Accelerated Certification Training
Part I (MC Part I) – Onsite Wastewater Concepts, Materials, Regulations and the Application Process

HANDOUTS, SAMPLE FORMS, CLASSROOM EXERCISES & Additional Information

Contents

In addition a large resource of information including; forms, memos, reports, rules and more can be found on the Bureau's Website at: www.myfloridaeh.com/ostds

ONSITE SEWAGE PROGRAM ACCELERATED CERTIFICATION TRAINING

ONSITE WASTEWATER CONCEPTS, MATERIALS, REGULATIONS & THE APPLICATION PROCESS

MASTER CONTRACTOR PART I

AGENDA

Day 1 – Monday 8:00 AM-5:15 PM (6 CEUs)

8:00 – 8:15 Welcome, Introduction and Course Overview

8:15 – 9:30 **A - Basic Concepts In Wastewater Treatment** (1.25 Credit Hours: R, M, and C)

Overview
- Advantages and Importance of Onsite Wastewater Treatment Systems

Wastewater Composition
- Human Body Wastes and Characteristics, Water Use and Wastewater Segregation
- Pollutant Concentrations in Wastewater, Waterborne Pathogens associated with Sewage
- Nitrate Contamination, Phosphorus, Volatile Organic Compounds
- Septic Tank Functions and Effluent Characteristics
- Biomat and Treatment
- Advanced Treatment Systems (Constituents, Treatment Levels)
  - Aerobic Treatment Units and Performance Based Treatment Systems

9:30 – 10:15 **B - Onsite Sewage Systems Methods & Materials** (0.75 Credit Hours: R, M, and C)

- Treatment Receptacles, concrete, fiberglass and polyethylene (plastic)
  - Septic, laundry, grease traps and dosing receptacles
  - Legends, manholes, seals, sealants and filters
- Distribution methods and materials
  - Gravity and lift-dosing (d-boxes and headers), mound, filled and standard systems
  - Pressure (Low pressure and drip system materials)
- Baseline (soil based) and alternative drainfields and drainfield materials
  - Mineral aggregate and alternative drainfield products, classroom demonstration of aggregate samples
  - Reductions vs. comparable ratings
  - Absorption bed vs. trench

10:15 – 10:30 **BREAK**

10:30 – 11:00 **B - Onsite Sewage Systems Methods & Materials – Continued** (0.5 Credit Hours: R, M, and C**)**

11:00 – 12:00 **C - State Regulations of Onsite Sewage Treatment and Disposal Systems** (1.0 Credit Hours: R, M, and C)

- Chapters 120, 381 and 489, Florida Statutes (Regulations not specifically in rule such as Suwannee/Aucilla River and roof-runoff requirements, time frames, rights to hearings, 381 variances, jurisdiction, sewer availability)
- EH Technical Manual 150-4
- Chapter 64E-6, Florida Administrative Code State Regulations of Onsite Sewage Treatment and Disposal Systems
- Interagency Agreements in the Onsite Sewage Program (DEP, DBPR, DACS, DCF, APD, AHCA), Operating Permits

12:00 – 1:00 **LUNCH (Provided)**

1:00 – 2:00 **D - New Permit Applications and Site Plans** (1.0 Credit Hours: R, M, and C)

- Permit Application, Agent Authorization, Property Ownership, Sizing Criteria: property size, water supply, date lot subdivided or recorded, estimated sewage flow, authorized sewage flow
- Site Plan, Setbacks

2:00-2:15 **BREAK**

2:15- 3:15 **E - Site Plan Review Classroom Exercise** (1.0 Credit Hours: R, M, and C)

- Sample applications and site plans

3:15- 3:45 **Review and Questions** (0.5 Credit Hours: R, M, and C)

3:55- 5:15 **EXAMINATIONS - Onsite Wastewater Concepts, Materials Regulations & the Application Process / Master Contractor Part I**

Onsite Wastewater Concepts, Materials, Regulations & the Application Process / Master Contractor Part I Certification Examination will consist of 50 questions, both multiple choice and true/false. You are allowed one hour and twenty minutes to complete the exam. Examinations will be graded as completed by the student, and 70% is the minimum passing score. Those students who do not pass the exam will be given the opportunity to review their examinations. A second examination will be given after the review period. A participant who does not achieve a minimum score of 70% on the second test will be required to take the course over, as will any participant who does not take the second test on the same day. Please note examination time does not qualify for CEUs.

Septic Systems Fact Sheet

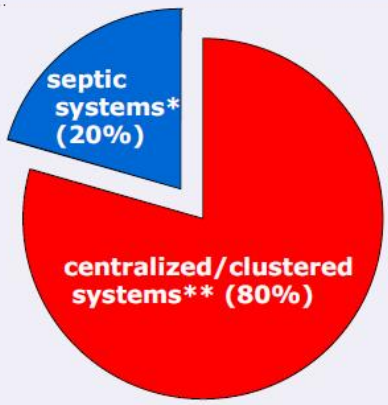
Office of Wastewater Management | Decentralized Wastewater Program

This fact sheet presents data on soil-based septic systems collected by the U.S. Census Bureau for the 2007 American Housing Survey, based on a sampling of 55,000 housing units.

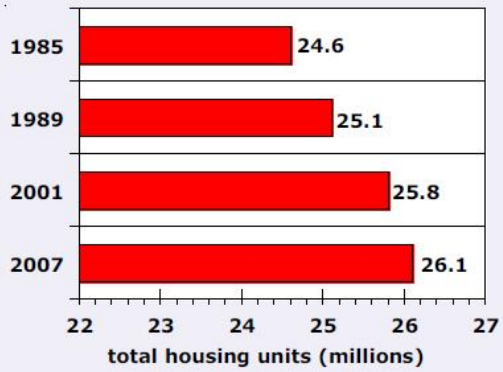
Septic System Use

- In 2007, an estimated **20 percent** (26.1 million) of total U.S. housing units were served by septic systems. This is an increase of 1.54 million septic systems since 1985.
- In 2007, **22 percent** (1.6 million) of all housing units less than 4 years old used septic systems.

Total housing units served by septic and centralized/ clustered systems



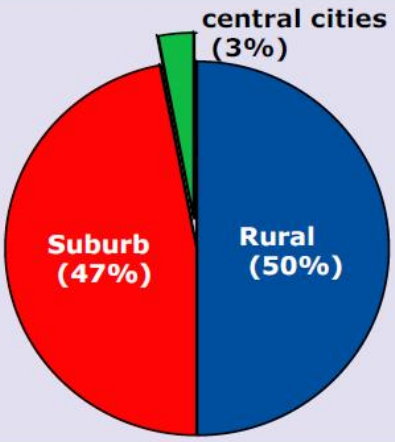
Total housing units served by septic systems



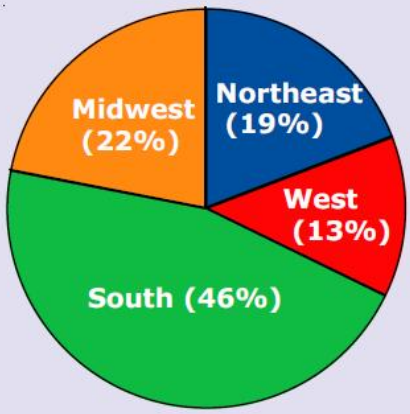
Demographics

- In 2007, **50 percent** (13.1 million) of total housing units with septic systems in the United States were in rural areas, **47 percent** (12.3 million) were in suburbs, while **3 percent** (774,000) were found in central cities.
- In 2007, **46 percent** (10.1 million) of occupied housing units with septic systems were located in the southern region of the United States, followed by the midwest with **22 percent** (4.8 million), the northeast region with **19 percent** (4.2 million), and the west with **13 percent** (2.9 million).

Total housing units served by septic systems, by rural/ urban/suburban classification



Occupied housing units served by septic systems, by U.S. Region***



**Total housing units served by a soil-based septic system for 5 or fewer units. **Total housing units connected to a city, county, sanitary district, neighborhood, or subdivision sewer system serving 6 or more units (includes centralized and clustered onsite systems). ***Based on occupied housing units served by a soil-based septic systems (total housing units not available by region). Source: U. S. Census Bureau - American Housing Surveys for the United States, 1985 through 2007, Tables 1A-4, 1B-4, 1C-4, 1D-4, and 2.4.*

The American Housing Survey is conducted by the U.S. Census Bureau, Housing and Household Economic Statistics Division every two years to determine up-to-date housing statistics. Field data cover an average of 55,000 housing units. A sample of housing units in all survey areas was selected from the decennial census. The survey goes back to the same housing units on a regular basis, recording changes in characteristics, adding and deleting units when applicable. This cross-sectioning of the housing inventory gives a picture of houses and households as they change over long periods of time. Since these estimates are based on samples, they may differ from the results that would have been obtained if a complete census had been taken under the same interviewing conditions.
Web site - www.census.gov/hhes/www/housing/ahs/ahs.html

Measurement of Wastewater Pollutants/Contaminants

BOD (Biochemical Oxygen Demand)	The test measures the amount of dissolved oxygen organisms need to degrade wastes in wastewater. Also referred to as CBOD5. (Carbonaceous Biochemical Oxygen Demand).
TSS (Total Suspended Solids)	A portion of wastewater that has resisted settling, that is retained when passed through a filter. Also indicates wastewater clarity. Can clog the soil absorption system.
TN (Total Nitrogen)	There are 3 forms of nitrogen that are commonly measured: ammonia (NH4), nitrates (NO3) and nitrites (NO2). Total Nitrogen is the sum of total Kjeldahl nitrogen (organic and reduced nitrogen), ammonia and nitrate-nitrite. (TKN)
TP (Total Phosphorus)	Occurs in wastewater bound to oxygen to form phosphates. Phosphates are classified as orthophosphates, polyphosphates and organic phosphates.
Fecal Coliform	Used as indicator organism for the presence of pathogens and used to determine if wastewater has been adequately treated.
FOG (Fats, Oils and Greases)	The combination of fats, oils, and greases and other related constituents in wastewater. Excessive FOG can clog systems, create odors and increase BOD.

BOD – biochemical oxygen demand

The BOD test measures the amount of dissolved oxygen organisms are likely to need to degrade wastes in wastewater. This test is important for evaluating both how much treatment wastewater is likely to require and the potential impact that it can have on receiving waters.

To perform the test, wastewater samples are placed in BOD bottles and are diluted with specially prepared water containing dissolved oxygen. The dilution water is also "seeded" with bacteria when treated wastewater is being tested. The amount of dissolved oxygen in the diluted samples is measured using a dissolved oxygen meter, and the samples are then stored at a constant temperature of 20 degrees Celsius (68 degrees Fahrenheit). Common incubation periods are five, seven, or twenty days; five days (or BOD5) is the most common. At the end of the incubation period, the dissolved oxygen is measured again. The amount that was used (expressed in milligrams per liter) is an indication of wastewater strength. Refer to the Table 2 for some typical BOD amounts. For an in-depth explanation of BOD and testing wastewater, refer to the module Fundamental Microbiology of Sewage. http://www.cet.nau.edu/Projects/WDP/resources/Microbiology/index.html

TSS – total suspended solids

In addition to BOD, estimating the amount of suspended solids in wastewater helps to complete an overall picture of how much secondary treatment is likely to be required. It also indicates wastewater clarity and is important for assessing the potential impact of wastewater on the environment.

After large solids are removed in primary treatment, TSS is measured as the portion of solids retained by a 2.0-micron filter. Refer to the Table 2 for some typical TSS amounts.

N - Nitrogen–

Nitrogen forms that are important in wastewater include organic nitrogen, nitrate (NO_3^-), nitrite ($NO2^-$), ammonia (NH_4^+), and nitrogen gas (N_2). All of these forms are biochemically interconvertible.

- **Organic nitrogen** is nitrogen bound to carbon. It is the principle nitrogen constituent in feces. Organic nitrogen also includes urea (H_2NCONH_2), which is the principal compound in urine. Organic nitrogen is not readily available to plants; it needs bacterial conversion to nitrate before it is available for plants.

- **Nitrate** is the most oxidized species of nitrogen. Nitrate is readily available to plants and is considered the *limiting nutrient* (the nutrient that keeps the biotic system in balance) for primary productivity in salt waters, an important consideration in the design of onsite systems along coastal areas. Because nitrate, in solution, is a negative ion, it will not bind to soil, which is also negatively charged. Therefore, nitrate passes through soil to groundwater, which is why regulatory agencies may be requiring some onsite systems to provide nitrogen reduction in the effluent. Nitrate is also the species of nitrogen for which a limit has been set for drinking water (10 mg/L) due to blue baby syndrome.

- **Nitrite** is not usually observed in water sources because it is readily converted to nitrate by bacterial processes; however, it is extremely toxic to most fish and other aquatic species. Also, nitrites are oxidized by chlorine and can, therefore, increase the chlorine dosage requirements and the cost of disinfection.

- **Ammonia** exists in water as either the ammonium ion (NH_4^+) or ammonia gas (NH_3), depending on the pH of the water. At pH levels above 9.3, ammonia gas is the predominate form, and at pH levels below 9.3, the ammonium ion is the predominant form. Ammonia is usually present in surface water and is due to the chemical oxidation of urea and anaerobic processes. Ammonia, a positive ion, binds to soil which is negatively charged; therefore, ammonia is not readily leached from the soil. Plants can readily use the ammonia form of nitrogen.

P – phosphorus

Phosphorus also exists in wastewater in many forms and includes soluble orthophosphate ion (PO_4^{-3}), organically-bound phosphate, and other phosphorus/oxygen forms. Most of the organically bound phosphate in wastewater is from excretia and food residue. Some cleaning agents still contain phosphate, although the practice of adding phosphate to cleaning agents has been vastly reduced since the 1980s. Phosphorus is usually the *limiting nutrient* in freshwater surface waters and is the principal cause of eutrophication in surface water bodies. However, phosphate rapidly combines with other naturally occurring chemicals, such as limestone, to form calcium phosphate. If a subsurface effluent distribution system is close to a sensitive water body, limestone added to the soil absorption system can stop the phosphate from migrating to the water body (Burks and Minnis, 1994).

TC and FC – total coliforms and fecal coliforms

Coliform tests are useful for determining whether wastewater has been adequately treated and whether water quality is suitable for drinking and recreation.

Because they are very abundant in human wastes, coliform bacteria are much easier to locate and identify in wastewater than viruses and other pathogens that cause severe diseases. For this reason, coliform bacteria are used as indicator organisms for the presence of other, more serious pathogens. Some coliforms are found in soil, so tests for fecal coliforms are considered to be the most reliable. However, tests for both total coliforms and fecal coliforms are commonly used. There are two methods for determining the presence and density of coliform bacteria. The membrane filter (MF) technique provides a direct count of colonies trapped and then cultured. The multiple tube fermentation method provides an estimate of the most probable number (MPN) per 100 milliliters from the number of test tubes in which gas bubbles form after incubation.

Table 3-7. Summary of Tier 1 Constituents from This Study and Previously Reported (In mg/L).

		This Study			U.S. EPA (2002)	Crites and Tchobanoglous (1998)
		Median	Range[1]	Lit. Review		
Alkalinity (as $CaCO_3$)	Raw	260	65 – 575	NR	NR	NR
	STE	411	172 – 862	NR	NR	60 – 120
TS	Raw	1,028	252 – 3,320	NR	500 – 880	350 – 1,200
	STE	623	290 – 3,665	NR	NR	NR
TSS	Raw	232	22 – 1,690	18 – 2,230	155 – 330	100 – 350
	STE	61	28 – 192	22 – 276	50 – 100	40 – 140
$cBOD_5$	Raw	420	112 – 1,101	30 – 1,147	155 – 286	110 – 400
	STE	216	44 – 833	38 – 861	140 – 200	150 – 250
COD	Raw	849	139 – 4,584	540 – 2,404	500 – 660	250 – 1,000
	STE	389	201 – 944	157 – 1,931	NR	250 – 500
TOC	Raw	184	35 – 738	NR	NR	80 – 290
	STE	105	50 – 243	NR	31 – 68	NR
DOC	Raw	110	29 – 679	NR	NR	NR
	STE	66	22 – 140	NR	NR	NR
Total nitrogen	Raw	60	9 – 240	44 – 189	26 – 75	20 – 85
	STE	63	27 – 119	26 – 124	40 – 100	NR
TKN (as N)	Raw	57	16 – 248	43 – 124	NR	NR
	STE	60	33 – 171	27 – 94	19 – 53	50 – 90
Ammonium-nitrogen (as N)	Raw	14	2 – 94	9 – 154	4 – 13	12 – 50
	STE	53	25 – 112	0 – 96	NR	30 – 50
Nitrate-nitrogen (as N)	Raw	1.9	BDL – 9	0.05 – 1.1	<1	0
	STE	0.7	BDL – 7	0 – 10.3	0.01 – 0.16	NR
Total phosphorus	Raw	10.4	0.2 – 32	13 – 26	6 – 12	4 – 15
	STE	9.8	0.2 – 33	3 – 40	7.2 – 17	12 – 20

[1] All data included, outliers were not removed
NR = not reported
BDL = below detection limits

3.3 Tier 2: Oil and Grease and Microorganisms

Tier 2 constituents included oil and grease and microorganisms providing addition information on the waste stream composition. Approximately 50% of the samples collected were submitted for oil and grease analysis. Microbial analyses were conduced on all of the samples for fecal coliform bacteria and *E. coli* while coliphage was analyzed in 20% of the samples. While fecal coliform bacteria was a Tier 1 constituent, the findings are reported in Section 3.3.2 with *E. coli* and coliphage because of similar analytical techniques.

3.3.1 Oil and Grease

Oil and grease typically originate from food wastes and other petroleum products. Oil and grease is separated in the septic tank by floatation, but problems can arise if too much oil and grease enters the septic tank. For example, oil and grease does not break down easily resulting in an increased scum layer which in turn requires more frequent pumping. If oil and grease is not effectively removed in the septic tank, subsequent buildup in pipes or the soil treatment unit may lead to clogging.

Oil and grease in raw wastewater varied from 10 to 109 mg/L (Figure 3-20), which is slightly lower compared to the values reported in the literature review of 16 to 134 mg/L. This might be due to changing lifestyle habits (e.g. use of olive oil instead of lard for cooking), but

FLORIDA PERFORMANCE STANDARDS (long-term averages)

POLLUTANT	BASELINE SYSTEM STANDARDS Septic tank (effluent) (64E-6.025(3))	BASELINE SYSTEM STANDARDS @ base of 24 inch unsaturated zone (64E-6.025(3))	AEROBIC TREAT-MENT UNIT ≤1500 gpd (effluent) (NSF-40)	SECONDARY TREATMENT STANDARDS (effluent) (64E-6.025(3))	ADVANCED SECONDARY TREATMENT STANDARD (effluent) (64E-6.025(1))	FLORIDA KEYS NUTRIENT REDUCTION TREATMENT (effluent) (64E-6.025(8))	ADVANCED WASTE-WATER TREATMENT STANDARDS (effluent) (64E-6.025(2))
$CBOD_5$ (Carbonaceous Biochemical Oxygen Demand)	**120-240 mg/l**	**< 5 mg/l**	**≤ 25 mg/l**	**≤ 20 mg/l**	**≤ 10 mg/l**	**≤ 10 mg/l**	**≤ 5 mg/l**
TSS (Total Suspended Solids)	**65-176 mg/l**	**< 5 mg/l**	**≤ 30 mg/l**	**≤ 20 mg/l**	**≤ 10 mg/l**	**≤ 10 mg/l**	**≤ 5 mg/l**
TN (Total Nitrogen)	**36-45 mg/l**	**15-25 mg/l**	**not applicable**	**not applicable**	**≤ 20 mg/l**	**≤ 10 mg/l**	**≤ 3 mg/l**
TP (Total Phosphorus)	**6-10 mg/l**	**< 5 mg/l**	**not applicable**	**not applicable**	**≤ 10 mg/l**	**≤ 1 mg/l**	**≤ 1 mg/l**
Fecal coliform	1E+4 to 1E+7 (WERF 2009)	undetected	**not applicable**	**≤ 200 fc col/100 ml**	**≤ 200 fc col/100 ml**	**Depends on Disposal**	**BDL for 100 ml**
DRAINFIELD REDUCTIONS (cBOD5 and TSS see Note 1)	not applicable	not applicable	25% in slightly limited soil	25% in slightly limited soil	40% in slightly limited soil		40% in slightly limited soil
REDUCE:							
SETBACKS							
surface water	no change	no change	no change	65 ft	50 ft		25 ft
groundwater	no change	no change	no change	no change	10 ft		10 ft
drains							
dry retention & swales	no change	no change	no change	no change	10 ft		10 ft
SEPARATIONS to SHWT	no change	no change	no change	no change	no change		12 in
INCREASE AUTHORIZED FLOWS	no change	no change	no change	25%	50%		100%

Note 1: Drainfield size reductions depend on achieving the results above for $CBOD_5$ and TSS. TN, TP and fecal coliform do not apply.

FLORIDA ONSITE SEWAGE TREATMENT and DISPOSAL SYSTEMS

ALTERNATIVE DRAINFIELD PRODUCTS AS OF March 02, 2015

Alternative Drainfield System Components (64E-6.009(7) F.A.C.)		
PRODUCT NAME / DESCRIPTION	**SIZING CRITERIA**	**Other**
ARC chamber (Effective 01/17/2012 by Infiltrator Systems, Inc.; formerly Advanced Drainage Systems, Inc.)		http://www.infiltratorsystems.com http://www.ads-pipe.com
ARC 18 (single chamber)	10.0 sq ft/chamber	0” spacing in bed
ARC 24 (single chamber) (Model # 2412BD)	15.0 sq ft / chamber 3.0 sq ft / linear foot of chamber (for cut chamber)	4”-6” spacing in bed
BIO DIFFUSER chamber (Effective 01/17/2012 by Infiltrator Systems, Inc.; formerly Advanced Drainage Systems, Inc. or Hancor, Inc.)		http://www.infiltratorsystems.com http://www.ads-pipe.com
BioDiffuser 11” Standard (marketed as Original BioDiffuser) (Model # 1100BD): Not approved for installations effective Jan 01, 2014	18.75 sq ft / chamber	
BioDiffuser 15” Narrow (marketed as Bio 2) (single chamber) (Model # 1500BD)	14.4 sq ft / chamber	
BioDiffuser 15” Narrow (marketed as Bio 2) (dual parallel chamber) (Model # 1500BD)	15.4 sq ft / chamber	Trench
BioDiffuser 22” Narrow (marketed as Bio 3) (single chamber) (Model # 2200BD)	21.6 sq ft / chamber	
CULTEC chamber by Cultec, Inc.		http://www.cultec.com
Contactor EZ24	10.75 sq ft / chamber	See memoranda HSES 01-015 and 02-006
Contactor 100	21.50 sq ft / chamber	See memoranda HSES 01-015 and 02-006
ENVIROCHAMBER (Effective 01/17/2012 by Infiltrator Systems, Inc.; formerly Hancor, Inc.)		http://www.infiltratorsystems.com
EnviroChamber Pro 11” Standard (Model # 1100BDH)): Not approved for installations effective Jan 01, 2014	18.75 sq ft / chamber	(discontinued)
Original 34" Standard Envirochamber): Not approved for installations effective Jan 01, 2014	18.75 sq ft / chamber	(discontinued in 2007)
Original 34" Hi-Capacity Envirochamber): Not approved for installations effective Jan 01, 2014	18.75 sq ft / chamber	(discontinued in 2007)

FLORIDA ONSITE SEWAGE TREATMENT and DISPOSAL SYSTEMS
ALTERNATIVE DRAINFIELD PRODUCTS AS OF March 02, 2015

PRODUCT NAME / DESCRIPTION	SIZING CRITERIA	Other
EZflow by Infiltrator (formerly Ring Industrial Group, L.P.; formerly EZflow, L.P.)		http://www.infiltratorsystems.com
EZflow 1003H-GEO (3, 10" pipes)	1 linear foot of product = 3 sqft of mineral aggregate	Trench or Bed
EZflow 1203H-GEO (3, 12" pipes)	1 linear foot of product = 4 sqft of mineral aggregate	Trench or Bed
FLOWTECH by Infiltrator Systems , Inc. (Effective 9/27/13 by Infiltrator Systems, Inc. formerly ICC Technologies, LLC)		http://www.infiltratorsystems.com
FTSG-123H-1OC (3, 12" bundles)	1 linear foot of product = 4 sqft of mineral aggregate	Trench or Bed
INFILTRATOR chamber by Infiltrator Systems , Inc.		http://www.infiltratorsystems.com
Original 30" Chamber Models 1HC10, 1STD10, 1STD10C, 1STD20C, 1STDSC and 1HC20): Not approved for installations effective Jan 01, 2014	18.75 sq ft / chamber	4”-6” spacing in bed
Sidewinder Models: 1HC10SWC, 1STD10SW, 1STDSCSW and 1HC10SW): Not approved for installations effective Jan 01, 2014	18.75 sq ft / chamber	4”-6” spacing in bed
EQ24 (single chamber)		4”-6” spacing in bed
Double EQ24 (dual parallel chamber)	17.85 sqft / chamber---Trench	4”-6” spacing in 36” trench
EQ36 and EQ36 QuickCut (single chamber)	25.00 sqft / chamber	4”-6” spacing in bed
Quick4 EQ24 LP (single chamber)	7.28 sqft / chamber, 0.00 sqft / end plate	0” spacing in bed
Double Quick4 EQ24 LP (dual parallel chamber)	7.80 sqft / chamber, 0.00 sqft / end plate---Trench	4”-6” spacing in 36” trench
Quick4 EQ24 (single chamber) and Quick4 EQ24 HD (single chamber)	8.00 sqft / chamber; 0.00 sqft / end plate	0” spacing in bed
Double Quick4 EQ24 (dual parallel chamber) and Double Quick4 EQ24 HD (dual parallel chamber)	8.57 sqft / chamber; 0.00 sqft / end plate---Trench	4”-6” spacing in 36” trench
Quick4 EQ36 and Quick4 EQ36 SL	12.00 sqft / chamber; 0.00 sqft / end plate	4”-6” spacing in bed
Quick4 Plus EQ36 LP and Quick4 Plus EQ36 SL LP	11.32 sqft / chamber, 0.00 sqft / end plate	0” spacing in bed
Quick4 Standard Chamber): Not approved for installations effective Jan 01, 2014	12.00 sqft / chamber; 0.00 sqft / end plate	4”-6” spacing in bed

PRODUCT NAME / DESCRIPTION	SIZING CRITERIA	Other
Multi-Pipe Rockless Drainfield System (MPRDS) by Plastic Tubing Industries, Inc.		http://ptifla.com
10 pipes - 3 tier	1 linear foot of product = 2 sqft of mineral aggregate	
14 pipes - 3 tier	1 linear foot of product = 3 sqft of mineral aggregate	
9 pipes - 2 tier; Marketed by PTI as "MPS-9"	1 linear foot of product = 3 sqft of mineral aggregate	
11 pipes - 2 tier; Marketed by PTI as "MPS-11"	1 linear foot of product = 3 sqft of mineral aggregate	
13 pipes - 2 tier; Marketed by PTI as "MPS-13"	1 linear foot of product = 3 sqft of mineral aggregate	
Polyrock by Turner's Septic Services, Inc.		
Polyrock (3, 12" bundles)	1 linear foot of product = 4 sqft of mineral aggregate	Performance warranty required
Septic Stack by Advanced Drainage Systems, Inc.		www.ads-pipe.com
Septic Stack-9	1 linear foot of product = 3 sqft of mineral aggregate	Limited warranty required
Septic Stack-11	1 linear foot of product = 3 sqft of mineral aggregate	Limited warranty required
Septic Stack-13	1 linear foot of product = 3 sqft of mineral aggregate	Limited warranty required

Tire Chips (64E-6.009(6) F.A.C.)	SIZING CRITERIA	Other
TIRE CHIP MANUFACTURER		
Affordable Tire (renamed 07/2006 to RMD)	Mineral aggregate substitute on sq ft per sq ft basis	Specifications must be met in the field
Florida Tire Recycling, Inc.Tire Chips	Mineral aggregate substitute on sq ft per sq ft basis	Specifications must be met in the field
Global Tire Recycling, Inc.	Mineral aggregate substitute on sq ft per sq ft basis	Specifications must be met in the field
Modern Recycling Inc.	Mineral aggregate substitute on sq ft per sq ft basis	Specifications must be met in the field
RMD Americas of Florida, LLC	Mineral aggregate substitute on sq ft per sq ft basis	Specifications must be met in the field

Drip Irrigation (64E-6.009(5) F.A.C.)	Nominal Emitter Flow, Spacing along Line	Other
WASTEFLOW by Geo-Flow		www.geoflow.com
WASTEFLOW CLASSIC		
WF16–4–24	1 gph, 24 " spacing	
WF16–4–12	1 gph, 12 " spacing	
WASTEFLOWPC (pressure compensating)		
WFPC16–2–24	½ gph, 24 " spacing	
WFPC16–2–12	½ gph, 12 " spacing	
WFPC16–4–24	1 gph, 24 " spacing	
WFPC16–4–12	1 gph, 12 " spacing	
WF-PLAIN	Plain (no emitters)	
BIOLINE for Florida by Netafim (Vinyzene-free)		www.netafimusa.com
08WRAM.4-12500	0.4 gph, 12” spacing, 500’ roll	
08WRAM.4-12	0.4 gph, 12” spacing, 1000 ’roll	
08WRAM.4-18500	0.4 gph, 18” spacing, 500’ roll	
08WRAM.4-18	0.4 gph, 18” spacing, 1000’ roll	
08WRAM.4-24500	0.4 gph, 24” spacing, 500’ roll	
08WRAM.4-24	0.4 gph, 24” spacing, 1000’ roll	
08WRAM.6-12500	0.6 gph, 12” spacing, 500’ roll	
08WRAM.6-12	0.6 gph, 12” spacing, 1000’ roll	
08WRAM.6-18500	0.6 gph, 18” spacing, 500’ roll	
08WRAM.6-18	0.6 gph, 18” spacing, 1000’ roll	
08WRAM.6-24500	0.6 gph, 24” spacing, 500’ roll	
08WRAM.6-24	0.6 gph, 24” spacing, 1000’ roll	
08WRAM1-12	0.9 gph flow, 12” spacing, 1000’ roll	
08WRAM1-12500	0.9 gph flow, 12” spacing, 500’ roll	
08WRAM1-18	0.9 gph flow, 18” spacing, 1000’ roll	
08WRAM1-18500	0.9 gph flow, 18” spacing, 500’ roll	
08WRAM1-24	0.9 gph flow, 24” spacing, 1000’ roll	
08WRAM1-24500	0.9 gph flow, 24” spacing, 500’ roll	

10a

An Overview of the Operating Permits Issued by the Department of Health
Bart Harriss, RS
This article was published in the FOWA Journal – October 2009

Operating permits are required and issued to specific types of facilities serviced by onsite sewage systems and service company businesses, that the department is authorized to regulate. These "ongoing" permits are not to be confused with construction permits. Operating permits must be renewed on an annual or biennial basis, dependant upon the type of operating permit required (only ATU's and PBTS require biannual operating permits). Construction permits are primarily issued for the installation, of new, repair and modification systems and then approved if all the rule requirements are met. Operating permits are divided by the department in two different categories, which includes onsite sewage systems for certain "facilities or businesses" and for certain "service companies".

Facility Operating Permits	Service Company Operating Permits
IM	Maintenance Entities
COM	Manufacturers
ATU	Disposal Service
PBTS	Treatment Facility
	Temporary Service
	Agricultural Land Use

Facility Operating Permits - These types of operating permits can also be classified as "managed systems", because an operating permit is required for the life of the system to ensure the system is operating according to the conditions of the permit established by the manufacturer or performance criteria, if a performance based treatment system. The types of permits include; Industrial/Manufacturing (IM), Commercial Sewage Waste (COM), Aerobic Treatment Unit (ATU) and Performance Based Treatment System (PBTS). The operating permit also lists some of the "conditions of operation" based on the type of system that will be explained more. ATU's and PBTS require the property owner to obtain a maintenance contract with an approved "Maintenance Entity" for the life of the system. These contracts are initially required for two years and then at a minimum, on an annual basis for the life of the system. In addition the "Maintenance Entity" is required to obtain a biennial operating permit from the CHD for all of the PBTS and ATU's they service. If a facility is required to have an IM or COM operating permit and the type of onsite system is an ATU or PBTS, only one operating permit for the system would be required.

- **IM** – An IM Operating Permit is issued to those businesses or facilities that are located in an area zoned or used for industrial or manufacturing purposes. The department does not approve any system to accept wastewater that contains toxic or hazardous chemicals and the IM program is intended to allow businesses to operate out of facilities located in IM or equivalent zoning, while it is ensured that no toxic, hazardous, or industrial waste contaminates groundwater through the OSTDS. Businesses that have the potential to generate toxic or hazardous waste such as, auto repair/service shops, pest control businesses, medical offices, laboratories, printing shops and more would require an operating permit. Any of these type businesses or any business located in an area zoned for IM or the equivalent, that have changed ownership or tenancy after July 5, 1989 are required to obtain an operating permit. In addition, based on the business survey (Form DH 4081A, listing the business practices and any chemicals used), chemical testing may be required. The type and frequency of tests are based on the potential of the business to contaminate the groundwater and are listed on the operating permit as one of the conditions of operation. The CHD is required to inspect these facilities on an annual basis.

- **COM** – A Commercial Operating Permit is issued to those businesses or facilities that produce commercial sewage waste. In the rule 64E-6.002(13), Florida Administrative Code, Commercial Sewage Waste is defined as "non-toxic, non-hazardous wastewater

from commercial facilities. Examples of establishments included in this definition are commercial and institutional food operations, commercial laundry facilities with no more than 4 machines, and animal holding facilities". In addition based on the DEP/DOH Interagency Agreement, we include; beauty salons and funeral homes with embalming. Overall the strength of the wastewater for these type facilities are greater than domestic waste. The BOD and TSS are normally higher. Also a higher amount of fats, oils and greases (FOG) are present, especially in the food service facilities. Because of the strength of the commercial wastewater, the onsite systems have to work harder and it takes more time to break down the wastewater. In addition, grease interceptors are required in most food service and institutional establishments. Operating permits for these facilities are required for new systems, when there is a change of ownership, repair or change in the sewage. These requirements became effective on July 1, 1998 after changes to Florida Statutes 381. The CHD is required to inspect these facilities on an annual basis.

- **ATU** – An Aerobic Treatment Unit is a sewage treatment unit which introduces air into sewage to provide aerobic biochemical stabilization within the treatment unit. These systems must be tested to meet NSF Standard 40 requirements. ATUs are allowed a reduction of 25% in the drainfield size, as they reduce the strength of the sewage (BOD and TSS) as compared to a conventional system. The CHD is required to inspect these facilities on an annual basis.

- **PBTS** – A Performance Based Treatment system according to the definition in the rule, [Chapter 64E-6.025(10)] - A specialized onsite sewage treatment and disposal system designed by a professional engineer with a background in wastewater engineering, registered in the state of Florida, using appropriate application of sound engineering principles to achieve specified levels of CBOD5, TSS, TN, TP, and fecal coliform found in domestic sewage waste, to a specific and measurable established performance standard. This term also includes innovative systems.) Like ATU's, these systems utilize pumps, aerators, plants and special reactive medias that overtime need adjustment and or replacement to maintain optimal performance. Besides the normal maintenance for conventional systems and routine inspections and service visits for ATU's, PBTS may require additional monitoring, maintenance and sampling. For PBTS this would be based on what the system was designed and determined by the design engineer. Some sampling protocol is listed in the rule and explained in Memo 08-003. PBTSs are also designed and installed to overcome marginal land limitations and to provide for improved water quality standards by reducing the nutrients and sewage strength. The CHD is required to inspect these facilities on an annual basis.

Type	Fees
IM	$150.00 annual
COM	$150.00 annual
ATU	$100.00 biennial
PBTS	$100.00 biennial

Service Company Operating Permits – These include service companies that have been approved the department to operate a certain business in the onsite sewage industry. Normally these operating permits are issued by the CHD; in the county the service company is located. These would include, maintenance entities, tank manufacturers, septage disposal services, septage treatment facilities, temporary services (portable toilet and holding tank services), and agricultural land use. These operating permits are issued on an annual basis and are explained in more detail below:

- **Maintenance Entities** – To become an Approved Maintenance Entity you must complete an application, have a business qualifier (a state licensed plumber, septic tank contractor, or wastewater treatment plant operator), who is responsible for maintenance and repair, must conduct a minimum of two maintenance inspections a year for residential and four

per year for commercial systems (non-residential system). Maintenance Entities are also responsible to obtain the Operating Permit and Maintenance Contract for the property owner from the CHD. Maintenance Entities are also responsible for obtaining maintenance contracts for both ATU's and PBTS. This is a signed contract/agreement required for an ATU or PBTS. The contract is signed by the AME and the property owner. The initial contract is for two years and must be renewed at least annually for the life of the system. The records and files for Maintenance Entities are also evaluated by the CHD on an annual basis

- **Manufactures –** For a tank manufacturer to receive approval and an operating permit, they must complete Form DH 4012, 01/92, "Application for Septic Tank Manufacturing Approval". Tank Manufacturers are inspected by the department on an annual basis and the inspection procedures are listed in section 64E-6.013(4) (a) – (l), Florida Administrative Code. Tank manufacturers must have treatment receptacles designed and tested according to the standards listed in the rule. The onsite wastewater treatment receptacles include: septic tanks, graywater tanks, laundry tanks, grease interceptors, pump tanks, aerobic treatment unit tanks, tanks containing treatment media and stationary holding tanks not described in 64E-6.0101&9)(p). In addition, treatment receptacles shall be constructed of concrete, fiberglass or polyethylene. The CHD is required to inspect these facilities on a biennial basis.

- **Disposal Services –** A Septage Disposal Service is a company that primary pumps septic tank and grease interceptors and is required to be qualified by a licensed septic tank contractor or a state licensed plumber. The permits issued for disposal services allow the company to handle liquid waste associated with food operations, domestic waste or domestic septage. These authorizations apply to all septage produced in the State of Florida, and food establishment sludge which is collected for disposal from onsite sewage treatment and disposal systems. Some of the requirements include: adequate equipment such as a pump truck with liquid capacity of 1500 gallons, pumps, off truck stabilization tanks and pH testing equipment where lime stabilization and land application are proposed and other items needed to conduct the work. Other information shall be included such as where the waste will be disposed. More detailed information can be found in section 64E-6.010(2), Florida Administrative Code. The CHD is required to inspect these facilities (pump trucks) on a biennial basis.

- **Treatment Facilities –** A septage treatment facility is where septage is normally treated by lime stabilization in treatment tanks prior to land application. If land application is intended then an "agricultural use plan and approval" would be required prior to disposal. The CHD is required to inspect these facilities on an annual basis.

- **Temporary Service –** A Temporary Service or Portable Toilet Holding Tank Service company is exempt from having a licensed contractor plumber as a qualifier. Permits issued under this rule authorize the disposal service to handle liquid waste associated with portable restrooms, portable hand washing facilities, restroom trailers, shower trailers and portable or stationary holding tanks containing domestic wastewater produced in the State of Florida. Some of the requirements include: adequate equipment such as a tank truck, pumps, off truck stabilization tanks and pH testing equipment where lime stabilization and land application are proposed and other items needed to conduct the work. The equipment can only be placed into service after inspection and approval from the CHD. Other information shall be included such as where the waste will be disposed. More detailed information can be found in section 64E-6.0101(1), Florida Administrative Code. The CHD is required to inspect these facilities on biannual basis.

- **Agricultural Land Use –** An agricultural land use plan and approval is necessary when septage is intended to be disposed of upon land when in the Department of Health's jurisdiction. Section 64E-6.010(7) (a), F.A.C. states; "Facilities approved septage treatment under this rule shall not received or treat more than 20,000 gallons of septage or combined septage, grease interceptor, portable restroom or other waste associated with an onsite system on any one day and shall not exceed a monthly average of 10,000 gallons of septage or septage and combined domestic waste per day. An agricultural use plan is required for each site where septage is applied. It will describe the manner in

which the treated domestic sludges are used, the method of application, proposed crops and fertilizer needs, vegetation proposed, access control and anticipated harvesting periods. Information regarding the soils and geologic conditions are required which could limit the area for land application. The plan will be submitted to the CHD and after review will determined if approval can be granted. See DH 4012-A, Agricultural Use Plan. The CHD is required to inspect these facilities on an annual basis.

Type	Fees
Maintenance Entities	$25.00
Manufacturers	$100.00
Disposal Service	$75.00 ($35 additional for each pumpout vehicle)
Treatment Facility	$150.00
Temporary Service	$75.00 ($35 additional for each pumpout vehicle)
Agricultural Land Use	$200.00

For further details see Chapter 64E-6, Florida Administrative and the associate application forms. Information can be obtained from www.myfloridaeh.com/sewage.

Commercial Sewage Waste Generators, Operating Permits and Grease Interceptors

Bart Harriss, RS
DOH, Bureau of Onsite Sewage Programs
(Published in FOWA Journal, The Voice – 2008)

In this article I will discuss and explain the differences of commercial sewage waste vs. domestic sewage waste, DOH high strength waste studies, the requirements of operating permits, interagency coordination of regulated food establishments, grease interceptors and facilities that generate commercial sewage waste.

Types of Wastewater - Lets cover the basics first. Wastewater can generally be divided into 3 categories. These categories are; industrial wastewater, commercial wastewater and domestic wastewater. Industrial wastewater is wastewater from dairies, food processing plants, slaughterhouses, funeral homes, car washes and commercial laundries with more than four washing machines and any other waste not defined as domestic or commercial wastewater. Facilities in this category are under the jurisdiction of the Florida Department of Environmental Protection (DEP) and not regulated by the Department of Health (DOH). The only exception to this would be if DEP waives their jurisdiction and DOH grants a variance. Wastewater under the jurisdiction of DOH is commercial wastewater flows, up to 5,000 gallons per day, and domestic wastewater flows up to 10,000 gallons per day, for an establishment. Commercial sewage waste (also referred to as commercial wastewater) is defined in 64E-6.002(13) – "Non-toxic, non-hazardous wastewater from commercial facilities. Examples of establishments included in this definition are commercial and institutional food operations, commercial laundry facilities with no more than 4 machines, and animal holding facilities." Also includes beauty salons, and funeral homes with embalming per DOH/DEP Interagency agreement. Domestic wastewater would include wastewater from houses and retail type business.

Domestic Waste Vs. Commercial Sewage Waste

We now understand that DOH does not regulate facilities that generate industrial wastewater. With that said, we also understand that establishments that generate commercial wastewater and domestic wastewater flows within the jurisdictional limits discussed above, are regulated by DOH. So what are differences of commercial wastewater and domestic wastewater? This is sometimes easily misunderstood. Just because wastewater is being generated from a commercial facility does not imply the wastewater can be identified as commercial wastewater. Wastewater from commercial businesses such as retail businesses, real estates offices, ect., or any other similar businesses would typically generate domestic wastewater. As indicated in the rule citation above, commercial sewage waste is generated from establishments such as commercial and institutional food operations and is identified by the higher strength of the wastewater. The strength of the wastewater is measured primarily from the biochemical oxygen demand (BOD) and the total suspended solids (TSS). In addition the total nitrogen (TN) and total phosphorus (TN) will also be higher. Another factor is the high amount of fats, oils and greases (FOG), that are normally found generated by food establishments. Because of the strength of commercial wastewater, the onsite systems have to work harder and it takes more time to break down the wastewater. See the charts below:

Residential vs. Commercial Wastewater Effluent Strength

	Residential	**Commercial**
BOD 5	140	245-880
TSS	75	65-372
TN	40	30-82
TP	15	14-28

* Typical septic tank effluent in mg/l characteristics of restaurant effluent, 3/93 Ayres and Associates

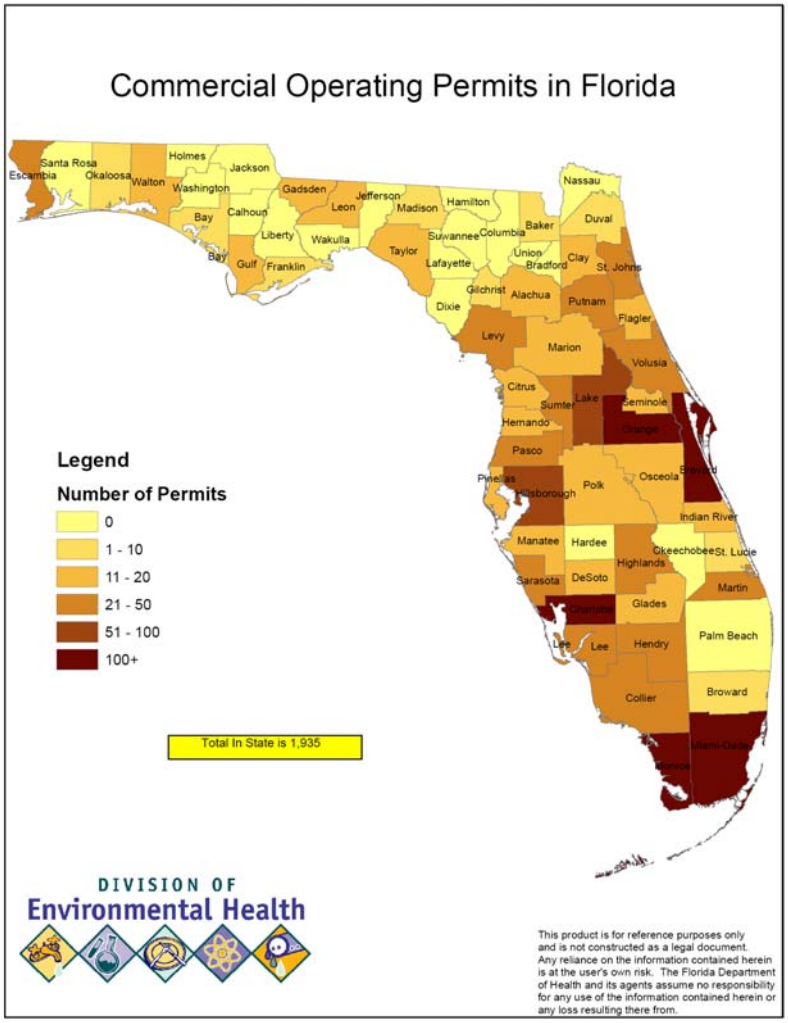
The study results below represent how the strength of the wastewater is lowered by just removing the garbage disposal from a residential house and suggests that food products cause the system to work harder and that a significant percentage of fats, oils and greases are eliminated. For establishments that general commercial sewage waste and produce an excess amount of FOG, grease interceptors are required. That will be discussed later in the article.

Reduction in Pollutant Loading achieved by eliminating garbage disposals	
Parameter	**Reduction in pollutant loading %**
TSS	25-40
BOD	20-28
TN	3.6
TP	1.7
Fats, oils and grease	60-70

DOH has contracted and completed several studies on high strength wastes. Several studies were conducted to determine the effect of high strength waste from food service facilities. Another phase of the study focused on the long term acceptance rates or loading rates. Some of the conclusions indicated that restaurants produced a higher strength waste, had a mass loading threshold at .0015 lbs/ft2/day. The mass loading and resulting biomat formation significantly reduced the soil permeability. More information on these studies can be found on the Bureau's website, at the research link listed at the end of this article.

Operating Permits and Business Survey Form

Operating permits are required for a number of facilities and services in the onsite program. Those facilities are commercial sewage waste, industrial manufacturing (IM), aerobic treatment units (ATU) and performance based treatment systems (PBTS). The services requiring an operating permit are; portable toilet companies, septage pumpers and haulers, land application and septage treatment facilities. For this article we are focusing on commercial operating permits. According the Environmental Health Data Base System as of mid 2008 their were approximately 19,000 total facility operating permits in the State and approximately 12% of these were commercial operating permits which equates to approximately 1,900 systems.



For establishments generating commercial sewage waste, an annual operating permit is required. An annual operating permit is not to be confused with a construction permit. A construction permit is issued for the construction of the system and the operating permit is issued for the operation and management of the system and renewed on an annual basis. While the construction permit is important initially to ensure the system is designed and installed according to the onsite regulations, the operating permit ensures the system is managed and maintained according to the guidelines set forth in the operating permit. Some of those guidelines would include an annual inspection conducted by the county health department including a renewal fee. In addition to the operating permit, a business survey is required in which the details of the business activities are listed for the evaluation of the system. All new facilities served by an onsite system generating commercial sewage waste are to obtain an operating permit. In addition, any existing facilities with a change of ownership repair or modification are required to obtain an operating permit. Facilities with a change of ownership on of after July 1, 1998, would require and existing system evaluation and tank certification according to the standard procedures. If the system was approvable, then an operating permit could be issued, or unless any modifications are required. An operating permit could be issued after any rule requirements are met.

<u>Interagency Coordination Regarding Regulated Food Establishments</u>

The majority of commercial sewage waste facilities are food establishments. Because food establishments are regulated by three agencies in Florida [Department of Health, Department of Agriculture and Consumer Services (DACS) and the Department of Business and Professional Regulation (DBPR)], an interagency coordination was created to ensure that food establishments are evaluated for adequate water and sewage disposal services before they are permitted to open or expand their operation. A form titled; “Interagency – DOH/DACS/DBPR Onsite Sewage (Septic) and Water Supply Evaluation” was created for this purpose. Prior to the approval of food establishments by DACS and DBPR, the application must have the County Health Department’s approval indicating the signature of CHD official and onsite system information. Prior the CHD completing this, necessary existing system evaluations and possible modifications may need to be conducted to the onsite system. In addition, DBPR posts their change of ownerships on a regular basis to their website so this can be monitored to

determine if an operating permit of the facility has been obtained. Information on the form will be listed at the end of this article.

INTERAGENCY - DOH/DACS/DBPR
ONSITE SEWAGE (SEPTIC) AND WATER SUPPLY EVALUATION

This form is to be completed to ensure that food service and food outlet facilities are evaluated for adequate water and sewage services before opening or expanding operations. Complete and submit this form to the appropriate Department of Agriculture & Consumer Services (DACS) or Department of Business and Professional Regulation (DBPR) office.

EVALUATION REQUEST FOR/LICENSING AGENCY

☐ **New Facility** ☐ **Expansion / Remodeling** (increase in seating/ other change) ☐ **Change in Ownership** ☐ **Other (list)**

Licensing Agency: ☐ DBPR ☐ DACS	License Number:	
Contact Person:	Phone:	FAX:

Section 1 – ESTABLISHMENT INFORMATION

Establishment Name:	Type of Establishment:	
Address:	Contact Person / Phone#:	
City:	County:	Zip:

Section 2 – WATER
(To Be Completed By DOH, DEP or Utility Authority)

The above named food service establishment uses the following water supply (choose one type):

☐ Municipal Water	Name of Supplier:	
☐ Onsite Well System	Permit #:	Issued by:

☐ Establishment served by a 64E-8, F.A.C., Limited Use Public Water System, DOH Regulated
☐ Establishment served by a Florida Safe Water Drinking Act (DEP or DOH) regulated public water system

SYSTEM EVALUATION RESULT:

☐ **Approved**	**Comments**:
☐ **Denied** (see comments)	

Name & Title	Agency
Signature	Date
Address	Phone

Section 3 – WASTEWATER
(To Be Completed By DOH, DEP or Utility Authority)

The above named food service establishment uses the following wastewater disposal system (choose one type):

☐ **Municipal/Utility** (DEP Regulated)	Name of Supplier:			
☐ **Septic Tank System** (Onsite Sewage System)	Permit #:	Tank Size:	Drainfield Size:	Grease Trap Size:

SYSTEM EVALUATION RESULT:

☐ **Permit Issued** ☐ **Final Approval**	☐ Single-Service Utensils Only ☐ Number of Seats Permitted ☐ Hours of Operation ☐ Other Conditions (see comments)	**Comments**:
☐ **Denied** (see comments)		

Name & Title	Agency
Signature	Date
Address	Phone

February 2007 - Department of Health - Bureau of Onsite Sewage Programs

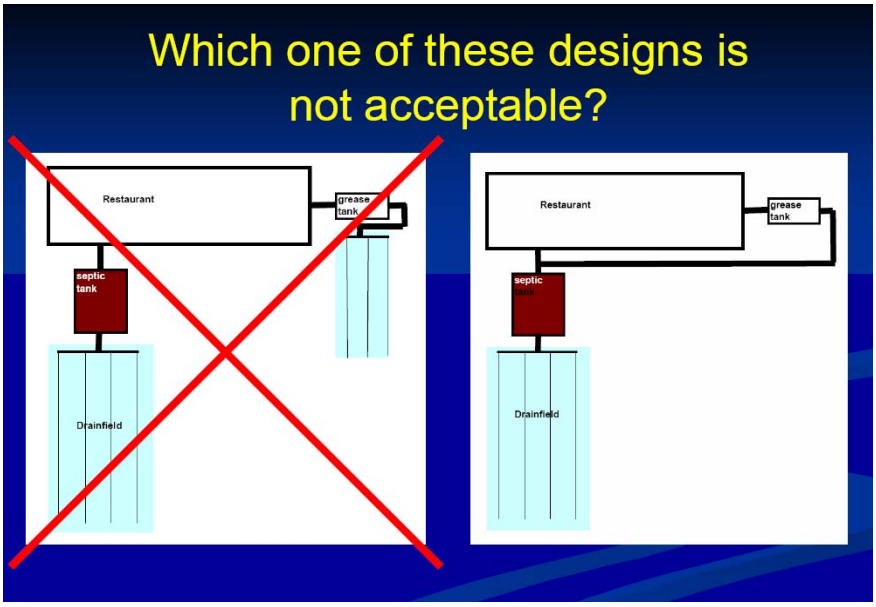
Check Memo 12-004 for most recent form and memo.

<u>Grease Interceptors and Establishments that Require Them</u>

A grease interceptor is a passive control device that is designed to help reduce fats, oils and greases (FOG) and solids from entering the septic tank and drainfield or sanitary sewer collection system. Grease interceptors are required were the FOG is produced in a greater quantity than in domestic waste. Grease interceptors are required in most food service facilities and institutional facilities that cook and prepare food. Do not confuse a grease interceptor with an “under-the-sink” grease trap. The structural standards of a grease interceptors are similar to that of a septic tank. The standards are found in Chapter 64E-6.013(7), FAC. In addition to the facilities listed above, other businesses that generate commercial sewage waste would include; full service restaurants, convenience stores with deli’s, grocery stores with deli’s, meat markets, child care centers and group homes with food preparation and cooking. An important factor to note is that normally if the establishment has “cooking, frying and/or ovens” present, then a grease interceptor would be required. At some of the residential group care type facilities it has been determined that a grease interceptor would be required when a full food service license is required. The Bureau of Onsite Sewage Programs will be making these details available in an informational guidance memorandum in the near future.

Even though a grease interceptor is required, and properly installed, designed and engineered, without adequate maintenance, the life of the system will be short lived. Normally these types of systems have a shorter lifespan than your conventional household systems because of the commercial sewage waste and the FOG produced. So, routine pumping and basic practices such as scraping food off plates will help to extend the life of the system. It is up to owner or operator of the establishment to establish some best management practices, such as these. It would greatly benefit the business owner to have a routine pumping contract to protect the system, but this is not required by the rules. It has been suggested that this be a standard incorporated into the rule.

Some other aspects of grease interceptors as far as the design would they should be placed in a location where accessible for servicing including manhole access ports installed to grade. Grease interceptors should always connect to the septic tank and not a separate drainfield. Grease interceptors are not required for single family residences and do require construction permits. <u>If a grease interceptor is required then an annual operating permit is required.</u>



<u>Other Businesses Requiring Annual Operating Permits, Without Grease Interceptor</u> - As discussed above, most of all the establishments that produce commercial sewage waste would require an annual operating permit and establishments producing excessive FOG would require a grease interceptor. There are some establishments that may generate commercial sewage waste (elevated BOD and TSS) but no excessive FOG and thus would not require the grease interceptor. These would include beauty salons/spas and commercial animal holding /grooming and veterinary clinics. These are listed in the DEP/DOH Interagency agreement.

For more information contact your local county health department or the Bureau of Onsite Sewage Programs at the links provided below:

Bureau of Onsite Sewage Programs – *www.myflorda.com/sewage*
Commercial Sewage Waste Brochure: *www.doh.state.fl.us/environment/ostds/brochure/commercial_broch.pdf*
Interagency Food Coordination Form - *www.doh.state.fl.us/environment/ostds/pdfiles/memos/2007/07-005.pdf*
DEP/DOH Interagency Agreement - *www.doh.state.fl.us/environment/ostds/pdfiles/forms/depdoh092701.pdf*
Operating Permit Applications and Business Survey Forms -
http://www.doh.state.fl.us/environment/ostds/form/formmemo.htm

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
APPLICATION FOR CONSTRUCTION PERMIT

PERMIT NO. 10-1000-N
DATE PAID: 7/01/2010
FEE PAID:
RECEIPT #:

APPLICATION FOR:
[x] New System [ ] Existing System [ ] Holding Tank [ ] Innovative
[ ] Repair [ ] Abandonment [ ] Temporary [ ]

APPLICANT: Tom Smith

AGENT: Sunshine Septic Company TELEPHONE: 407-111-1111

MAILING ADDRESS: 111 Somewhere Place, Oviedo, FL 32765

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TO BE COMPLETED BY APPLICANT OR APPLICANT'S AUTHORIZED AGENT. SYSTEMS MUST BE CONSTRUCTED BY A PERSON LICENSED PURSUANT TO 489.105(3)(m) OR 489.552, FLORIDA STATUTES. IT IS THE APPLICANT'S RESPONSIBILITY TO PROVIDE DOCUMENTATION OF THE DATE THE LOT WAS CREATED OR PLATTED (MM/DD/YY) IF REQUESTING CONSIDERATION OF STATUTORY GRANDFATHER PROVISIONS.

==========

PROPERTY INFORMATION

LOT: 5 BLOCK: NA SUBDIVISION: Oviedo Oaks PLATTED: 1/1/71

PROPERTY ID #: 293031000782 ZONING: R I/M OR EQUIVALENT: [Y / N]

PROPERTY SIZE: .40 ACRES WATER SUPPLY: [x] PRIVATE PUBLIC [ ]<=2000GPD [ ]>2000GPD

IS SEWER AVAILABLE AS PER 381.0065, FS? [Y / N] DISTANCE TO SEWER: NA FT

PROPERTY ADDRESS: 312 Cypress Ave., Geneva, FL 32765

DIRECTIONS TO PROPERTY: see attached map

BUILDING INFORMATION [x] RESIDENTIAL [ ] COMMERCIAL

Unit No	Type of Establishment	No. of Bedrooms	Building Area Sqft	Commercial/Institutional System Design Table 1, Chapter 64E-6, FAC
1	SFR	2	840	
2				
3				
4				

[ ] Floor/Equipment Drains [ ] Other (Specify)

SIGNATURE: *Tom Smith* DATE: 7/01/2010

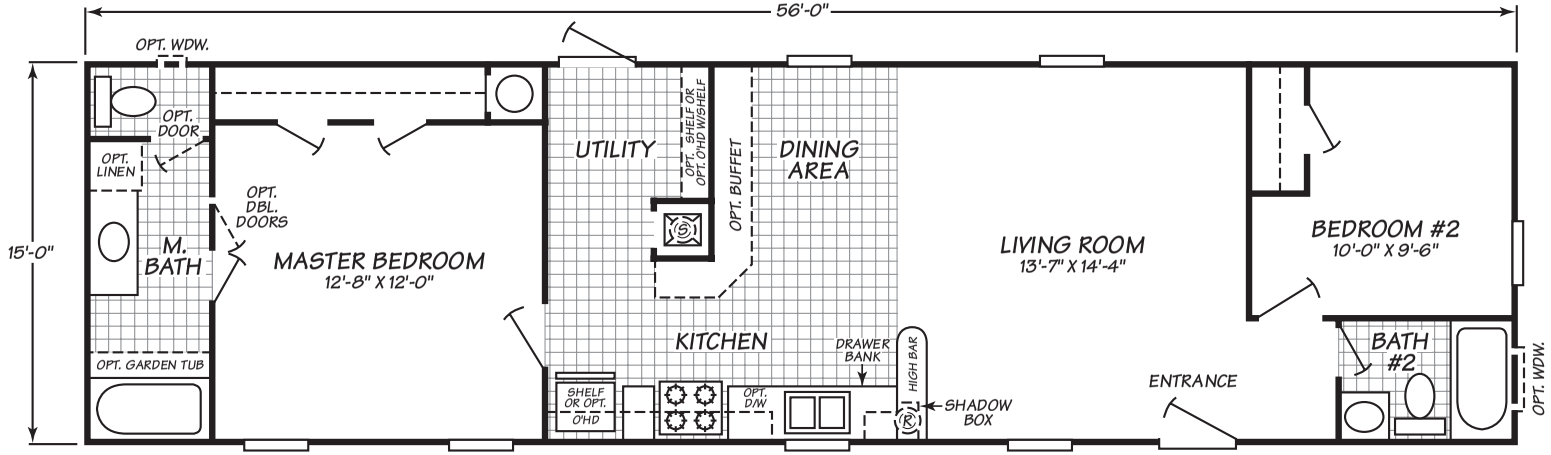
DH 4015, 08/09 (Obsoletes previous editions which may not be used)
Incorporated 64E-6.001, FAC

APPLICANT:	Property owner's full name.
AGENT:	Property owner's legally authorized representative.
TELEPHONE:	Telephone number for applicant or agent.
MAILING ADDRESS:	P.O. box or street, city, state and zip code mailing address for applicant or agent.
LOT, BLOCK, SUBDIVISION:	Lot, block, and subdivision for lot (recorded or unrecorded subdivision). If lot is not in a recorded subdivision, a copy of the lot legal description or deed must be attached.
DATE OF SUBDIVISION:	Official date of subdivision recorded in county plat books (month/day/year) or date lot originally recorded. Dividing an approved lot into two or more parcels for the purpose of conveying ownership shall be considered a subdivision of the lot.
PROPERTY ID#:	27 character number for property. CHD may require property appraiser ID # or section/township/range/parcel number.
ZONING:	Specify zoning and whether or not property is in I/M zoning or equivalent usage.
PROPERTY SIZE:	Net usable area of property in acres (square footage divided by 43,560 square feet) exclusive of all paved areas and prepared road beds within public rights-of way or easements and exclusive of streams, lakes, normally wet drainage ditches, marshes, or other such bodies of water. Contiguous unpaved and non-compacted road rights-of-way and easements with no subsurface obstructions may be included in calculating lot area.
WATER SUPPLY:	Check private or public <= 2000 gallons per day or public > 2000 gallons per day.
SEWER AVAILABILITY:	Is sewer available as per 381.0065, Florida Statutes, and distance to sewer in feet.
PROPERTY ADDRESS:	Street address for property. For lots without an assigned street address, indicate street or road and locale in county.
DIRECTIONS:	Provide detailed instructions to lot or attach an area map showing lot location.
BUILDING INFORMATION:	Check residential or commercial.
TYPE ESTABLISHMENT:	List type of establishment from Table II, Chapter 64E-6, FAC. Examples: single family, single wide mobile home, restaurant, doctor's office.
NO. BEDROOMS:	Count all rooms designed primarily for sleeping and those areas expected to routinely provide sleeping accommodations for occupants.
BUILDING AREA:	Total square footage of enclosed habitable area of dwelling unit, excluding garage, carport, exterior storage shed, or open or fully screened patios or decks. Based on outside measurements for each story of structure.
BUSINESS ACTIVITY:	For commercial/institutional applications only. List number of employees, shifts, and hours of operation, or other information required by Table II, Chapter 64E-6, FAC.
FIXTURES:	Mark Floor/Equipment Drains or Others and specify item or "NA" if not applicable.
SIGNATURE / DATE:	Signature of applicant or agent. Date application submitted to the CHD with appropriate fees and attachments.

ATTACHMENTS: A site plan drawn to scale, showing boundaries with dimensions, locations of residences or buildings, swimming pools, recorded easements, onsite sewage disposal system components and location, slope of property, any existing or proposed wells, drainage features, filled areas, obstructed areas, and surface water. Location of wells, onsite sewage disposal systems, surface waters, and other pertinent facilities or features on adjacent property, if the features are with 75 feet of the applicant lot. Location of any public well within 200 feet of lot. For residences, a floor plan (residences) showing number of bedrooms and building area of each unit. For nonresidential establishments, a floor plan showing the square footage of the establishment, all plumbing drains and fixture types, and other features necessary to determine composition and quantity of wastewater.

FLOOR PLAN for Tom Smith - 312 Cypress Avenue,

2 Bedrooms • 2 Baths • 840 Square Feet



STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
SITE EVALUATION AND SYSTEM SPECIFICATIONS

PERMIT #. 10-1000-N

APPLICANT: Tom Smith **AGENT:** Sunshine Septic Company

LOT: 5 **BLOCK:** NA **SUBDIVISION:** Oviedo Oaks

PROPERTY ID #:[Section/Township/Parcel No. or Tax ID Number]

TO BE COMPLETED BY ENGINEER, HEALTH DEPARTEMENT EMPLOYEE,OR OTHER QUALIFIED PERSON. ENGINNEERS MUST PROVIDE REGISTRATION NUMBER AND SIGN AND SEAL EACH PAGE OF SUBMITTAL. COMPLETE ALL ITEMS.

PROPERTY SIZE CONFORMS TO SITE PLAN: [x] YES [ ] NO **NET USABLE AREA AVAILABLE:** 0.37 **ACRES**
TOTAL ESTIMATED SEWAGE FLOW: 200 **GALLONS PER DAY [RESIDENCES-TABLE 1/OTHER-TABLE2]**
AUTHORIZED SEWAGE FLOW: 554.41 **GALLONS PER DAY [1500 GPD/ACRE OR 2500 GPD/ACRE]**
UNOBSTRUCTED AREA AVAILABLE: 3375.00 **SQFT UNOBSTRUCTED AREA REQUIRED:** 375.00 **SQFT**

BENCHMARK/REFERENCE POINT LOCATION: disc on CL of RD near SE corner of property
ELEVATION OF PROPOSED SYSTEM SITE IS 12 **[INCHES/FT] [ABOVE/BELOW] BENCHMARK/REFERENCE POINT**

THE MINIMUM SETBACK WHICH CAN BE MAINTAINED FROM THE PROPOSED SYSTEM TO THE FOLLOWING FEATURES
SURFACE WATER: 80 **FT DITCHES/SWALES:** 35 **FT NORMALLY WET?** [ ] YES [x] NO
WELLS: PUBLIC: NA **FT LIMITED USE:** NA **FT PRIVATE:** 85 **FT NON-POTABLE:** 73 **FT**
BUILDING FOUNDATIONS: 10 **FT PROPERTY LINES:** 17 **FT POTABLE WATER LINES:** 14 **FT**

SITE SUBJECT TO FREQUENT FLOODING: [ ] YES [x] NO **10 YEAR FLOODING?** [ ] YES [x] NO
10 YEAR FLOOD ELEVATION FOR SITE: NA **FT MSL/NGVD SITE ELEVATION:** NA **FT MSL/NGVD**

SOIL PROFILE INFORMATION SITE 1

MUNSELL #/COLOR	TEXTURE	DEPTH
10YR 2/1 Blk	FS	0 TO 6
10YR 5/1, 7/1	FS	6 TO 12
10YR 7/2	FS	12 TO 32
10YR 3/1 Dk Br	FS spodic	32 TO 39
10YR 4/3 Br	FS spodic	39 TO 45
10YR 5/3 Br	FS	45 TO 72
		TO
		TO
		TO

USDA SOIL SERIES: similar to Myakka

SOIL PROFILE INFORMATION SITE 2

MUNSELL #/COLOR	TEXTURE	DEPTH
10YR 2/1 Blk	FS	0 TO 7
10YR 5/1, 7/1	FS	7 TO 12
10YR 7/2	FS	12 TO 18
10YR 2/1 Blk	FS spodic	18 TO 40
10YR 3/3 Dk Br	FS spodic	40 TO 48
10YR 5/4 YB	FS	48 TO 72
		TO
		TO
		TO

USDA SOIL SERIES: similar to Myakka

OBSERVED WATER TABLE: 16 **INCHES [ABOVE / BELOW] EXISTING GRADE. TYPE:[PERCHED / APPARENT]**
ESTIMATED WET SEASON WATER TABLE ELEVATION: 6 **INCHES [ABOVE / BELOW] EXISTING GRADE**
HIGH WATER TABLE VEGETATION: [x] YES [ ] NO **MOTTLING:** [x] YES [ ] NO **DEPTH:** 6 **INCHES**

SOIL TEXTURE/LOADING RATE FOR SYSTEM SIZING: FS/0.80 **DEPTH OF EXCAVATION:** 48 **INCHES**
DRAINFIELD CONFIGURATION: [x] TRENCH [ ] BED [ ] OTHER (SPECIFY)
REMARKS/ADDITIONAL CRITERIA:
Soil profile #1 is 12” above RP, Soil profile #2 is 13” above RP.
Stripping at 6” below grade “10YR 7/1 in 5/1 matrix”.

SITE EVALUATED BY: *Carroll Sweet*, ESI **DATE:** 7/2/2010

INSTRUCTIONS:

PERMIT #:	Permit tracking number assigned by County Health Department.
APPLICANT:	Property owner's full name.
AGENT:	Property owner's legally authorized representative.
LOT, BLOCK,SUBDIVISION:	Lot, block, and subdivision for lot.
PROPERTY ID#:	27 character number for property (property appraiser ID # or section/township/range/parcel number).
PROPERTY SIZE:	Check if property size at site conforms to submitted site plan. Record net usable area available - lot area exclusive of all paved areas and prepared road beds within public rights-of-way or easements and exclusive of streams, lakes, normally wet drainage ditches, marshes, or other such bodies of water.
SEWAGE FLOW:	Record the estimated sewage flow for the establishment from Table 1 (residential) or Table 2 (non-residential), Chapter 64E-6, FAC. Record the authorized sewage flow for the lot based on net usable area and water supply (1500 gallons per day per acre for private water supplies and 2500 gallons per day per acre for public water supplies). If authorized sewage flow does not equal or exceed the estimated sewage flow, the application must be denied.
UNOBSTRUCTED AREA:	Record the square feet of unobstructed area available and the amount required. Unobstructed area must be at least 2 times as large as the drainfield absorption area and at least 75 percent of the unobstructed area must meet minimum setbacks in Chapter 64E-6, FAC. The unobstructed area must be contiguous to the drainfield.
BENCHMARK INFORMATION:	Record the location of the benchmark. If using a surveyor's benchmark record the actual elevation. Record the elevation of the proposed system site in relation (above or below) to the benchmark.
MINIMUM SETBACKS:	Record minimum setbacks which can be met to all listed features. Actual measurements must be recorded or "NA" for non applicable features. Features on site plan or within 75 feet of the applicant lot must be measured. The location of any public drinking well within 200 feet of the applicant's lot must also be verified.
FLOOD INFORMATION:	Record information on lot's subject to flooding. For lots subject to flooding record 10 year flood elevation for site and actual site elevation.
SOIL PROFILE INFORMATION:	Two soil profiles within the proposed absorption area to a minimum depth of 6 feet or refusal are required. Soil identification will use USDA Soil Classification methodology (Munsell colors and USDA soil textures). Refusals must be clearly documented. Provide USDA soil series if available, record "UNK" if the series cannot be determined.
WATER TABLE:	Record the depth of the observed water table at the time of the evaluation. Mark "perched" or "apparent" as appropriate. Record the estimated wet season water table elevation based on site evaluation, USDA soil maps, and historical information. Indicate if there is high water table vegetation present. Indicate if mottling is present and depth.
SOIL TEXTURE:	Record soil texture or loading rate for system sizing.
DEPTH OF EXCAVATION:	If applicable record depth of excavation required. Record "NA" if not applicable.
DRAINFIELD CONFIGURATION:	Check drainfield configuration required. If other, specify type.
ADDITIONAL CRITERIA:	Record any additional remarks pertinent to site or installation. Ex. Dosing required.
SITE EVALUATED BY:	Signature of evaluator, title, and date of evaluation. Professional engineers must seal all documentation submitted.

ELEVATION WORKSHEET ELEVATION OF BENCHMARK / REFERENCE POINT IS: _____

BENCHMARK	_____	SITE 1		SITE 2		SITE 3	
[+] SHOT	_____	H.I.	_____	H.I.	_____	H.I.	_____
H.I.	_____	[-] SHOT	_____	[-]- SHOT	_____	[-] SHOT	_____
	_____		_____		_____		_____

VACANT LOT

100'

Potable Well ⊙

VACANT LOT

N

Scale 1"=20'

DUG POND

Approx H2O level during site eval.

← MAFL - based on water stain - Set by Carroll Sweet, CEHP

VACANT LOT

Potable Well ⊙

Potable Well ⊙

← Water line

Irrigation Well ⊙

Slope is 1% from road to pond along length of property

175'

15'x56' Residence

water line w/ spigot

DRIVEWAY

3' TRENCH

3' TRENCH

3' TRENCH

SP

SP

Submitted by:
Tom Smith
7-1-10

Swale

Compated Road R.O.W.

Road edge

CYPRESS AVENUE (PAVED)

Benchmark

Site Plan - Sample New 10_1000_N

33041

INSTRUCTIONS FOR DH 4015, 01/12, PG 2 OF 4 – SITE PLAN (Reference: 64E-6.004, FAC)

FOR NEW/EXISTING/MODIFICATION SYSTEM APPLICATIONS: The site plan shall be **DRAWN TO A SCALE** of 1 inch = 10, 20, 30, 40, 50 or 60 feet and shall be for the property where the system is to be installed.

☐ 1. The site plan shall **SHOW BOUNDARIES WITH DIMENSIONS** and any of the following **FEATURES THAT EXIST OR THAT ARE PROPOSED**:
☐ a. Structures;
☐ b. Swimming pools;
☐ c. Recorded easements;
☐ d. Onsite sewage treatment and disposal system components;
☐ e. Slope of the property;
☐ f. Wells;
☐ g. Potable and non-potable water lines and valves;
☐ h. Drainage features;
☐ i. Filled areas;
☐ j. Excavated areas for onsite sewage systems;
☐ k. Obstructed areas;
☐ l. Surface water bodies *Requires a surveyor to set the Mean High Water Line boundary for tidally influenced surface water bodies. Requires a surveyor or department staff to set the Mean Annual Flood Line for permanent non-tidal surface water bodies.*
☐ m. Location of the reference point for system elevation.
☐ 2. If the county health department is responsible for performing the site evaluation, the applicant or applicant's authorized representative shall **indicate the approximate location of wells, onsite sewage treatment and disposal systems, surface water bodies and other pertinent facilities or features on contiguous or adjacent property. If the features are within 75 feet of the applicant lot, the estimated distance to the feature must be shown but need not be drawn to scale.**
☐ 3. If the county health department will not be performing the site evaluation, the applicant or authorized agent shall be responsible for the measurements to all features, including the pertinent features within 75 feet of the applicant lot. **The location of any public drinking water well, as defined in paragraph 64E-6.002(44)(b), F.A.C., within 200 feet of the applicant's lot shall also be shown, with the distance indicated from the system to the well.**
☐ 4. If an individual lot is five acres or greater, the applicant may draw a minimum one acre parcel to scale showing all required features, or the minimum size drawing necessary to properly exhibit all required features, whichever is larger. The applicant must also show the location of that one acre or larger parcel inside the total site ownership. *To scale parcel must be large enough to provide sufficient authorized flow.*
☐ 5. All information that is necessary to determine the total sewage flow and proper setbacks on the site ownership shall be submitted with the application. The applicant lot shall be clearly identified. **A copy of the legal description or survey must accompany the application for confirmation of property dimensions only.**

FOR REPAIR APPLICATIONS: A site plan (*NOT REQUIRED TO BE DRAWN TO SCALE)* showing:
☐ property dimensions
☐ the existing and proposed system configuration and location on the property
☐ the building location
☐ potable and non-potable water lines, within the existing and proposed drainfield repair area
☐ the general slope of the property
☐ property lines and easements
☐ any obstructed areas
☐ any private well *show private potable wells if within 100 feet of system, non-potable within 75 feet*
☐ any public wells *show if within 200 feet of system*
☐ any surface water bodies and stormwater systems *show if within 100 feet of system. Requires a surveyor to set the Mean High Water Line boundary for tidally influenced surface water bodies. Requires a surveyor or department staff to set the Mean Annual Flood Line for permanent non-tidal surface water bodies.*
☐ The existing drainfield type shall be described. For ex., mineral aggregate, non-mineral aggregate, chambers, or other.
☐ **Any unusual site conditions which may influence the system design or function** such as sloping property, drainage structures such as roof drains or curtain drains, and any obstructions such as patios, decks, swimming pools or parking areas.

FOR ALL SITE PLANS (IF APPLICABLE)
☐ A Coastal Construction Control Line Permit or an exemption notice from the Department of Environmental Protection if any component of the onsite sewage treatment and disposal system or the shoulders or slopes of the system mound will be seaward of the Coastal Construction Control Line, established under Section 161.053, F.S. Should the location of the proposed onsite system relative to the control line not be able to be definitively determined based on the site plan and the online products available on the DEP website, the applicant shall provide a survey prepared by a certified professional surveyor and mapper showing the location of the control line on the subject property.
☐ All plans and forms submitted by a licensed engineer shall be dated, signed and sealed.
☐ The evaluator shall document the **locations of all soil profiles** on the site plan.
☐ The site plan shall be **signed and dated by the applicant/agent**. Check appropriate box to indicate whether the signatory was the applicant or the authorized agent.

FLORIDA DEPARTMENT OF HEALTH

Jeb Bush
Governor

M. Rony François, M.D., M.S.P.H., Ph.D.
Secretary

INTEROFFICE MEMORANDUM

INFORMATION
HSES 06-005

DATE: June 20, 2006

TO: County Health Department Directors/Administrators
ATTN: Environmental Health and Engineering Directors

THROUGH: Lisa Conti, D.V.M., M.P.H., Dipl. ACVPM, CEHP
Director, Division of Environmental Health

FROM: Gerald Briggs, Chief, Bureau of Onsite Sewage Programs

SUBJECT: Application of the Four Lots Per Acre Provision of 381.0065(4)(b), FS

INFORMATION ONLY

This memo serves to clarify the interpretation and application of s. 381.0065(4)(b), Florida Statutes, regarding the appropriate methodology to use when determining if a subdivision meets the four lots per acre requirements of the statute. The relevant portion of Section 381.0065(4)(b) states that "Subdivisions and lots using a public water system as defined in s. 403.852 may use onsite sewage treatment and disposal systems, provided there are no more than four lots per acre..."

The water systems in question are DEP-regulated or delegated water systems regulated under S. 403, FS. The DOH-regulated systems (private and limited-use) require a half acre under s. 381.0065(4)(a), FS. The four lots per acre provision is tested by taking a reasonable group of four adjacent lots (four in a row on the same side of the street or four that sit in a two by two matrix either back to back or facing the street) and summing their cumulative areas. Remember per 64E-6.005(7)(b) to add the pro-rata portion of the adjacent right of way and subtract any prepared roadbeds, paved areas, and surface water. If the accumulated area of the four lots is less than a whole acre, the subdivision violates the four lots per acre provision and no onsite sewage treatment and disposal system permit may be issued for any lot in the subdivision. You must choose the group of the four smallest lots in the subdivision to do the test. If your county has invited you to participate in the subdivision review process, you would make this determination at that time. If you are not invited to participate in the subdivision review then you will do the review when you receive the first application for an onsite sewage treatment and disposal system permit in the subdivision. At that time you would need to see the entire subdivision plat and make the determination for the entire subdivision. As the determination

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applies to the entire subdivision, it would be a violation to develop any of the lots (large or small) while the subdivision contains small lots that did not meet the statute.

Another consideration to make relates to property that surrounds the subdivision. Surrounding subdivisions and parcels are not part of the evaluation except in the next specific case.

If a lot or parcel that is being subdivided is part of a larger subdivision and the original lot or parcel was required to be its original size in order to meet the lot density requirements for the surrounding subdivision, then the lot or parcel cannot be divided if the division violates the lot density requirements applicable to the surrounding subdivision. If the lot or parcel size is not relevant to the surrounding subdivision, then the lot or parcel is a subdivision unto itself and the splitting needs to be tested similarly to the first paragraph. If the subdivision being created will consist of only two lots, the original lot or parcel needs to contain at least one-half acre in order for the two new lots to meet the four lots per acre provision. If the original lot or parcel is being split into three lots, it needs to contain at least three-quarters of an acre in order for the three new lots to meet the four lots per acre provision.

Remember that no individual lot can be assessed as meeting the four lots per acre provision of the statute. An application for an onsite sewage permit on a lot that has 0.26 acres cannot be assessed for compliance unless the entire subdivision has already been found to be in compliance. Likewise, an application on a 0.20 acre lot cannot be denied without assessing the entire subdivision in which the lot is located.

Please provide a copy of this memorandum to all certified inspectors, professional engineers, licensed septic tank contractors and plumbers performing services in your county. If you have any questions on the matter, please contact Dale Holcomb or any member of the onsite staff at 850-245-4070 in Tallahassee or 407-317-7325 or 7327 in Orlando.

CLASSROOM EXERCISE #1: NEW 10_2010_N

Name:_____ **Date:** _____

Refer to the attachments to answer the following questions.	
Question	**Answer**
1. What is the size of the lot in **square feet?**	
2. What is the size of the lot in **acres**?	
3. What is the net usable area of the lot in **acres**?	
4. What is the **minimum setback** requirement to the surface water body across the road?	
5. What is the **minimum setback** requirement for the private potable well?	
6. What is the estimated **sewage flow** for the proposed residence?	
7. What is the **authorized sewage flow** for the lot?	

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
APPLICATION FOR CONSTRUCTION PERMIT

PERMIT NO. 10-1010-N
DATE PAID: 7/12/2010
FEE PAID:
RECEIPT #:

APPLICATION FOR:

[x] New System [ ] Existing System [ ] Holding Tank [ ] Innovative
[ ] Repair [ ] Abandonment [ ] Temporary [ ] _____

APPLICANT: Orville Stern

AGENT: NA **TELEPHONE:** 407-111-1111

MAILING ADDRESS: PO BOX 1244, Orlando, FL 32801

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TO BE COMPLETED BY APPLICANT OR APPLICANT'S AUTHORIZED AGENT. SYSTEMS MUST BE CONSTRUCTED BY A PERSON LICENSED PURSUANT TO 489.105(3)(m) OR 489.552, FLORIDA STATUTES. IT IS THE APPLICANT'S RESPONSIBILITY TO PROVIDE DOCUMENTATION OF THE DATE THE LOT WAS CREATED OR PLATTED (MM/DD/YY) IF REQUESTING CONSIDERATION OF STATUTORY GRANDFATHER PROVISIONS.

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PROPERTY INFORMATION

LOT: 10 **BLOCK:** NA **SUBDIVISION:** Sandy Hill **PLATTED:** 3/2/71

PROPERTY ID #: 2930310000585858 **ZONING:** R **I/M OR EQUIVALENT: [Y / N]**

PROPERTY SIZE: _____ **ACRES WATER SUPPLY: [ ] PRIVATE PUBLIC [ ]<=2000GPD [ ]>2000GPD**

IS SEWER AVAILABLE AS PER 381.0065, FS? [Y / N] **DISTANCE TO SEWER:** NA **FT**

PROPERTY ADDRESS: 3215 Hills Lane

DIRECTIONS TO PROPERTY: Go east on I-4, take left on HWY 50 and turn right on Hills in 2 miles.

BUILDING INFORMATION **[x] RESIDENTIAL** **[ ] COMMERCIAL**

Unit No	Type of Establishment	No. of Bedrooms	Building Area Sqft	Commercial/Institutional System Design Table 1, Chapter 64E-6, FAC
1	SFR	3	1900	
2				
3				
4				

[ ] Floor/Equipment Drains [ ] Other (Specify) _____

SIGNATURE: *Orville Stern* **DATE:** 7/12/2010

DH 4015, 08/09 (Obsoletes previous editions which may not be used)
Incorporated 64E-6.001, FAC

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
SITE EVALUATION AND SYSTEM SPECIFICATIONS

PERMIT #. 10-1010-N

Classroom Exercise #1

APPLICANT: Orville Stern **AGENT:** NA

LOT: 10 **BLOCK:** NA **SUBDIVISION:** Sandy Hill

PROPERTY ID #: 29-30-31 [Section/Township/Parcel No. or Tax ID Number]

TO BE COMPLETED BY ENGINEER, HEALTH DEPARTEMENT EMPLOYEE,OR OTHER QUALIFIED PERSON. ENGINNEERS MUST PROVIDE REGISTRATION NUMBER AND SIGN AND SEAL EACH PAGE OF SUBMITTAL. COMPLETE ALL ITEMS.

PROPERTY SIZE CONFORMS TO SITE PLAN: [x] YES [ ] NO **NET USABLE AREA AVAILABLE:** _____ **ACRES**
TOTAL ESTIMATED SEWAGE FLOW: _____ **GALLONS PER DAY** [RESIDENCES-TABLE 1/OTHER-TABLE2]
AUTHORIZED SEWAGE FLOW: _____ **GALLONS PER DAY** [1500 GPD/ACRE OR 2500 GPD/ACRE]
UNOBSTRUCTED AREA AVAILABLE: 1875 **SQFT** **UNOBSTRUCTED AREA REQUIRED:** 750 **SQFT**

BENCHMARK/REFERENCE POINT LOCATION: disc on CL of RD
ELEVATION OF PROPOSED SYSTEM SITE IS 6 [INCHES/FT] [ABOVE/BELOW] BENCHMARK/REFERENCE POINT

THE MINIMUM SETBACK WHICH CAN BE MAINTAINED FROM THE PROPOSED SYSTEM TO THE FOLLOWING FEATURES
SURFACE WATER: NA **FT** **DITCHES/SWALES:** NA **FT** **NORMALLY WET?** [ ] YES [ ] NO
WELLS: PUBLIC: NA **FT** **LIMITED USE:** NA **FT** **PRIVATE:** 85 **FT** **NON-POTABLE:** NA **FT**
BUILDING FOUNDATIONS: 5 **FT** **PROPERTY LINES:** 7 **FT** **POTABLE WATER LINES:** 80 **FT**

SITE SUBJECT TO FREQUENT FLOODING: [ ] YES [x] NO **10 YEAR FLOODING?** [ ] YES [x] NO
10 YEAR FLOOD ELEVATION FOR SITE: NA **FT MSL/NGVD** **SITE ELEVATION:** NA **FT MSL/NGVD**

SOIL PROFILE INFORMATION SITE 1

MUNSELL #/COLOR	TEXTURE	DEPTH
10YR 3/2	FS	0 TO 5
10YR 5/6	FS	5 TO 31
10YR 6/8	FS	31 TO 73
10YR 7/6	FS	73 TO 80
		TO
		TO
		TO
		TO
		TO

USDA SOIL SERIES: Candler

SOIL PROFILE INFORMATION SITE 2

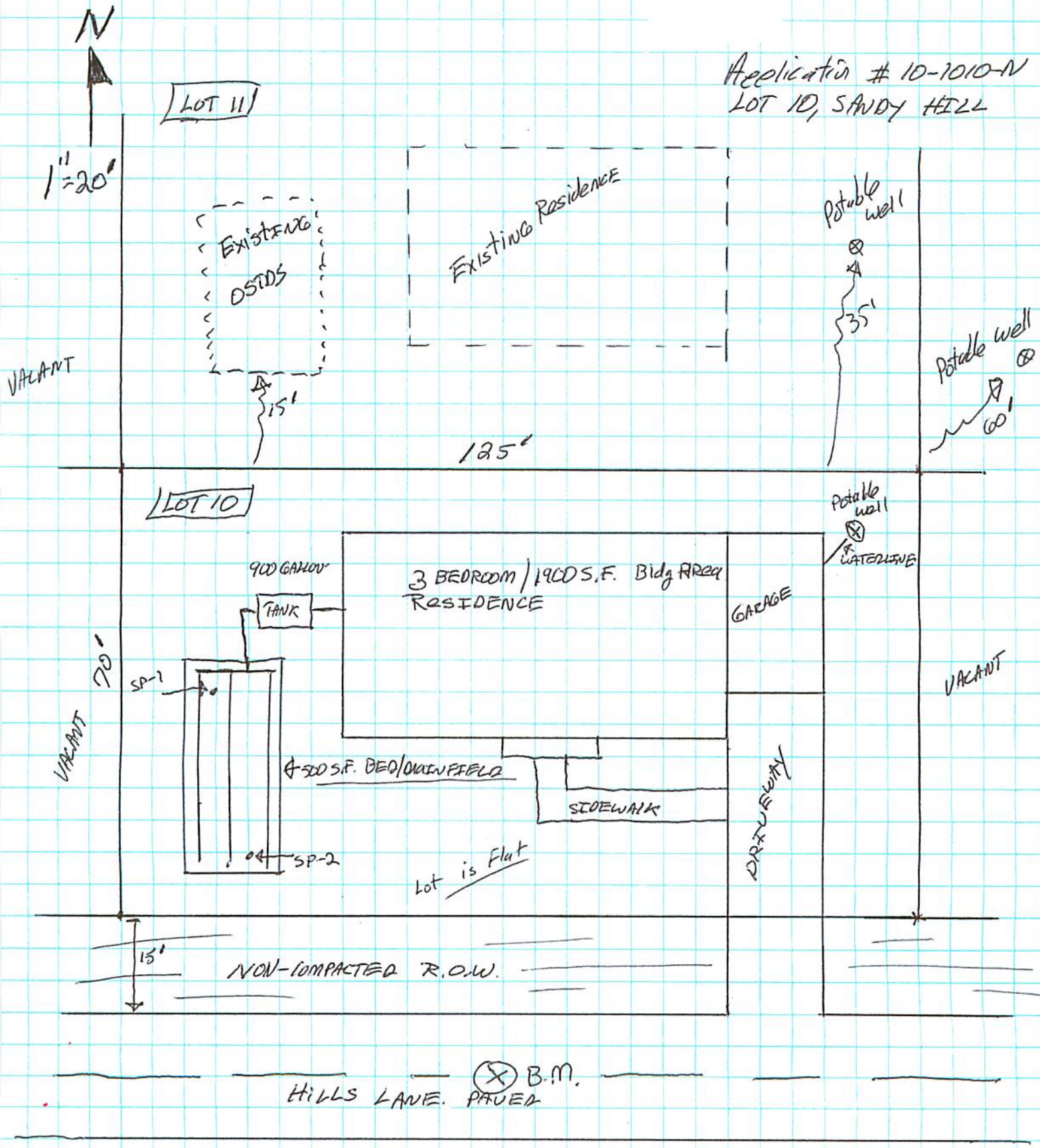
MUNSELL #/COLOR	TEXTURE	DEPTH
10YR 3/2	FS	0 TO 4
10YR 5/6	FS	4 TO 30
10YR 6/8	FS	30 TO 71
10YR 7/6	FS	71 TO 80
		TO
		TO
		TO
		TO
		TO

USDA SOIL SERIES: Candler

OBSERVED WATER TABLE: 72 **INCHES** [ABOVE / BELOW] **EXISTING GRADE. TYPE:**[PERCHED / APPARENT]
ESTIMATED WET SEASON WATER TABLE ELEVATION: 72+ **INCHES** [ABOVE / BELOW] **EXISTING GRADE**
HIGH WATER TABLE VEGETATION: [ ] YES [x] NO **MOTTLING:** [ ] YES [ ] NO **DEPTH:** _____ **INCHES**

SOIL TEXTURE/LOADING RATE FOR SYSTEM SIZING: FS/0.6 **DEPTH OF EXCAVATION:** NA **INCHES**
DRAINFIELD CONFIGURATION: [] TRENCH [x] BED [ ] OTHER (SPECIFY) _____
REMARKS/ADDITIONAL CRITERIA:
SP #1 is 6” ABM, SP #2 is 6” ABM. No WSWT indicators within 72inches

SITE EVALUATED BY: Carroll Sweet ESI **DATE:** 7/12/2010



Approved X Not Approved
SUNSHINE CHD
Date: 7/12/2010
Cancel Sweet EJ

CONSERVATION / WETLANDS AREA

SUBMITTED BY: Orville Stone 7/12/2010

NOTE: THERE ARE NO WELLS SURFACE WATER BODIES, OSTDS, OR ANY OTHER PERTINENT FEATURES WITHIN 75' OF the PROPERTY LINE EXCEPT WHAT IS SHOWN.

TOPS FORM 33041
MADE IN U.S.A.

CLASSROOM EXERCISE # 2:
(complete during the class presentation)

Name:_____ **Date:** _____

Refer to the attachments to answer the following questions.	
Question	**Answer**
1. Has the lot size been confirmed?	
2. Does this lot meet lot size requirements?	
3. What are the property dimensions of the lot?	
4. What is the total square footage of the lot? And acres?	
5. What is the total square footage of permissible rights of ways and easements?	
6. Are there surface water bodies present? If so then what is the total area excluded from the net usable area?	
7. What is the net usable area of the lot in **acres**?	
8. What is the **estimated sewage flow** for the residence?	
9. What is the **sizing criteria** the **estimated sewage flow** is based on?	
10. What is the **authorized sewage flow** for the lot?	

CLASS Room Exercise #4

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
APPLICATION FOR CONSTRUCTION PERMIT

APP DOC # A
PERMIT #: ?
DATE PAID 05/28/2010
FEE PAID: 0
RECEIPT #: 59-PID-127177

APPLICATION FOR:

[X] New System [ ] Existing System [ ] Holding Tank [ ] Innovative
[ ] Repair [ ] Abandonment [ ] Temporary [ ] _____

APPLICANT: Mark Ritter

AGENT: _____ TELEPHONE: _____

MAILING ADDRESS: 623 Yorkshire Dr Oviedo, FL 32765

TO BE COMPLETED BY APPLICANT OR APPLICANT'S AUTHORIZED AGENT. SYSTEMS MUST BE CONSTRUCTED BY A PERSON LICENSED PURSUANT TO 489.105(3)(m) OR 489.552, FLORIDA STATUTES. IT IS THE APPLICANT'S REPONSIBILITY TO PROVIDE DOCUMENTATION OF THE DATE THE LOT WAS CREATED OR PLATTED (MM/DD/YY) IF REQUESTING CONSIDERATION OF STATUTORY GRANDFATHER PROVISIONS.

LOT: 132 BLOCK:

SUBDIVISION: Bentley Woods PLATTED: 02/15/1989

PROPERTY ID #: 09-21-31-514-0000-1320 ZONING: R1 I/M OR EQUIVALENT: [Y / N]

PROPERTY SIZE: 0.23 ACRES WATER SUPPLY: [ ]PRIVATE [X]<=2000GPD [ ]>2000GPD

IS SEWER AVAILABLE AS PER 381.0065, FS? [Y / N] DISTANCE TO SEWER: _____ FT

PROPERTY ADDRESS: 623 Yorkshire Dr Oviedo, FL 32765

DIRECTIONS TO PROPERTY:

right on red bug lake left on aloma, left onpine st right on bentley left on wellington
right on rochester left on yorkshire

BUILDING INFORMATION: [X] RESIDENTIAL [ ] COMMERCIAL

Type of Establishment	No. of Bedrooms	Building Area Ft	# Persons Served	Total Design Flow For This Unit
	4	2461	4	400

[ ] Floor/Equipment Drains [ ] Other (Specify) _____

SIGNATURE: Mark Ritter DATE: 05/28/2010

DH 4015, 08/09 (Obsoletes previous editions which may not be used)
Incorporated 64E-6.001, FAC

v 1.0.0 AP967231 EID1146017

Classroom Exercise #4

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
SITE EVALUATION AND SYSTEM SPECIFICATION

APPLICATION # AP
PERMIT # 59-S2-1
DOCUMENT # SE8

APPLICANT: Mark Ritter

CONTRACTOR / AGENT:

LOT: 132 BLOCK:

SUBDIVISION: Bentley Woods ID#: 09-21-31-514-0000-1320

TO BE COMPLETED BY ENGINEER, HEALTH DEPARTMENT EMPLOYEE, OR OTHER QUALIFIED PERSON. ENGINEERS MUST PROVIDE REGISTRATION NUMBER AND SIGN AND SEAL EACH PAGE OF SUBMITTAL. COMPLETE ALL ITEMS.

PROPERTY SIZE CONFORMS TO SITE PLAN: [X]YES [ ]NO NET USABLE AREA AVAILABLE: ____ ACRES

TOTAL ESTIMATED SEWAGE FLOW: 400 GALLONS PER DAY [RESIDENCES-TABLE1 / OTHER-TABLE 2]

AUTHORIZED SEWAGE FLOW: ____ GALLONS PER DAY [1500 GPD/ACRE OR 2500 GPD/ACRE]

UNOBSTRUCTED AREA AVAILABLE: ____ SQFT UNOBSTRUCTED AREA REQUIRED: ____ SQFT

BENCHMARK/REFERENCE POINT LOCATION: orange dot c/l of road

ELEVATION OF PROPOSED SYSTEM SITE 8.00 [INCHES / FT] [ABOVE / BELOW] BENCHMARK/REFERENCE POINT

THE MINIMUM SETBACK WHICH CAN BE MAINTAINED FROM THE PROPOSED SYSTEM TO THE FOLLOWING FEATURES

SURFACE WATER: na FT DITCHES/SWALES: na FT NORMALLY WET: [ ]YES [X]NO

WELLS: PUBLIC: na FT LIMITED USE: na FT PRIVATE: na FT NON-POTABLE: 26 FT

BUILDING FOUNDATIONS: 5 FT PROPERTY LINES: 5 FT POTABLE WATER LINES: 25 FT

SITE SUBJECT TO FREQUENT FLOODING? [ ]YES [X]NO 10 YEAR FLOODING? [ ]YES [X]NO

10 YEAR FLOOD ELEVATION FOR SITE: ____ FT [MSL / NGVD] SITE ELEVATION: ____ FT [MSL / NGVD

SOIL PROFILE INFORMATION SITE 1

USDA SOIL SERIES: Unkown

Munsell #/Color	Texture	Depth
10YR 7/8	Fill - Fine Sand	0 To 60
10YR 4/3	Fine Sand	60 To 72

SOIL PROFILE INFORMATION SITE 2

USDA SOIL SERIES: Unkown

Munsell #/Color	Texture	Depth
10YR 7/8	Fill - Fine Sand	0 To 32
10YR 7/3	Fine Sand	32 To 48
7.5YR 5/8	CMN/PRM RF	44 To 44
10YR 4/3	Fine Sand	48 To 72

OBSERVED WATER TABLE: 60.00 INCHES [ABOVE / BELOW] EXISTING GRADE TYPE: [PERCHED / APPARENT]

ESTIMATED WET SEASON WATER TABLE ELEVATION: 44 INCHES [ABOVE / BELOW] EXISTING GRADE

HIGH WATER TABLE VEGETATION: [ ]YES [X]NO MOTTLING: [X]YES [ ]NO DEPTH: 44.00 INCHES

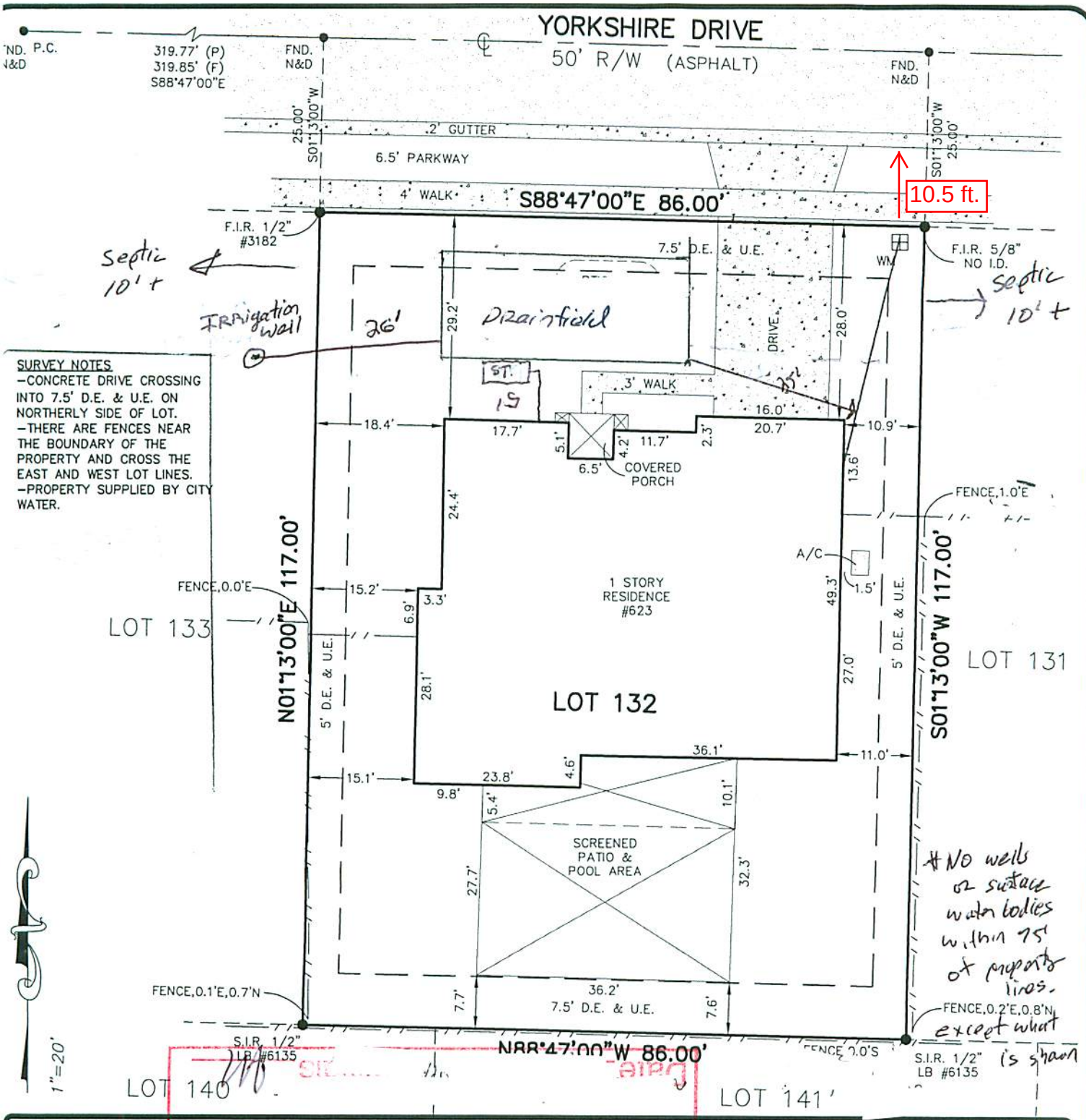
SOIL TEXTURE/LOADING RATE FOR SYSTEM SIZING: Fine Sand/0.60 DEPTH OF EXCAVATION: 0 INCHES

DRAINFIELD CONFIGURATION: [ ] TRENCH [X] BED [ ] OTHER (SPECIFY)

REMARKS/ADDITIONAL CRITERIA

Rp=67", Sp1=58", Sp2=59", Top of mound=36", Existing size of drainfield=15'x35'=525Existing elevation of drainfield=1" bg, Permit based on inspectors measurement of existing drainfield size and elevation, Soil had sufficient structure that profiles could be advanced through water to 72", Fill color/texture=10yr7/8,m4/3, 4/1,3/4, 8/1

SITE EVALUATED BY: DATE: 06/02/2010



PAGE 2 OF 2 PAGES

BOUNDARY SURVEY

LB #6135

CLYDE O McNEAL CERTIFICATE No. 2883 PROFESSIONAL SURVEYOR & MAPPER STATE OF FLORIDA

SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT THIS BOUNDARY SURVEY IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY PREPARED UNDER MY DIRECTION.
NOT VALID WITHOUT AN AUTHENTICATED ELECTRONIC SIGNATURE AND AUTHENTICATED ELECTRONIC SEAL, OR A RAISED EMBOSSED SEAL AND SIGNATURE.

(SIGNED) Clyde McNeal

Digitally signed by Clyde McNeal
DN: CN = Clyde McNeal, C = US, O = Target Surveying, Inc.
Date: 2010.03.09 09:58:14 -05'00'

CLYDE O. McNEAL, PROFESSIONAL SURVEYOR AND MAPPER #2883

TARGET SURVEYING, INC.
SERVING ALL FLORIDA COUNTIES
5601 CORPORATE WAY SUITE 210
WEST PALM BEACH, FL 33407
PHONE (561) 640-4800
FACSIMILE (561) 640-0576
STATEWIDE PHONE (800) 226-4807
STATEWIDE FACSIMILE (800) 741-0576

Lot 132. BENTLEY WOODS according to the Plat thereof. as recorded in Plat Book 41. Pages 79-82, of the Public Records of County. .

Community Number 120293 Panel 0190 Suffix: F Flood Zone: X Field Work: 3/8/2010

Certified To:
JODI L. WORRALL. PRINCIPAL TITLE SERVICES. LLC ; WESTCOR LAND TITLE INSURANCE CO.; HOME1ST LENDING. LLC. its successors and/or assigns.

Property Address:
. 1 YORKSHIRE DRIVE
OVIEDO. FL. 32765

Survey Number: 157527

LEGEND:

A/C	AIR CONDITIONER	XX.XX	EXISTING ELEVATION	L.M.E	LAKE MAINTENANCE EASEMENT	R/W	RIGHT OF WAY
B.R.	BEARING REFERENCE	F.F.	FINISHED FLOOR	O.R.	OFFICIAL RECORDS	S.I.R.	SET IRON ROD & CAP
B.M.	BENCH MARK	F.I.P.	FOUND IRON PIPE	O.R.B.	OFFICIAL RECORDS BOOK	P.P.	POWER POLE
℄	CENTERLINE	FD.	FOUND	U.E.	UTILITY EASEMENT	T.O.B.	TOP OF BANK
(C)	CALCULATED	⊙	WELL	P.C.P.	PERMANENT CONTROL POINT	W.M.	WATER METER
CATV	CABLE RISER	W.C.	WITNESS CORNER	P.R.M.	PERMANENT REFERENCE MONUMENT	PG.	PAGE
C.B.	CATCH BASIN	F.P.K.	FOUND PARKER-KALON NAIL	T.B.M.	TEMPORARY BENCH MARK	(P)	PLAT
D.H.	DRILL HOLE	F.C.M.	FOUND CONCRETE MONUMENT	TEL.	TELEPHONE FACILITIES	P.B.	PLAT BOOK
D.E.	DRAINAGE EASEMENT	F.I.R.	FOUND IRON ROD	P.O.B.	POINT OF BEGINNING	U.P.	UTILITY POLE
D/W	DRIVEWAY	L	LENGTH	P.O.C.	POINT OF COMMENCEMENT	(M)	FIELD MEASURED
Δ	CENTRAL ANGLE/DELTA	L.A.E.	LIMITED ACCESS EASEMENT	P.C.C.	POINT OF COMPOUND CURVATURE	A.E.	ANCHOR EASEMENT
C.M.	CONCRETE MONUMENT	M.E.	MAINTENANCE EASEMENT	P.C.	POINT OF CURVATURE	O.H.L.	OVERHEAD UTILITY LINES
D.B.	DEED BOOK	M.H.	MANHOLE	P.R.C.	POINT OF REVERSE CURVATURE	℄	PROPERTY LINE
D.	DESCRIPTION OR DEED	F.N.	FOUND NAIL	P.T.	POINT OF TANGENCY	CH	CHORD
ESMT	EASEMENT	N&D	NAIL & DISC	●	PROPERTY CORNER		COVERED AREA
E.O.W.	EDGE OF WATER	N.R.	NON RADIAL	R.O.E.	ROOF OVERHANG EASEMENT		CONCRETE
		N.T.S.	NOT TO SCALE	R.	RADIUS (RADIAL)		WOOD FENCE
						-X- X-	METAL FENCE

LEGAL DESCRIPTION AND CERTIFICATION

GENERAL NOTES:

1) LEGAL DESCRIPTION PROVIDED BY OTHERS
2) THE LANDS SHOWN HEREON WERE NOT ABSTRACTED FOR EASEMENTS OR OTHER RECORDED ENCUMBRANCES NOT SHOWN ON THE PLAT.
3) UNDERGROUND PORTIONS OF FOOTINGS, FOUNDATIONS OR OTHER IMPROVEMENTS WERE NOT LOCATED.
4) WALL TIES ARE TO THE FACE OF THE WALL AND ARE NOT TO BE USED TO RECONSTRUCT BOUNDARY LINES.
5) ONLY VISIBLE ENCROACHMENTS LOCATED.
6) DIMENSIONS SHOWN ARE PLAT AND MEASURED UNLESS OTHERWISE SHOWN.
7) FENCE OWNERSHIP NOT DETERMINED.
8) ELEVATIONS INDICATED HEREON ARE IN FEET AND DECIMALS REFRENCED TO N.G.V.D. 1929
9) IN SOME INSTANCES, GRAPHIC REPRESENTATIONS HAVE BEEN EXAGGERATED TO MORE CLEARY ILLUSTRATE RELATIONSHIPS BETWEEN PHYSICAL IMPROVEMENTS AND/OR LOT LINES. IN ALL CASES, DIMENSIONS SHALL CONTROL THE LOCATION OF THE IMPROVEMENTS OVER SCALED POSITIONS.

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