 cubic yards of cake material or 5,000,000 to 7,000,000 gallons at start-up or some combination thereof, and the site capacity is as follows:

1. Covered storage area – None.
2. Open storage area – None – biosolids will be shipped as generated.
3. Off-Site Storage – Concrete and/or earthen lined lagoons will be utilized for storage on a seasonal basis. The lagoons will be isolated from surface and ground water and will be cleaned out regularly.

B. MARKETING COUNTIES

Since NYSDEC requires site specific management plans this is not applicable.

C. DISTRIBUTION

The biosolids will be distributed in bulk for land application. Class A EQ product will ship to market.

V. MONITORING AND REPORTING

A. MONITORING

The frequency of monitoring for pollutants, pathogen reduction and vector attraction reduction will be as follows:

Anaerobic digestion – The monitoring for the pollutants and bacterial counts will be monthly. The pathogen reduction requirement for temperatures will be recorded continuously whenever the pasteurization process is implemented. The vector attraction reduction requirement will be monitored per permit requirements for volatile solids entering and leaving the digestion system after pasteurization.

The frequency of monitoring for total Kjeldahl nitrogen or equivalent, ammonia nitrogen, phosphorus, potassium and pH will be monthly for both the anaerobic digestion processes.

The frequency of monitoring for the % dry solids, % volatile solids and the weight in dry tons shall be done monthly for the anaerobic digestion processes.

B. REPORTING

Annual reports will be generated and be available for five years and shall contain the following information:

1. Pollutant concentrations for all processes.
2. Description of how pathogen reduction requirements were met including the bacterial counts for all processes.
3. Description of how vector attraction reduction requirements were met for all processes.
4. Results for pathogen reduction, vector attraction reduction, total Kjeldahl nitrogen, ammonia nitrogen, phosphorus, potassium, pH, % dry solids, % volatile solids, and weight in dry

tons processed. P and K data will be provided to farmers as P_2O_5 and K_2O , which are the fertilizer equivalents that farmers are accustomed to working with.

5. Signed certification statement for pathogen and vector attraction reduction compliance.

VI. CONTINGENCY PLAN

In the event that land application is not able to be performed in New York, quasar will manage the effluent by sending to our other digestion facilities and/or approved land application sites in other states.

Once the digester and lagoon facility are constructed the local contact information will be provided to NYSDEC.



BB QEG 100312