

February 2008

Fact Sheet

Land Application Systems

Rule 3745-42-13 of the Ohio Administrative Code

Note: This fact sheet is provided to assist the reader with understanding the land application systems rule and is not intended to be used in lieu of the rule.

What does OAC 3745-42-13 cover?

Ohio Administrative Code (OAC) 3745-42-13 covers the permit application and the operating and maintenance requirements for a land application of treated sewage system. Any existing or proposed disposal system that includes the land application of treated, domestic sewage will be covered by this new rule.

What is land application of treated sewage?

Land application of treated sewage is a process that reuses or recycles treated sewage in a manner that minimizes or eliminates the discharge of pollutants to waters of the state, including Ohio's streams, rivers and lakes.

A land application of treated sewage system consists of a sewage treatment works that typically utilizes spray-irrigation to land apply all or a portion of the treated sewage to sites such as golf courses, recreational fields or farmland.

What DOESN'T the rule cover?

This rule does not cover:

- Soil absorption systems (such as leach field systems, sub-surface drip irrigation systems or mound systems); or
- The land application of:
 - Domestic, commercial or industrial septage;
 - Sludge;
 - Grease; or
 - Industrial waste.

Is land application new?

No.

- Deer Creek State Park has practiced effluent reuse since the 1970s.
- The Union City, Ohio WWTP has practiced spray irrigation since the mid 1980s.
- Since 1996, there have been several installations in Ohio, including Scioto Reserve, a golf course community located in Delaware County.

What are the features of a land application system?

A land application system can:

- Reduce potable water use for irrigation for targeted receptors (e.g. nurseries, golf courses, parks, etc.);

- Offer another option to on-lot disposal systems & small package plants;
- Be a "short-term" option until sewers reach an area;
- Offer a decentralized "cluster" of "farm village" developments, placing fewer burdens on a public utility to extend public sewers in areas where they are not feasible; or
- Be coupled with a controlled discharge to offer flexibility.

What is the regulatory "big picture"?

- Rule 3745-1-05 of the OAC requires an applicant to evaluate alternatives other than a point source discharge.
- Rule 3745-42-13 of the OAC provides the regulatory oversight for the design, construction and operation and maintenance of land application systems.
- Chapter 3745-42 of the OAC contains other rules relevant to a permit to install application.
- Chapter 3745-33 of the OAC contains other rules relevant to an NPDES permit.

What are the application



submittal requirements?

The following is required for any land application system installed after July 1, 2007:

- A soil and site evaluation;
- A permit to install; and
- A land application management plan.

1. The following may be required for any land application system installed after July 1, 2007:

- An NPDES permit;
- A ground water monitoring program; or
- A land application contract.

How do I find the permit to install requirements for my project?

The permit to install requirements are based on the following:

- The design flow; and
- The land application rate, in inches per acre per year.

A **Quick Reference Table** that will assist you with determining the requirements is provided at the end of this fact sheet.

What are the key points of a land application management plan (LAMP)?

A LAMP:

- Is always required;
- Is initially effective for 5 years;
- Is renewable every 5 to 10 years; and
- Has a fee of \$200.00, unless submitted as part of an NPDES permit. If submitted as part of an NPDES permit, the NPDES permit fee of \$200.00 covers both.

Is an NPDES permit always required?

No. An NPDES permit is required for a “discharging land application system”.

Does the rule apply to existing systems?

Yes. However, the requirements for land application systems installed prior to July 1, 2007 can vary, based on the individual case. There are LAMP and NPDES submittal requirements by July 1, 2012.

What are some important definitions?

1. “Discharging land application system” means a land application system that:

(a) Regardless of whether a land application contract allows isolation distance requirements to be waived, does not meet the isolation distance requirements in this rule;

(b) Proposes to land apply on sites where drain tiles are, or will be, less than two vertical feet below final grade;

(c) Proposes to land apply on frozen or snow covered ground;

(d) Proposes to land apply during precipitation events; or

(e) Proposes a point source discharge to waters of the state.

2. “Karst” means a terrain with an assemblage of landforms such as sinkholes and caves that are due to weathering of predominantly carbonate bedrock.

3. “Lagoon” means any earthen or partially earthen

impoundment that is used for the treatment of sewage.

4. “Land application contract” means a deed showing ownership, or a contract or agreement that describes the land where treated sewage will be applied and that allows treated sewage to be land applied.

5. “Occupied building” means any building that is regularly occupied by people, is owned by a person other than the owner of the disposal system, and is located on a plat of land separate from the plat of land on which the disposal system is installed or operated. (This definition can be found in OAC 3745-42-01.)

6. “Professional soil scientist” means an individual with a baccalaureate degree with a major in agronomy, soils, or a closely allied field of principles of pedology to soil classification, investigation, education, and consultation and on the effect of measured, observed and inferred soil properties and their use, and who is a member of the Ohio association of pedologists (AOP) or the American registry of certified professionals in agronomy in crops and soil (ARCPACS).

[Comment: A list of the professional soil scientists in Ohio can be obtained from the association of Ohio pedologists’ web site. The web link for this site is: <http://www.ohiopedologist.org/>.]

7. “Storage facility” means the

part of a treatment works, such as an earthen or man-made impoundment, that is used solely for the storage of treated sewage.

8. "Total inorganic nitrogen" means the sum of nitrite-nitrogen, nitrate-nitrogen and ammonia-nitrogen.

What are the treatment classifications?

There are three treated sewage classifications:

- Class A (Table K-2)
- Class B (Table K-3)
- Class C (Table K-4)

There are effluent limits and monitoring frequencies for each treated sewage classification. A **Quick Reference Table**, provided at the end of this fact sheet, summarizes the big differences between the treatment classifications.

Where do the effluent limits need to be met?

The effluent limits for any treatment class shall be met prior to entering a storage facility, or prior to land application if a storage facility does not exist.

When is a ground water monitoring program NOT required?

There is a ground water monitoring exemption for:

1. Land application areas, provided:
 - Class A treated sewage is land applied;
 - Less than 12 inches/acre/year of Class B is land applied; or

- Less than 12 inches/acre/year of Class C is land applied.
2. Storage facilities, provided:
 - A WWTP is designed for < 1,000 g.p.d.; or
 - A WWTP is designed for < 10,000 g.p.d., and storage facility contains Class A and includes a liner per paragraph (H).

What are the ground water monitoring requirements?

If the permit to install does not meet a ground water monitoring exemption, a ground water monitoring program is required for:

- Land application areas;
- Storage facilities; and
- Lagoons.

What shall the ground water monitoring program include?

A ground water monitoring program shall include:

- At least three monitoring wells (one up-gradient and two down-gradient) for each land application area, storage facility or lagoon;
- A schedule for semi-annual samples analyzed in the field;
- A schedule for semi annual samples processed at a lab;
- A contingency plan for downstream receptors; and
- Monitoring well abandonment procedures, in accordance with rule 3745-9-10 of the OAC.

What are the record retention requirements?

Record retention is required for at least five years, including records for:

- Pollutant sampling;
- Inflow and outflow monitoring; and
- Storage impoundment monitoring for freeboard and the number of days of remaining storage.

When shall the director be notified?

- The director shall be notified in writing within seven days of any person discovering noncompliance with a land application management plan or an NPDES permit.
- The director shall be notified at least six months prior to the expiration date of a land application contract.

Where can I get a copy of the complete rule?

This rule is located on the internet at:

www.epa.state.oh.us/dsw/rules/3745-42.html.

Where can I get additional information?

Go to the Division of Surface Water's Web site at: www.epa.state.oh.us/dsw, or contact Elizabeth Bailik by e-mail at elizabeth.bailik@epa.state.oh.us, or by phone at (614) 644-2039.

Quick Reference Tables

1. Permit to install application requirements:

Design Flow (g.p.d.)	Land Application Rate (inches/acre/year)	Refer to Paragraph:
< 10,000	≤ 12	(F)(1)
	> 12	(F)(2)
≥ 10,000	≤ 12	(F)(3)
	> 12	(F)(4)

2. Differences between the sewage treatment classifications*:

	<u>Class A</u>		<u>Class B</u>		<u>Class C</u>	
	30 day average	Daily max	30 day average	Daily max	30 day average	Daily max
TSS	12 mg/l	--	45 mg/l	--	45 mg/l	--
CBOD ₅	10 mg/l	--	40 mg/l	--	40 mg/l	--
Fecal coliform	ND in 4 of 7	14 cfu/100 ml	--	1,000 cfu/100 ml	--	2,000 cfu/100 ml
E. coli	ND in 4 of 7	2 cfu/100 ml	--	126 cfu/100 ml	--	298 cfu/100 ml

* Please refer to the rule for a complete list of the effluent limitations for each sewage treatment classification.

** Additional Notes:

ND = non-detect
 cfu = colony forming unit(s)
 mg/l = milligram(s) per liter