

OSSF Topics

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Topics

- Restaurant design and non-standard treatment systems
- Aerobic treatment unit sizing for multiple residences
- Surface Application Design – One Common Mistake
- Sewage which should not be in OSSFs
- Licensed Maintenance Provider Status

OSSF Designs for Restaurants The Rules

- When designing for restaurants, food service establishments, or similar activities, the minimum design strength value shall be 1,200 mg/l Biochemical Oxygen Demand (BOD) after a properly sized grease interceptor

OSSF Designs for Restaurants The Rules

The design will always be a non-standard treatment system.

- TCEQ approved proprietary units - Approved for domestic strength wastewater. Multiple aerobics can be used as components in an overall treatment system, but the overall treatment system is considered non-standard - 285.32(c)(5)(A)(ii)
- Package Plants - Since they are not on the TCEQ approved list, they must be submitted as non-standard units
- Build-it-yourself treatment units – Classified as non-standard

OSSF Designs for Restaurants The Rules

Non-Standard Design Requirements

- If secondary treatment is required, a P.E. must do the design
- Otherwise, an R.S. can do the design.

OSSF Designs for Restaurants Common Designs

- Multiple aerobic treatment units
- Package wastewater treatment plants
- Build-it-yourself treatment plants

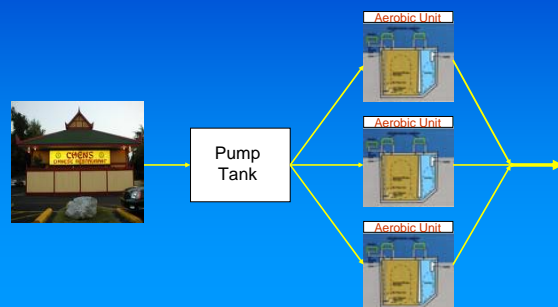
OSSF Designs for Restaurants What Not To Do

Aerobic Treatment Plants in Series



OSSF Designs for Restaurants A Better Approach

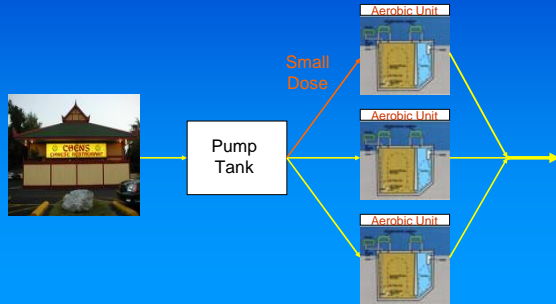
Dosing Aerobic Treatment Plants in Parallel



OSSF Designs for Restaurants

A Better Approach

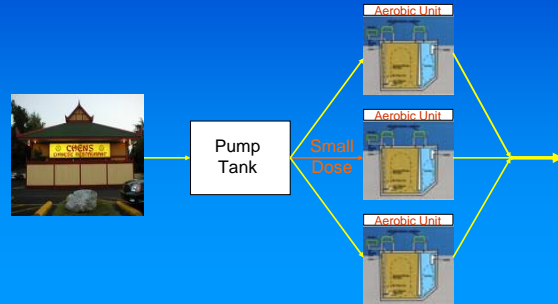
Dosing Aerobic Treatment Plants in Parallel



OSSF Designs for Restaurants

A Better Approach

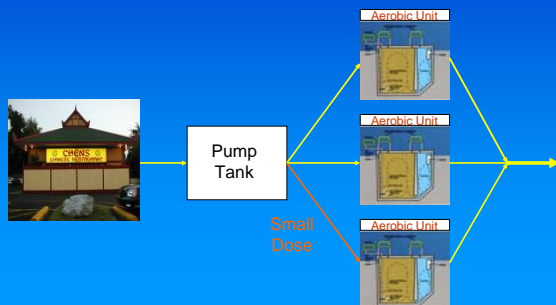
Dosing Aerobic Treatment Plants in Parallel



OSSF Designs for Restaurants

A Better Approach

Dosing Aerobic Treatment Plants in Parallel



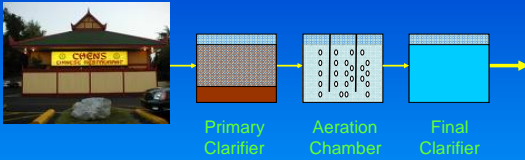
OSSF Designs for Restaurants

Package Plant



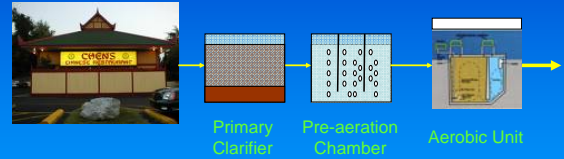
- Cannot be presented with a trademark
- Must be a non-standard treatment system
- Must meet basic engineering and scientific principles. Usually, we use Chapter 217 design requirements

OSSF Designs for Restaurants Build It Yourself Treatment Plant



- Must be a non-standard treatment system
- Must meet Chapter 217 design requirements

OSSF Designs for Restaurants Build It Yourself Treatment Plant Another Option



Monitoring Conditions

- Testing and reporting requirements should be conditions of permit
- Require frequent testing at startup
- Relax frequency if performance is acceptable

ATU Sizing for Multiple Residences An Example



3 Bedroom Home
(1,400 sq. ft.)



5 Bedroom Home
(3,800 sq. ft.)

Property Boundary

Aerobic Treatment Unit Sizing for Residences

Number of Bedrooms/living area of home	Minimum Aerobic Tank Treatment Capacity
Three bedrooms and < 2,501 sq.	400
Four bedrooms and < 3,501 sq. ft. or Less than four bedrooms and 2,500 < sq. ft. <3,501	480
Five bedrooms and < 4,501 sq. ft. or Less than five bedrooms and 3,500 < sq. ft. < 4,501	600
Six bedrooms and < 5,501 sq. ft. or Less than six bedrooms and 4,500 < sq. ft. <5,501	720

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+

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ATU Sizing for Multiple Residences An Example



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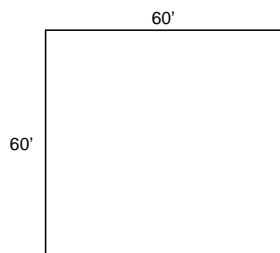
1000 gallons of treatment capacity

Surface Application Design

One Common Mistake

Surface Application An Example Design

3,600 sq. ft. needed

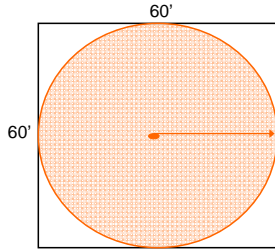


Surface Application An Example Design

PGP Gray Low Angle Nozzle Performance Data			
Nozzle	Pressure PSI	Radius ft.	Flow GPM
4	30	22'	1.4
	40	24'	1.7
	50	26'	1.8
5	30	25'	1.6
	40	27'	1.9
	50	28'	2.1
6	30	27'	2.1
	40	30'	2.3
	50	32'	2.8
7	30	29'	2.8
	40	32'	3.1
	50	35'	3.8
8	30	31'	3.4
	40	34'	3.9
	50	37'	4.4
9	30	33'	4.3
	40	37'	5.0
	50	40'	5.6
10	30	42'	6.1
	40	38'	6.5
	50	42'	8.0

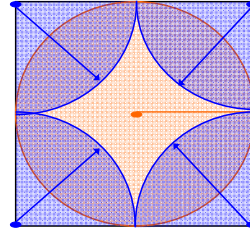
Surface Application An Example Design

3,600 sq. ft. needed



Surface Application An Example Design

3,600 sq. ft. needed



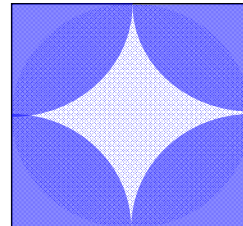
Surface Application An Example Design

PGP Gray Low Angle Nozzle
Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM/ft
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	50	35'	3.5
8	30	31'	3.4
	40	34'	3.9
	50	37'	4.4
9	30	33'	4.3
	40	37'	5.0
	50	40'	5.4
10	30	38'	6.5
	40	42'	7.3
	50	42'	8.0

Surface Application An Example Design

End Result
Very Uneven Distribution



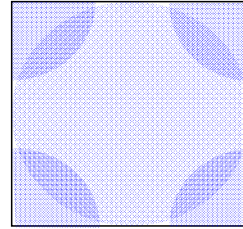
Surface Application An Example Design

PGP Gray Low Angle Nozzle Performance Data

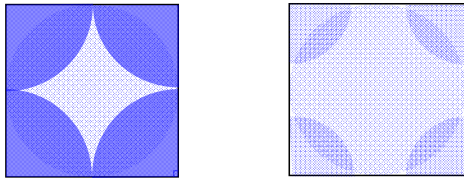
Nozzle	Pressure PSI	Radius in	Flow GPM
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	50	24"	1.8
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	50	28"	2.1
6	30	27"	2.1
	40	30"	2.5
	50	33"	2.8
7	30	29"	2.5
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	60	42"	8.0

Surface Application An Example Design

End Result
Much Better Distribution



Surface Application An Example Design A Comparison



What to do about
Properties
Generating Non-Domestic
Sewage

Chapter 285 Definition of Sewage

- Is primarily organic and biodegradable or decomposable; and
- Originates as human, animal, or plant waste from certain activities, including the use of toilet facilities, washing bathing and preparing food.

OSSF Design Theory Based on Chapter 285 Definition of Sewage

- OSSF devices such as septic tanks, aerobic treatment units, and soil based treatment systems were designed to provide treatment for sewage
- Consequently, an OSSF receiving other types of wastewater may not be protective of public health and the environment

Permitting, Installing or Operating OSSFs not receiving sewage as defined by Chapter 285 is:

- Not legal under Chapter 285
- Not protective of public health and the environment

Facilities which generate both "sewage" and "non-sewage"

- Medical buildings, industrial sites, car washes, laboratories, etc.
- What do we do with these facilities?
- Simplest answer: Segregate the "non-sewage" out and into a holding tank

Who Permits the Holding Tank?

- Although holding tanks are allowed, they are not officially permitted, either by the authorized agent or the TCEQ
- It is the responsibility of the property owner to insure that the tank is pumped by a hauler, and notify the hauler of the contents
- It is the hauler's responsibility to properly dispose of the wastewater

Questions