



COUNTY OF SONOMA

ONSITE WASTEWATER TREATMENT SYSTEM REGULATIONS AND TECHNICAL STANDARDS

(OWTS MANUAL)

COUNTY OF SONOMA
August 15, 2019

Version 7.0

Table of Contents

Section 1 General

1.1	Purpose.....	1-01
1.2	Authority.....	1-01
1.3	Applicability	1-01

Section 2 Sewer Connection Required

Section 3 Acronyms and Definitions

3.1	Acronyms	3-01
3.2	Definitions	3-02

Section 4 Criteria for All OWTS

4.1	Purpose of OWTS	4-01
4.2	Prohibitions	4-01
4.3	Mitigations to Prohibitions.....	4-03
4.4	OWTS Designer by System Type	4-04
4.5	OWTS Sizing Criteria Wastewater Flows.....	4-04
4.6	OWTS Locations and Off-Site Easements.....	4-05
4.7	OWTS Design and Permit Applications	4-08
4.8	OWTS Permits Required	4-09
4.9	OWTS Design and Site Plan Requirements.....	4-12
4.10	OWTS Permit Implementation and Construction Inspections.....	4-13
4.11	General Provisions	4-15
4.12	Community Systems.....	4-17
Table 4.1	Minimum Horizontal Setbacks from Public Water Wells	4-02
Table 4.2	Minimum Horizontal Setbacks from Public Water Systems	4-03
Table 4.3	Treatment Standards for New OWTS Not in Conformance with Horizontal Separation Requirements	4-03
Table 4.4	OWTS Designer by System Type	4-04
Table 4.5	Wastewater Design Flows for Single Family Residences and Second Units ...	4-05

Section 5 OWTS Abatements, Abandonments and Repairs of Failing Systems

5.1	Abatements... ..	5-01
5.2	Abandonments	5-02
5.3	Repair of Failing Systems.....	5-02

Section 6 Requirements for Approval of Building Permits

6.1	Building Permits Not Reviewed by Well and Septic	6-01
6.2	Building Permit With Plan Check	6-01
6.3	New Structure on Undeveloped Land	6-02
6.4	New Structure on Developed Land.....	6-02
6.5	Building Improvements to an Existing Structure.....	6-04
6.6	Reserve Replacement Area.....	6-04
6.7	Existing Code Compliant Septic System Documentation	6-04
6.8	Existing Non-Conforming Septic System Documentation	6-04
6.9	Findings Report.....	6-05
6.10	Hydraulic Load Test Guidelines.....	6-06

Section 7 Site Evaluation Methods and Investigation Requirements

7.1	Site Evaluations.....	7-01
7.2	General Site Criteria	7-01
7.3	Soil Profile/Groundwater/Percolation Test Notification	7-06
7.4	Soil Profile Evaluations	7-07
7.5	Groundwater Table Determination.....	7-10
7.6	Percolation Test Suitability	7-13
7.7	Percolation Test Hole Construction.....	7-14
7.8	Percolation Test Procedures.....	7-17
7.9	Percolation Rate Interpretation	7-17
7.10	Wet Weather Percolation Tests	7-18
7.11	Percolation Test Submittal of Results	7-18
7.12	Cumulative Impact Studies	7-19
Table 7.2a	Sewage Application /Soil Loading Rates.....	7-03
Table 7.2b	Illustrative Table for Sizing Absorption Area	7-04
Table 7.2c	Setback Requirements.....	7-05
Table 7.5	50 Percent of Average Annual Rainfall by Zone	7-12
Table 7.8a	Percolation Test Hole Depth Requirements (Standard OWTS)	7-14
Table 7.8b	Percolation Test Hole Depth Requirements (Non Standard OWTS)	7-14
Table 7.10	Percolation Rate Conversion Chart	7-18
Figure 7.4	Soil Percolation Suitability Chart for OWTS.....	7-09
Figure 7.8a	Percolation Test Hole Requirements.....	7-15
Figure 7.8b	Percolation Test Hole Requirements.....	7-16
Map 7.5	Wet Weather Goundwater Determination Zones	7-13

Section 8 Criteria for OWTS Components

8.1	Septic Tank Requirements	8-01
8.2	Septic Tank Sizing.....	8-01
8.3	Septic Tank Water Tight Test Requirements	8-02
8.4	Sump & Pump System	8-02
8.5	Sump & Pump Requirements	8-02
8.6	Alternating Leachfields	8-08
8.7	Intercept Drains	8-09
8.8	Stream and Driveway Crossings.....	8-11
Table 8.2	Septic Tank Capacity	8-01
Figure 8.4a	Sump Detail	8-05
Figure 8.4b	Sump and Pump Requirements	8-08
Figure 8.7	Interceptor Drain	8-10

Section 9 Criteria for Standard OWTS

9.1	Standard OWTS	9-01
9.2	Standard Dispersal Trench	9-03
9.3	Seepage Pits	9-04
9.4	General System Installation Requirements	9-05
9.5	Gravel-less Drain Field Systems	9-05
9.6	Filled Land Systems	9-06
9.7	Shallow Sloping OWTS	9-08
9.8	Standard Shallow Trench Pressure Distribution (STPD) OWTS	9-10
Table 9.1	Illustrative Table for Linear Footage of Leach Line per Number of Bedrooms for a Standard Septic System	9-02
Table 9.6	Filled Land OWTS Trench and Fill Requirements	9-07
Figure 9.2	Standard Leach Line Trench	9-04

Section 10 Criteria for Water Reuse

10.1	Graywater	10-01
------	-----------------	-------

Section 11 Criteria for Commercial, Industrial, and Institutional OWTS

11.1	Commercial, Industrial, and Institutional OWTS	11-01
11.2	Winery OWTS	11-03
11.3	Special/Cultural Events	11-04
11.4	Flow Equalization	11-05
11.5	Package Treatment Plants	11-05
11.6	Performance Wells	11-06
11.7	Grease Interceptors	11-08
Table 11.1	Multiunit and Non-Residential Design Flow Rates	11-02
Table 11.3	Special Events and OWTS Sizing Criteria	11-04
Figure 11.6	Performance Well Detail	11-08

Section 12 Non-Standard Experimental and Alternative OWTS Approval Process

12.1	General	12-01
12.2	Experimental OWTS Criteria	12-01
12.3	Experimental OWTS Process	12-02
12.4	Alternative OWTS Criteria	12-03
12.5	Alternative OWTS Approval Process	12-03
12.6	Approved Experimental and Alternative OWTS	12-03

Section 13 Non-Standard Experimental and Alternative OWTS Standards

EXPERIMENTAL OWTS STANDARDS

13.1	Bottomless Sand Filter OWTS (Geographical Waiver).....	13-01
13.2	Gravel-less Pressurized Dispersal channel (GPDC).....	13-03

ALTERNATIVE OWTS STANDARDS

13.3	Mound OWTS.....	13-06
13.4	Shallow Trench Pressure Distribution (STPD) OWTS.....	13-18
13.5	At-Grade OWTS.....	13-24
13.6	Shallow In-Ground (SIG) OWTS.....	13-29
13.7	Subsurface Drip Dispersal OWTS.....	13-31
13.8	Pretreatment Units.....	13-37
Table 13.3a	Linear Loading Rates (LLR) Based on Limiting Conditions.....	13-07
Table 13.3b	Mound Slope Correction Factors.....	13-11
Table 13.3c	Mound Sand Specification.....	13-12
Table 13.3d	Mound/At-Grade Downslope Soil Cover Requirements.....	13-15
Figure 13.3a	Linear Loading Rate.....	13-08
Figure 13.3b	Mound Cross Section.....	13-09
Figure 13.3c	Mound Plan View.....	13-10
Figure 13.3d	Mound Sand Criteria.....	13-13
Figure 13.3e	Contour Conformance.....	13-14
Figure 13.3f	Balancing Valve.....	13-16
Figure 13.3g	Purge Valve.....	13-16
Figure 13.4	STPD Trench Detail.....	13-20
Figure 13.5a	SIG (requires pretreatment), At-Grade, Mound Soil Below Trench Bottom Requirements.....	13-24
Figure 13.5b	At-Grade.....	13-25
Figure 13.7a	Drip Trench Cross-Section.....	13-32
Figure 13.7b	Single Zone Schematic.....	13-33
Figure 13.7c	Top Feed Manifold.....	13-34
Figure 13.7d	Manifold Connection.....	13-34
Figure 13.7e	Air Relief with Schrader Valve.....	13-35
Figure 13.7f	Headworks.....	13-35
Figure 13.7g	Disinfection Unit.....	13-36

Section 14 Non-Standard and/or Commercial OWTS Operational Permits

Section 15 Vesting Certificates

15.1	General.....	15-01
15.2	Term Limitations.....	15-01
15.3	Prohibitions.....	15-02
15.4	Revocation.....	15-02

Section 16 Subdivisions and Lot Line Adjustment Requirements

Section 17 Variance Requirements

Table 17	Minimum Requirements for Variance Requests	17-02
----------	--	-------

Section 18 Variance Prohibitions and Special Standards Areas

Map 18.1	Camp Meeker	18-03
Map 18.2	Canon Manor	18-04
Map 18.3a	Carmet.....	18-05
Map 18.3b	Rancho del Paradiso.....	18-06
Map 18.3c	Salmon Creek.....	18-07
Map 18.3d	Sereno del Mar/Gleason's Beach.....	18-08
Map 18.3e	Jenner.....	18-09
Map 18.4	Happy Acres	18-10
Map 18.5	Monte Rio	18-11
Map 18.6	Penngrove/South Cotati.....	18-12
Map 18.7	West Petaluma	18-13
Map 18.8	Russian River Meadows	18-14
Map 18.9	South Wright Road.....	18-15
Map 18.10	Thomas Larkin Woods	18-16
Map 18.11	Westvue Meadows	18-17
Map 18.12	South Wright Septic Ban Area	18-18

Section 19 Dispute Resolution

Section 20 Tier 3 Treatment, Monitoring, Inspection & Sampling for Supplemental Treatment Units

Section 21 Waterless Toilets

Appendix A WLS-042

