



State of Ohio Environmental Protection Agency

Northwest District Office

347 North Dunbridge Rd.
Bowling Green, OH 43402-9398

TELE: (419) 352-8461 FAX: (419) 352-8468
www.epa.ohio.gov

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

Re: Sandusky County
Clyde WWTP
Sludge Correspondence

June 30, 2010

Mr. Tom Bauer, Superintendent
City of Clyde WWTP
222 North Main Street
Clyde, Ohio 43410

Dear Mr. Bauer:

On June 24, 2010, Mr. Andrew Gall conducted an inspection at the City of Clyde Wastewater Treatment Plant (WWTP). The purpose of the inspection was to determine compliance with Ohio's Sewage Sludge Rules, Chapter 3745-40 of the Ohio Administrative Code. You were present and provided information on operations and record keeping. The inspection included a walk through the plant and a review of the sewage sludge sampling records.

Sewage sludge is treated by aerobic digestion. The sludge is thickened using a gravity belt thickener and sludge storage tanks prior to being land applied. It was indicated that the plant currently has a maximum liquid sludge storage capacity of 60 days. Additional storage capacity can be obtained by using the centrifuge to dewater the sludge which can be hauled to the landfill for disposal when weather conditions are not suitable for land application. During the inspection you indicated that you would like to install wire mesh flooring and walls in the truck loading area of the centrifuge building so that dewatered sewage sludge could be stockpiled at the plant.

Class B Pathogen Reduction Alternative 1, Fecal Coliform is being used to meet the pathogen reduction alternative requirement. Once per quarter seven sludge samples are taken and analyzed and the geometric mean of the seven samples is calculated and must be less than 2 million CFU per gram of total solids to meet the pathogen reduction requirements. Copies of lab results are maintained to document compliance with this requirement.

Mr. Tom Bauer, Superintendent
June 30, 2010
Page 2

Vector attraction reduction option number nine, direct injection is currently being used to meet the Vector Attraction Reduction requirements. In order to comply with VAR option 9, sewage sludge shall be injected below the surface of the land and no significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected within six hours of delivery to an authorized sludge site. In order to document compliance with this requirement a certification statement signed by your land application contractor certifying that the sludge has been injected in compliance with VAR option 9 needs to be developed and copies maintained at the WWTP.

As part of a land application program, proper field records must be maintained and available for review at the WWTP, as outlined in Ohio Administrative Code (OAC) 3745-40-06. Proper field records include Ohio EPA sludge site authorization letters, signage posting dates, agronomic rate calculations and soil testing records. Soil tests for pH and phosphorous (Bray-Kurtz P1 extraction or Mehlich-3 extraction) need to be no more than two (2) years old when sludge is applied, please refer to OAC 3745-40-06(E). Updated soil testing records were not available at the time of the inspection. Therefore, we request that you verify that your contractor has been maintaining the proper field records and obtain copies of the records for the WWTP files. You also indicated that the City has started requiring their contractor to submit copies of the signed land applier certification statements required by OAC 3745-40-06(J) certifying that Class B signage requirements, site restrictions, agronomic rates and vector attraction reduction requirements have been met each day Clyde sewage sludge is land applied.

Currently your contractor provides a load ticket to the WWTP for each load of sludge hauled. We recommend that you work with your contractor to include the EPA site ID numbers on the load ticket. This will allow you to quickly determine that sludge is being applied on an Ohio EPA authorized sludge site.

In addition we recommend that you obtain copies of sludge site authorization packets from your contractor for sites that are authorized for the City of Clyde. These packets will contain specific location information for each site as well as maps and soil sampling information.

It was indicated that you randomly inspect your contractor when sludge is being land applied to ensure that they are complying with land application requirements. We suggest that you create a brief inspection checklist to document your site visits. An example field record and land application checklist was emailed to you following the inspection.

Mr. Tom Bauer, Superintendent
June 30, 2010
Page 3

We request that a written response to this letter be submitted to Mr. Gall's attention within 30 days. The response should indicate how the above noted concerns will be addressed so that compliance with Ohio Sewage Sludge Rules OAC 3475-40 (<http://www.epa.state.oh.us/dsw/rules/3745-40.html>) can be maintained. A copy of our inspection checklist has been included for your review. If you have any questions regarding this letter, please contact Mr. Andrew Gall at (419) 373-3003 or via email at andrew.gall@epa.state.oh.us

Sincerely,



Alex A. Smaili, P.E.
Water Quality Engineer II / Unit Supervisor
Division of Surface Water

AG/lr

Enclosure

pc: Mr. Gene Windau, President
DSW-NWDO File w/enclosure . /

ec: Alex A. Smaili, DSW-NWDO
Mary Beth Cohen, DSW-NWDO
Chris Moody, DSW-NEDO
Jacob Howdysshell, DSW-CO



SEWAGE SLUDGE LAND APPLICATION INSPECTION

Date of Inspection: 6/24/2010
Inspector Name: Andrew Gull

Facility Name City of Clyde

Facility Address: 749 W. McPherson Hwy.
City: Clyde
Zip: 43410

Mailing Address: 222 W. Main St.
City: Clyde
Zip: 43410

Contacts Present

Name: Tom Bauer
Title: Superintendent
Phone: 419-547-9407
Fax: -

Contractor
Name: Midwest Compost
Title: Gene and John
Phone: 800-376-4137
Fax: -

I. Facility Information

Facility Background

Table with 2 columns: Facility Background and values. Rows include Average Daily Flow (MGD), Sewage Sludge Class, Sewage Sludge Storage Capacity (Days), and Contracted Alternative (if applicable).

?? - Increase by using centrifuge

Facility Sewage Sludge Treatment Process(es)

Table with 3 columns: Treatment Process, # Units, and Notes. Rows include Aerobic Digestion, Sludge Storage Tanks, Gravity Belt Thickener, and Centrifuge.

Centrifuge

II. Management Practices

General Facility Sewage Sludge Treatment

Yes No N/A	1. Are the sewage sludge treatment units being operated/maintained in accordance with the manufacturer's specifications?
Yes No N/A	2. Does the facility have adequate equipment redundancy (ie. back-up sewage sludge treatment units)?
Yes <input checked="" type="radio"/> No N/A	3. Does the facility have any plans for upgrades to any of the sewage sludge treatment units? If so, explain: <i>NONE - Planned Want to</i>
<input checked="" type="radio"/> Yes No N/A	4. Does the facility have a contingency plan for sewage sludge disposal? <i>Landfill</i>
Yes No N/A	5. Is the sewage sludge handling operation adequate to manage the volume of sewage sludge generated? <i>cake sludge</i>
Comments:	

Drying Beds, Gravity Thickener, Centrifuge, and Dissolved Air Flootation N/A

Average percent (%) solids before thickening:		Average percent (%) solids after thickening:	
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Yes <input checked="" type="radio"/> No N/A	1. Is primary unstabilized sewage sludge fed to the drying beds, gravity thickener, or centrifuge?
Yes <input checked="" type="radio"/> No N/A	2. Is the sewage sludge mixed with other materials, including coagulants, before or after thickening?

- All waste sludge sent to thickener and then sent to digester

- Primary sludge is pumped directly to digester

Average percent (%) solids before mixing sewage sludge with other materials:	
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Comments:	
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Aerobic Digestion

N/A

	1. Sewage sludge fed to the aerobic digester includes: <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input checked="" type="checkbox"/> Combined
Yes No N/A	2. Aerobic digester is operated at proper temperature? <input type="checkbox"/> Cryophilic (<10° C = <50° F) <input type="checkbox"/> Mesophilic (10° to 42° C = 50° to 108° F) <input type="checkbox"/> Thermophilic (>42° C = >108° F) <i>Ambient Air Temp</i>
Comments:	

Anaerobic Digestion

N/A

	1. Sewage sludge fed to the aerobic digester includes: <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Combined
	2. Anaerobic digester operating mode: <input type="checkbox"/> High Rate* <input type="checkbox"/> Low Rate <small>*Utilize a combination of active mixing and elevated temperatures.</small>
Yes No N/A	4. Anaerobic digester is operated at proper temperature? <input type="checkbox"/> Cryophilic (<10° C = <50° F) <input type="checkbox"/> Mesophilic (10° to 42° C = 50° to 108° F) <input type="checkbox"/> Thermophilic (>42° C = >108° F)
Comments:	

Composting

~~N/A~~

	1. Type of sewage sludge composting performed: <input type="checkbox"/> In Vessel <input type="checkbox"/> Static Piles <input type="checkbox"/> Windrows
	2. Type of sewage sludge composted includes: <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Combined
Yes No N/A	3. Is the moisture content of the composting operation monitored?
Yes No N/A	4. Is the compost mixed? If so, number of turnings: <input type="text"/>
Yes No N/A	5. Is the oxygen content of the compost monitored?
Yes No N/A	6. Is the temperature of the compost monitored?
Yes No N/A	7. Are total and total volatile solids of the compost monitored?
Yes No N/A	8. Active Phase (days): <input type="text"/> Curing Phase (days): <input type="text"/>
Comments:	

Land Application

N/A

	1. Sewage sludge is applied to: <input checked="" type="checkbox"/> Authorized Sewage Sludge Site <input type="checkbox"/> Unauthorized Sewage Sludge Site <input type="checkbox"/> Forest <input type="checkbox"/> Reclamation Site <input type="checkbox"/> Lawn or Garden <input type="checkbox"/> Public Contact Site (ie. park, etc.)	<p>Tom makes → Periodic visits made to the site to ensure that contractor is using authorized sites</p>
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Yes No N/A

2. Are Class A pathogen reduction requirements met (indicate method being performed)?

- Alt. 1 - Fecal Coliform <1,000 MPN/g total solids, or Salmonella <3 MPN/4 g total solids, and time/temperature:
 - >7% solids at >50° C (>122°F) for >20 minutes (no warmed gases or immiscible liquid).
 - >7% solids at >50° C (>122°F) for >15 seconds (warmed gases or immiscible liquid).
 - <7% solids at X° C for >15 seconds to <30 minutes.
 - <7% solids at >50° C (>122°F) for >30 minutes.

- Alt. 2 - Fecal Coliform <1,000 MPN/g total solids, or Salmonella <3 MPN/4 g total solids, and pH > 12 for 72 hours.

- Alt. 3 - Fecal Coliform <1,000 MPN/g total solids, or Salmonella <3 MPN/4 g total solids, and other processes:
 - Enteric virus is <1 plaque forming unit (PFU) per 4 grams of total solids (TS) PRIOR to pathogen treatment (PT).
 - Enteric virus is >1 PFU per 4 grams of TS prior to PT but is <1 per 4 grams of TS AFTER PT.
 - Helminth ova is <1 per 4 grams of TS PRIOR to PT.
 - Enteric virus >1 PFU per 4 grams of TS prior to PT, but is <1 per 4 grams of TS AFTER PT.

- Alt. 4 - Fecal Coliform <1,000 MPN/g total solids, or Salmonella <3 MPN/4 g total solids, and unknown processes:
 - Enteric virus is <1 PFU per 4 grams of TS at disposal.
 - Helminth ova is <1 per 4 grams of TS at disposal.

- Alt. 5 - Fecal Coliform <1,000 MPN/g total solids, or Salmonella <3 MPN/4 g total solids, and PFRP:
 - 1. Composting.
 - 2. Heat drying.
 - 3. Heat treatment.
 - 4. Thermophilic aerobic digestion.
 - 5. Beta ray irradiation.
 - 6. Gamma ray irradiation.
 - 7. Pasteurization.

- Alt. 6 - Equivalent process.

Yes No N/A

3. Are Class B pathogen reduction requirements met (indicate method being performed)?

- Fecal samples run in house by CFU/g
- Results tracked in OP 10 database
- Fecal samples run on sludge for back hauling event
- Hard copy of results in monthly files on lab bench sheet

Alt. 1 - Geometric mean of seven Fecal Coliform samples with <2,000,000 MPN/g total dry solids or <2,000,000 Colony Forming Units/g total dry solids.

Alt. 2 - PSRP 1 aerobic digestion. Mean cell residence time and temperature shall be between 40 days at 20°C (68°F) and 60 days at 15°C (59°F).

Average mean cell residence time (days):

Average temperature (°C):

PSRP 2 air drying. Sewage sludge dried on sand beds or basins for 3 months at an ambient average daily temperature >0°C (>32°F)

PSRP 3 anaerobic digestion. Mean cell residence time and temperature shall be between 15 days at 35°-55°C (95°-131°F) and 60 days at 20°C (68°F).

Average mean cell residence time (days):

Average temperature (°C):

PSRP 4 composting. Sewage sludge temperature is raised to >40°C (>104°F) for 5 days. Temperature must exceed 55°C (>131°F) for 4 hours during the 5 day period.

PSRP 5 lime treatment. Lime is added to sewage sludge to raise the pH to 12 after 2 hours of contact.

Yes No N/A

4. Are the Class B signage requirements being satisfied?

- Midwest posts sign at field
- Tom checks during field visits

Yes No N/A	5. Are Class B site restrictions being practiced (indicate restrictions being performed)?
<p>Corn Wheat Beans</p>	<p><input checked="" type="checkbox"/> Food crops (above ground) are harvested >14 months after sewage sludge application.</p> <p><input checked="" type="checkbox"/> Food crops (below ground) are harvested >20 months after sewage sludge application when sewage sludge remains on ground >4 months before soil incorporation.</p> <p><input checked="" type="checkbox"/> Food crops (below ground) are harvested >38 months after sewage sludge application when sewage sludge remains on ground <4 months before soil incorporation.</p> <p><input checked="" type="checkbox"/> Food crops, feed crops, and fiber crops are harvested >30 days after sewage sludge application.</p> <p><i>NA</i> <input type="checkbox"/> Animal grazing allowed on land only >30 days after sewage sludge application.</p> <p><i>NA</i> <input type="checkbox"/> Turf grown on land where sewage sludge was applied not harvested for >1 year if placed on land with high potential for public exposure or lawn.</p> <p><input checked="" type="checkbox"/> Public access restricted to land with a high potential for public exposure for 1 year.</p> <p><input checked="" type="checkbox"/> Public access restricted to land with a low potential for public exposure for 30 days.</p>

<p>Yes No N/A</p> <p>- Midwest responsible for</p> <p>- Tom does quick check during site visits</p> <p>- Tom sends Midwest results so they can be compiled on yearly reports</p>	<p>6. Are bulk sewage sludge site restrictions being practiced (indicate restrictions being performed)?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> No threatened or endangered species present or critical habitat affected at the site where sewage sludge is applied. <input checked="" type="checkbox"/> Bulk sewage sludge is not applied to frozen or snow covered ground unless applied >100 feet from waters of the state and appropriate ground cover maintained. <input checked="" type="checkbox"/> Bulk sewage sludge is not applied <33 feet from waters of the state. <input checked="" type="checkbox"/> Bulk sewage sludge is applied at a rate equal or less than the agronomic rate. <input checked="" type="checkbox"/> Label affixed no bag or information sheet provided to user of sold and given away sludge indicating name of sludge preparer, application instruction, and maximum annual whole sludge application rate.
<p>Yes No N/A</p>	<p>7. Are bulk sewage sludge general requirements being practiced (indicate restrictions being performed)?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Sewage sludge is not applied to a site where the cumulative pollutant loading or annual application rate has been reached.. <input type="checkbox"/> Notification given to the sludge applier regarding total nitrogen content of the sludge. <input checked="" type="checkbox"/> Sufficient information required to comply with OAC 3745-40. <input type="checkbox"/> Sewage sludge site authorization packet submitted to Ohio EPA regarding the location of land application sites, appropriate NPDES permit numbers. <p>- Suggest providing copies to LWTP</p>

→ Suggest putting EPA site ID's on load ticket

Yes No N/A	
	<p>7. Is a vector attraction reduction method being met (indicate method being performed)?</p> <p><input type="checkbox"/> 38% Volatile Solids Reduction.</p> <p>VS Red. = (VS In - VS Out) / ((VS In) - (VS, In x VS, Out)) x 100%</p> <p><input type="checkbox"/> 40-day bench scale test. Volatile Solids reduced <17% (anaerobic digestion only)</p> <p><input type="checkbox"/> 30-day test bench scale . Volatile Solids reduced <15% (aerobic digestion only)</p> <p><input type="checkbox"/> Specific Oxygen Uptake Rate <1.5 mg/hr/gm Total Solids at 20°C (68°F).</p> <p><input type="checkbox"/> Aerobic process for >14 days at >40°C (104°F) with average sewage sludge temperatures at 45°C (113°F).</p> <p><input type="checkbox"/> pH >12 for 2 hours and pH >11.5 for 22 hours.</p> <p><input type="checkbox"/> Sewage sludge with no unstabilized solids contains >75% Total Solids prior to mixing with other materials.</p> <p><input type="checkbox"/> Sewage sludge with unstabilized solids contains >90% Total Solids prior to mixing with other materials.</p> <p><input checked="" type="checkbox"/> Subsurface injection.</p> <p><input type="checkbox"/> Soil incorporation within 6 hours for Class B or within 8 hours for EQ.</p>
Comments:	<p>Can average 20% lowest of 25% Volatile solids reduction</p>

Other Management Practices

~~N/A~~

	<p>1. The facility performs another sewage sludge treatment process (indicate which other management practice is being performed)</p> <p><input type="checkbox"/> Surface Disposal.</p> <p><input type="checkbox"/> Landfilling.</p> <p><input type="checkbox"/> PPG Lime Lakes.</p>
<p>Comments:</p>	

III. NPDES Permit Verification

<p><input checked="" type="radio"/> Yes No N/A</p>	<p>1. Are OAC 3745-40 sewage sludge frequency and monitoring parameters contained in the facility's current NPDES permit?</p>
	<p>2. Sewage sludge disposal practice(s):</p> <p>A. Land Application <input checked="" type="checkbox"/></p> <p> Bulk Sewage Sludge <input type="checkbox"/></p> <p> Bulk Material Derived from <input type="checkbox"/></p> <p> Sewage Sludge Sold or Given <input type="checkbox"/></p> <p> Away in Bag or Other Container</p> <p>B. Surface Disposal <input type="checkbox"/></p> <p>C. Sewage Sludge Incineration <input type="checkbox"/></p> <p>D. Onsite or Offsite Disposal <input type="checkbox"/></p> <p>E. Other:</p>
<p><input checked="" type="radio"/> Yes No N/A</p>	<p>3. Is the sewage sludge disposal practice authorized by current NPDES permit?</p>
<p><input checked="" type="radio"/> Yes No N/A</p>	<p>4. If the authorized sewage sludge disposal practice changes, will notification be given to Ohio EPA prior to the change?</p>
<p><input checked="" type="radio"/> Yes No N/A</p>	<p>5. The facility is utilizing sewage sludge land application sites that have been previously authorized by Ohio EPA.</p>
<p>Comments:</p>	

Monitoring and Reporting

<input checked="" type="radio"/> Yes	No	N/A	1. Is facility self-monitoring occurring at the frequencies specified for the parameters located in the facility's NPDES permit or OAC 3745-40?
<input checked="" type="radio"/> Yes	No	N/A	2. Is the facility reporting parameters using Ohio EPA form 4500 ? <i>EDMR</i>
<input checked="" type="radio"/> Yes	No	N/A	3. Is facility self-monitoring data available for all regulated pollutants for the previous five years?
<input checked="" type="radio"/> Yes	No	N/A	4. Do monthly operating reports show pollutant concentrations below ceiling concentrations shown in OAC 3745-40-05(F)(1)?
<input checked="" type="radio"/> Yes	No	N/A	5. Do monthly operating reports show pollutant concentrations below monthly average concentrations shown in OAC 3745-40-05(F)(3)?
Yes	<input checked="" type="radio"/> No	N/A	6. Are general requirements and management practices applied for sewage sludge not meeting monthly average concentrations shown in OAC 3745-40-05(F)(3)?
<input checked="" type="radio"/> Yes	No	N/A	7. Are sewage sludge records adequate to assess compliance with annual and/or cumulative pollutant loading rates?
<input checked="" type="radio"/> Yes	No	N/A	8. Are pathogen and vector attraction reduction method descriptions and certification statements available for the previous five years?
<input checked="" type="radio"/> Yes	No	N/A	9. Are records available for all sewage sludge use or disposal practices available for the previous five years?
Yes	No	N/A	10. Have the facility's sewage sludge sites been tested for pH and Phosphorus within two years of land application? <i>Not able to determine Need to Verify with Midwest</i>
<input checked="" type="radio"/> Yes	No	N/A	11. Are accurate records of sewage sludge volume or mass maintained for the previous five years?
<input checked="" type="radio"/> Yes	No	N/A	12. Are monitoring and analysis being performed more frequently than required by the facility's NPDES permit?
<input checked="" type="radio"/> Yes	No	N/A	If so, are the results being reported to Ohio EPA?
<input checked="" type="radio"/> Yes	No	N/A	13. Do sewage sludge treatment unit operation records verify compliance with pathogen reduction and vector attraction reduction requirements, when appropriate?
<input checked="" type="radio"/> Yes	No	N/A	14. Are sewage sludge samples taken at the locations specified in the facility's NPDES permit? <i>From sludge storage tanks, mixed tank is actually</i>
<input checked="" type="radio"/> Yes	No	N/A	15. Are sewage sludge sample locations and methods appropriate for obtaining representative samples?

Yes	No	N/A	16. Sample collection procedures:
<input checked="" type="radio"/> Yes	No	N/A	A. Adequate sample volumes obtained?
<input checked="" type="radio"/> Yes	No	N/A	B. Proper preservation techniques utilized?
<input checked="" type="radio"/> Yes	No	N/A	C. Containers conform to appropriate analytical methods specified in OAC 3745-40?
<input checked="" type="radio"/> Yes	No	N/A	D. Samples analyzed within the appropriate time frames specified in OAC 3745-40?
<input checked="" type="radio"/> Yes	No	N/A	17. Are analytic results reported on a dry weight basis (mg/kg)?
<input checked="" type="radio"/> Yes	No	N/A	18. Are samples refrigerated subsequent to compositing?
<input checked="" type="radio"/> Yes	No	N/A	19. Are chain-of-custody procedures employed?
<input checked="" type="radio"/> Yes	No	N/A	20. Are the analytic methods used approved in OAC 3745-40?
Comments: =			Fecal samples generally run immediately
→			Samples for Jones and Henry collected Tuesday and

Wednesday