



State of Ohio Environmental Protection Agency

**Northwest District Office**

347 North Dunbridge Road  
Bowling Green, OH 43402-9398

TELE: (419) 352-8461 FAX: (419) 352-8468  
www.epa.state.oh.us

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

Re: Putnam County  
Columbus Grove WWTP  
Sludge Correspondence

July 25, 2007

Mr. Jeff Vance, Administrator  
Village of Columbus Grove  
113 E. Sycamore  
Columbus Grove, OH 45830

Dear Mr. Vance,

On June 11, 2007, Mr. Andrew Gall conducted an inspection at the Columbus Grove Wastewater Treatment Plant (WWTP) to determine compliance with the Ohio Sewage Sludge Rules, Chapter 3745-40 of the Ohio Administrative Code. You and Mr. Robert Huff were present and provided information on sludge operations and record keeping. The inspection included a walk through the plant, a review of the sewage sludge records, and completion of the enclosed checklist.

Records to verify that you have met a Class B pathogen reduction alternative need to be maintained. Alternative 2, PRSP 3- Anaerobic Digestion has been submitted as your alternative however appropriate documentation of mean cell residence time (MCRT) (days) and temperature were not available. The values for MCRT and temperature shall be between 15 days at 95-131°F and 60 days at 20°C (68°F). We also discussed the requirements for meeting Class B pathogen reduction alternative one - the geometric mean of seven fecal coliform samples must be less than 2,000,000 MPN/g. **Within thirty (30) days of receiving this letter we request that the Village submit written verification to this office indicating which pathogen reduction option will be met and begin maintaining records to show compliance.**

It was indicated during the inspection that vector attraction reduction option ten (immediate incorporation) is being performed. However, records to verify compliance with this requirement were not available. A record of the date and time of sludge application and the date and time of incorporation need to be developed and maintained. We also discussed the requirements of VAR option one (38% volatile solids reduction). **Within thirty (30) days of receiving this letter, submit written verification to Ohio EPA as to how the VAR requirements will be satisfied.**

As part of a land application program, proper field records must be maintained, as outlined in Ohio Administrative Code (OAC) 3745-40-06. During the inspection proper field records to indicate compliance were unavailable. Proper field records include Ohio EPA sludge site authorization letters, the date sludge was hauled and the amount hauled, signage posting dates, agronomic rate calculations and soil testing records. Soil tests for pH and phosphorous

Mr. Jeff Vance  
July 25, 2007  
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need to be no more than 2 years old when sludge is applied, please refer to OAC 3745-40-06(E). **Within thirty (30) days of receiving this letter, please submit copies of field records from 2005 to the present to this Office. In addition, please submit verification that the Village has signs that indicate sludge has been applied to a field; refer to OAC 3745-40-04(H).**

During the inspection it was indicated that there is approximately 90-100 days sludge storage capacity at the WWTP. Ohio Administrative Code (OAC) 3745-40-04(T) states that "facility storage of sewage sludge shall consist of one hundred twenty days sewage sludge storage for the design capacity of the treatment works. **Therefore, we request that the Village evaluate the sludge storage capacity currently available at the wastewater treatment plant and if needed, submit a PTI application and detail plans for construction upgrades at the plant to attain 120 days of sludge storage as soon as possible.**

The Village of Columbus Grove's sewage sludge disposal program is not in compliance with OAC 3475-40. Land application of sludge shall not continue until all of the above issues have been resolved and the Village has submitted written verification that it is in compliance with Ohio Sewage Sludge Rules which can be found on the internet at ([http://www.epa.state.oh.us/dsw/policy/01\\_28u.pdf](http://www.epa.state.oh.us/dsw/policy/01_28u.pdf) ). 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](mailto:andrew.gall@epa.state.oh.us)

Sincerely,



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

/lb

Enclosures

pc: Mayor and Council  
DSW-NWDO File



# SEWAGE SLUDGE LAND APPLICATION INSPECTION

Date of Inspection: 6/11/2007

Inspector Name: Andrew Gall

Facility Name: Village of Columbus Grove

Facility Address: 300 Wayne St.
City: Columbus Grove
Zip: 45830

Mailing Address: Jeff Vance 113 E. Sycamore
City: Columbus Grove
Zip: 45830

### Contacts Present

Name: Jeff Vance / Robert Huff
Title: Village Administrator / Operator/Supr
Phone: (419) 659-2982
Fax: (419) 659-2611

### Sludge Contractor

Name: NONF
Contact:
Phone:
Fax:

## I. Facility Information

### Facility Background

Average Daily Flow (MGD)	350,000 gpd $\approx$ 0.4 ADF
Sewage Sludge Class	EQ (B) Unknown
Sewage Sludge Storage Capacity (Days)	90-100 days wet, then to drying beds
Contracted Alternative (if applicable)	$\rightarrow$ Landfill if needed

### Facility Sewage Sludge Treatment Process(es)

Treatment Process	# Units	Notes
- Aerobic Digester	1	106,000 gallons
Drying Beds	2	1,600 sq. ft each $\times$ 2 ft depth
		$\rightarrow$ 1 ton waste to drying beds each month


## 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)? - Parts for sludge pumps, 1 pump installed
<input checked="" type="radio"/> Yes No N/A	3. Does the facility have any plans for upgrades to any of the sewage sludge treatment units?  If so, explain: Yes, as part of CSO LTER Working with Poggeneger Design Group New Pumps, Liquid Hauling ??, Additional storage capacity
<input checked="" type="radio"/> Yes No N/A	4. Does the facility have a contingency plan for sewage sludge disposal? Landfill if needed
Yes No N/A	5. Is the sewage sludge handling operation adequate to manage the volume of sewage sludge generated?
Comments:	

### Drying Beds, Gravity Thickener, Centrifuge, and Dissolved Air Floatation

N/A

Average percent (%) solids before thickening:	??	Average percent (%) solids after thickening:	48.6%
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off bed

Yes 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?

→ Only digester sludge fed to bed

→ Sewer cleanings put in bed as well when main line is cleaned

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

N/A

	1. Sewage sludge fed to the aerobic digester includes: <input checked="" type="checkbox"/> Primary ..... <input checked="" 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) <input checked="" type="checkbox"/> Ambient Air Temperature
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"/>
<b>Comments:</b>	

**Land Application**

N/A

	1. Sewage sludge is applied to: <input checked="" type="checkbox"/> Authorized Sewage Sludge Site - <i>Niswander Farm</i> <input type="checkbox"/> Unauthorized Sewage Sludge Site - <i>North Side Industrial Park</i> <input type="checkbox"/> Forest <input type="checkbox"/> Reclamation Site <input type="checkbox"/> Lawn or Garden <input type="checkbox"/> Public Contact Site (ie. park, etc.)
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→ need to locate site authorization

→ need to track amount applied

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)?

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):  *Not kept*

Average temperature (°C):  ~~103~~ 130 °F

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):  *Sludge in winter 28°F in summer 135°F*

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.

*Need to keep records of sample results*

Yes  No  N/A

4. Are the Class B signage requirements being satisfied?

*Metals - March, June, August, December*  
*Monthly - Ammonia, Nitrogen Kjeldahl, Phos, Sludge weight, Sludge % Solids, % Volatile Solids*

Yes No N/A

Alfalfa  
Corn  
Soybeans  
Wheat

5. Are Class B site restrictions being practiced (indicate restrictions being performed)?

~~NA~~  Food crops (above ground) are harvested >14 months after sewage sludge application.

~~NA~~  Food crops (below ground) are harvested >20 months after sewage sludge application when sewage sludge remains on ground >4 months before soil incorporation.

~~NA~~  Food crops (below ground) are harvested >38 months after sewage sludge application when sewage sludge remains on ground <4 months before soil incorporation.

~~W~~  Food crops, feed crops, and fiber crops are harvested >30 days after sewage sludge application.

~~W~~  Animal grazing allowed on land only >30 days after sewage sludge application.

~~NA~~  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.

~~NA~~  Public access restricted to land with a high potential for public exposure for 1 year.

~~NA~~  Public access restricted to land with a low potential for public exposure for 30 days.

<p>Yes No N/A</p>	<p>6. Are bulk sewage sludge site restrictions being practiced (indicate restrictions being performed)?</p> <p><input checked="" type="checkbox"/> No threatened or endangered species present or critical habitat affected at the site where sewage sludge is applied.</p> <p><i>Late fall application</i>  <input type="checkbox"/> Bulk sewage sludge is not applied to frozen or snow covered ground unless applied &gt;100 feet from waters of the state and appropriate ground cover maintained. <i>NA</i></p> <p><input checked="" type="checkbox"/> Bulk sewage sludge is not applied &lt;33 feet from waters of the state.</p> <p><input checked="" type="checkbox"/> Bulk sewage sludge is applied at a rate equal or less than the agronomic rate.</p> <p><i>Need to copy from</i>  <input 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>
<p>Yes No N/A</p>	<p>7. Are bulk sewage sludge general requirements being practiced (indicate restrictions being performed)?</p> <p><input checked="" type="checkbox"/> Sewage sludge is not applied to a site where the cumulative pollutant loading or annual application rate has been reached..</p> <p><i>Need to give to farmer</i>  <input type="checkbox"/> Notification given to the sludge applier regarding total nitrogen content of the sludge.</p> <p><input type="checkbox"/> Sufficient information required to comply with OAC 3745-40.</p> <p><i>Need to verify letter</i>  <input type="checkbox"/> Sewage sludge site authorization packet submitted to Ohio EPA regarding the location of land application sites, appropriate NPDES permit numbers.</p>

*was sta*

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

**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? <i>Expired in September 2006</i></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>Yes No N/A</p>	<p>5. The facility is utilizing sewage sludge land application sites that have been previously authorized by Ohio EPA. <i>- Check for letter</i></p>
<b>Comments:</b>	

Yes No N/A	16. Sample collection procedures: <i>Test America, Dayton</i>
<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? <i>Send Immediately</i>
<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)?
Yes <input checked="" type="radio"/> 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:	

- Check on sludge pH test requirements

**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?
<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	No	<input checked="" type="radio"/> 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)?
Yes	No	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> No	N/A	10. Have the facility's sewage sludge sites been tested for pH and Phosphorus within two years of land application?
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?
Yes	<input checked="" type="radio"/> 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?
<input checked="" type="radio"/> Yes	No	N/A	15. Are sewage sludge sample locations and methods appropriate for obtaining representative samples?

*Quarterly monthly*

*Need to test or obtain former results*

*Need to complete ASR for 06*