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Introduction

This document, the County of Sonoma (County) Onsite Wastewater Treatment System (OWTS) Regulations and Technical Standards (*OWTS Manual*) replaces in its entirety the *Regulations for Onsite Sewage Dispersal in Sonoma County* revised November, 2002 et seq. (i.e. Blue Book).

The *OWTS Manual* provides the policy, procedural and technical details for implementation of the provisions of Sonoma County Code Chapter 24-31.5 in support of the State Water Resources Control Board (SWRCB) Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) Tier 2 Local Agency Management Plan (LAMP) requirements.

The previous regulations (i.e. Blue Book), an alphabetized compilation of assorted Policies and Procedures, memos, emails, handouts, office forms, Board of Supervisors Resolutions, sections of County Code, flow charts, checklists, information sheets, etc., was cumbersome, outlived its usefulness and would not suffice to meet the Tier 2 LAMP approval requirements.

The *OWTS Manual* is a document to be used in support of the County of Sonoma LAMP and any amendments shall be subject to approval by the Director of Permit and Resource Management Department (PRMD) and by the North Coast Regional Water Quality Control Board (RWQCB) in accordance with the State OWTS Policy and County regulatory requirements.

The *OWTS Manual* shall be maintained by the PRMD, and shall provide a reasonable process for seeking input from the RWQCBs, OWTS practitioners and the affected public. It is expected that the OWS Manual will be reviewed and updated from time-to-time, typically annually, to keep pace with new issues, policies, procedures, and technologies affecting the use and management of OWTS.

The standards found in sections of the previously enforceable *Regulations for Onsite Sewage Dispersal in Sonoma County* and the current *OWTS Manual* are cross-referenced in Appendix B.
Section 1 General

1.1 Purpose

A. The OWTS Manual amends in its entirety the Regulations for Onsite Sewage Dispersal in Sonoma County (November 2002 et seq.) and is intended to establish conformity with standards for the permit approval, installation, and operation of OWTS within the County. Modifications to County OWTS standards are necessary to update, add and/or replace outdated County regulations and to comply with the State Water Resources Control Board (SWRCB) OWTS Policy. These standards are adopted to address the potential creation of health hazards and nuisance conditions, to protect the quality of surface water and groundwater in Sonoma County, and to meet provisions of Tier 2 Local Area Management Program (LAMP) requirements of the OWTS Policy.

1.2 Authority

A. This OWTS Manual provides the regulatory requirements, policy, procedural and technical details for implementation of the Porter Cologne Water Quality Control Act (California Water Code Section 13000 et.seq.), the SWRQB OWTS Policy, and applicable sections of Sonoma County Code Chapters 7 and 24. The California Water Code 13282 authorizes counties to adopt and enforce regulations, conditions, restrictions, and limitations regarding the dispersal of waste. The SWRQB OWTS Policy authorizes the Regional Water Quality Control Board (RWQCB) to approve a LAMP for the implementation of the OWTS Policy. The Sonoma County Code Chapter 24-31.5 authorizes the Director of the Permit and Resource Management Department (PRMD) to adopt and promulgate standards for OWTS.

1.3 Applicability

A. These standards apply to OWTS, where there is a proposed or existing residence, a place of business or other building or place which people occupy, or where persons congregate, reside or are employed and where the maximum daily flow rate of wastewater produced is ten thousand gallons per day (10,000 gpd) or less.

B. Additionally, review and approval by the RWQCB is required for OWTS in cases where:

1. The maximum wastewater flow rate handled by the OWTS is more than 10,000 gallons per day;
2. The OWTS is categorized as a community system;
3. The OWTS receives high-strength wastewater, unless the waste stream is from a commercial food service building;
4. The OWTS receives wastewater from a commercial food service building: (1) with a BOD higher than 900 mg/L, or (2) that does not have a properly sized and functioning oil/grease interceptor;
5. The RWQCB asserts jurisdiction.
1.4 Limitations

A. No permit for installation, repair, replacement or expansion of an OWTS shall be issued if a sewer connection is required pursuant to section 1.4.B.

B. Connection to a public sewer system shall be required when the following criteria are met:

1. The subject parcel is within a sanitation district boundary;
2. The development is within the minimum service distance, as specified by the respective sanitation district, to the public sewer;
3. The development is for new construction, additions or remodels to existing structure(s) that increase or creates new wastewater flows.

Section 2 Sewer Connection Required

A. Connection to a public sewer system shall be required for all proposed lots, new development, and additions or remodels to existing structure(s) that propose to generate additional wastewater if sewer is available.

B. No permit for installation, repair, replacement or expansion of an OWTS shall be issued if sewer is available.

1. Permits for repairs to the solid pipe or septic tank of an OWTS shall be allowed provided that a nuisance is not created or allowed to continue, the repair complies with these standards, and written permission from the sewer district.

   a. A tank replacement only is allowed, provided there is no proposed increase in flow and the dispersal field is not in failure.
   b. This provision does not apply to replacement OWTS where the connection fees and construction cost are greater than twice the total cost of the replacement OWTS and the local agency determines that the discharge from the OWTS will not affect groundwater or surface water to a degree that makes it unfit for drinking or other purposes.

C. Sewer is available if:

1. The subject parcel is within a sanitation district boundary; and
2. A public sewer is within 200 feet of the proposed or existing structure; or
3. A public sewer is within the distance specified by the respective sanitation district of the proposed or existing structure.
Section 3 Definitions

A-BLD means a building permit issued without plans and without formal plan review, although in some cases supporting documents (such as a floor plan or manufacturer’s listing documents) may be required. It is not intended that an “A-BLD” permit be issued for any change in occupancy.

Absorption Area means the area(s) of the OWTS dispersal system where wastewater is distributed subsurface for the proposes of final treatment and dispersal. Absorption area is also known as leachfield, drainfield or dispersal area.

Accessory Structure means a residential structure not greater than 3,000 square feet in floor area, and not over two stories in height, the use of which is customarily accessory to and incidental to that of the dwelling(s) and which is located on the same lot.

Addition means an increase in living area square footage to the primary residential dwelling or commercial structure and/or any and all accessory structure(s) either through an expansion of the footprint of the dwelling(s) or structure(s), a second floor addition, a basement addition or the conversion of non-habitable space to habitable or living area use. For the purpose of this policy, a new residential accessory structure will be considered an “Addition” to the primary residential dwelling.

Adjusting Valves means a device(s) used in OWTS to distribute wastewater in a balanced or even flow.

Administrative Authority. See Permitting Authority.

Advanced Treatment Unit means an approved measure that utilizes special designs and/or additional technology to treat the effluent to a much higher level than a conventional system. An approved Advanced Treatment Measure shall reduce BOD and Suspended Solids to less than 30 mg/L and provide at least 50% total nitrogen removal, as verified by an approved independent testing laboratory. Advanced Treatment Measures may be required to address a critical factor of concern, as specified in Section 5.1(F) and Table 5.1 (e.g. setbacks to sensitive receptors, depth to groundwater and/or soil conditions). Incentives for dispersal field sizing reductions are possible for some soils when associated with integrated water reuse alternatives. Acceptance of higher hydraulic loading rates for higher quality effluents provide sizing incentives such that improved pretreatment might be used. Additional treatment of OWTS tank effluent can be substituted for soil depth.

Advanced treatment Unit. See Pretreatment.

Alternative OWTS means an approved non-standard OWTS that has demonstrated in the non-standard Experimental phase to function in such a manner as to protect water quality, preclude health hazards and nuisance conditions and capable of producing an equal to or greater quality wastewater effluent and improved performance of and siting for effluent dispersal than a standard OWTS.
Bedrock means solid rock, which may have fractures, that lies beneath soils and other unconsolidated material. Bedrock may be exposed at the surface or have an overburden up to several hundred feet thick.

Bedroom means any living space in a dwelling unit or accessory structure which is 70 square feet and greater in size and which is located along an exterior wall, but not including the following hall, bathroom, kitchen, living room (maximum of one per dwelling unit), family room (maximum of one per dwelling unit), laundry room, closet/dressing room opening off of a bedroom. Refer to Appendix D (PRMD Policy and Procedure Number 1-4-1, Definition of Bedroom) for further information.

B-BLD is a building permit for new additions, remodeling and/or new structures that requires construction plans and plan review. A “B-BLD” is any building permit that does not meet the definition of an “A-BLD” permit. (Section 6: OWTS Requirements for Approval of Building Permits)

Best Available System. See Class I Non-Conforming OWTS.

Best Practical System. See Class II Non-Conforming OWTS.

Bulk Density is the mass of dry soil per unit bulk volume, expressed in gm/cc. The bulk volume is determined before drying to a constant weight at a temperature of 105 degrees.

Cesspool is an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools differ from seepage pits because cesspools systems do not have septic tanks and are not authorized under this Policy. The term cesspool does not include pit-privies and out-houses which are not regulated under this Policy.

Clay means mineral soil particles less than 0.002 millimeters in diameter. It is classified in the USDA Soils Classification Triangle as a soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Class I Non-Conforming OWTS is the very best control and treatment measure for an existing or replacement OWTS that has been or is capable of being achieved. The Class I (Best Available) OWTS is dependent upon the extent of proposed site improvements, the specific site conditions and constraints of a particular parcel that serves an existing structure(s) when a code compliant OWTS to replace an existing OWTS is not possible and there is a proposed increase in flow. (Section 6: OWTS Requirements for Approval of Building Permits)

Class II Non-Conforming OWTS is based on a consideration of the reasonable benefit that will result to replace an existing OWTS. The Class II (Best Practical) OWTS is dependent upon the type and extent of the proposed site improvements, the specific site conditions and constraints of a particular parcel that serves an existing structure(s) when there is no or minimal (i.e. no bedroom addition) increase in proposed flow and a Class I OWTS is not warranted. (Section 6: OWTS Requirements for Approval of Building Permits)
Class III Non-Conforming OWTS is a new or existing system that serves an existing structure and is functioning properly with a concrete, polyethylene or fiberglass septic tank with a minimum capacity of 810 gallons and some leaching field or seepage pit. The system may be undersized or not in compliance with setbacks for code compliant systems. Reserve replacement area may be limited. (Section 6: OWTS Requirements for Approval of Building Permits). All existing permitted voluntary upgraded OWTS, installed prior to the adoption of these regulations, are considered as a minimum Class III OWTS.

Class IV (Non-Compliant) OWTS is an existing system that is classified as Class IV for one of the following reasons: 1) the septic tank is made of unapproved materials such as redwood, steel or cinder blocks; 2) the system used is a cesspool; 3) the system has no documentation (i.e. permit record etc) or 4) the system doesn’t meet Repair minimum standards. B-BLD septic clearances are not allowed under any circumstances for properties with a Class IV system.

Clothes Washer Graywater System is a graywater system utilizing only a single domestic clothes washing machine in a one or two family dwelling that does not include a cross-connected potable water connection or a pump and does not affect other building, plumbing, electrical, or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping, or accessibility.

Coarse Fragments is rock or mineral particles greater than 2.0 mm in diameter.

Cobbles are rock fragments 76 mm or larger using the USDA soils classification system.

Code Compliant OWTS means that the system meets all state and County requirements for soils and setbacks. A code compliant system is required for an undeveloped parcel or a previously developed parcel abandoned for 5 years or more; Code Compliant systems may include OWTS with one (1) approved formal variance request only.

Commercial OWTS is OWTS on a parcel of land that produces a peak daily sewage flow of 1500 gallons per day or more of any wastewater strength or generates a wastewater of any quantity that meets the definition of a high strength wastewater. BOD concentrations up to 900 mg/L are allowed at commercial food service buildings that are equipped with a properly sized and functioning oil/grease separator,

Community System is a decentralized OWTS that serves multiple structures, multiple wastewater discharge sources and/or multiple parcels of land under separate ownership.

Complex Graywater System is a residential graywater system that discharges over 250 gallons per day.

Conditioned Space is any area, room or space in a building being heated exceeding 10 Btu/hr-ft² or cooled exceeding 5 Btu/hr-ft² directly or indirectly by any equipment or passive design feature for the comfort of occupants or for other reasons such as preserving temperature-sensitive goods. (Building Science), (Section 6:OWTS Requirements for Approval of Building Permits)
**Cumulative Effects** are the persistent and/or increasing effect of individual OWTS resulting from the density of such discharges in relation to the assimilative capacity of the ground environment. Examples include salt or nitrate additions to groundwater, nutrient enrichment of surface water, and hydraulic interference with groundwater and between adjacent systems.

**Cut Bank** is a man-made excavation of the natural terrain in excess of three (3) feet. Cuts supported by retaining walls or similar structures shall be included within this definition, as shall steep natural ground surfaces where a sharp break in the ground slope is discernible.

**Dispersal system** means a leach field, seepage pit, mound, bottomless sand filter, subsurface drip, sand fill trench system for final waste water treatment and subsurface discharge.

**Domestic wastewater** means the type of wastewater normally discharged from, or similar to, that discharged from plumbing fixtures, appliances and other household dishwashing facilities and garbage disposals. Domestic wastewater may include wastewater from commercial buildings such as offices, retail stores and some restaurants. Domestic wastewater may include incidental RV holding tank dumping but does not include wastewater consisting of a significant portion of RV holding tank wastewater such as an RV dump station. Typical domestic wastewater will have a 30-day average concentration of biochemical oxygen demand (BOD) less than 300 milligrams per liter (mg/L) or total suspended solids (TSS) less than of 300 milligrams per liter (mg/L) prior to the septic tank or other OWTS treatment component. Domestic wastewater does not include high strength wastewater or wastewater from industrial processes.

**Downslope Property Line** is a property line down-gradient from the proposed OWTS.

**Drainfield or leach field** is a system of rock-filled trenches or beds or infiltration chambers that distribute treated sewage effluent for absorption into the soil.

**Dual Drainfield** is an effluent dispersal system consisting of two complete primary drainfields connected by an accessible diversion valve and intended for alternating use on an annual or semiannual basis.

**Effective Drainfield Depth** is the depth of drain rock below the bottom of the drainfield pipe.

**Ephemeral Watercourse** is a stream or reach of a stream that flows briefly only in response to precipitation in the immediate locality and whose channel is at all times higher than the water table. Any water course that does not meet this definition is to be considered a perennial or intermittent stream for the purposes of the chapter.

**Existing Structure** is one that has been in recent and continuous service. Any structure not in use within the previous five (5) consecutive years must meet the standards for a new on-site wastewater treatment system that would apply to a vacant lot. Proof of recent and continuous service means providing pertinent documentation that substantiates the use of the property during the period in question. These documents may include, but are not limited to receipts (e.g. PG&E, garbage, and water), business records, County or State licenses and permits, deeds, notarized affidavits and dated photographs. (Section 6: OWTS Requirements for Approval of Building Permits)
**Existing Exterior Walls** shall be measured at the exterior face of wall at the perimeter of the living area that is lawfully existing. (Section 6: OWTS Requirements for Approval of Building Permits)

**Expansion area.** See reserve replacement area.

**Experimental OWTS** means a non-standard OWTS deemed conditionally acceptable by the RWQCB, subject to increased performance monitoring and evaluation, prior to acceptance as an approved non-standard Alternative OWTS.

**Field Clearance** is a site visit required when PRMD's file information is not sufficient to show that the proposed work will not adversely impact the OWTS. A field clearance is more often needed when an older OWTS predates PRMD’s record keeping system. In addition, when there is a lack of information on file for the OWTS, a site visit is necessary to verify that an approved OWTS exists on the property.

**Findings Report** is an analysis of the OWTS which includes review of PRMD septic file information and a visual inspection of an existing OWTS and/or well for the purpose of providing potential buyers or interested parties with information regarding a particular septic system or well. A Findings Report may be prepared by PRMD staff, an RCE or REHS. (Section 6: OWTS Requirements for Approval of Building Permits).

**French Drain.** See Intercept Drain.

**Graywater** is untreated household wastewater that has not come into contact with toilet waste. Graywater includes used water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines and laundry tubs. It does not include wastewater from kitchen sinks, dishwashers or laundry water from soiled diapers.

**Graywater System** is a system designed to collect graywater and transport it out of the structure for distribution in an irrigation or dispersal field. A graywater system may include tanks, valves, filters, pumps or other appurtenances along with piping and receiving landscape.

**Groundwater** is water located beneath the ground surface in soil pore spaces or in the fractures of lithologic formations. Groundwater may be present only seasonally (perched). A unit of rock or unconsolidated deposit is called an aquifer when it can yield a usable quantity of water.

**Hardpan** is an irreversibly hardened soil layer caused by the cementation of soil particles. The cementing agent may be silica, calcium carbonate, iron or organic matter.

**Health Officer** means the Sonoma County Health Officer or his/her designated representatives, for purposes of implementation of these standards; the Director of PRMD is the delegated representative.
**High Strength Wastewater** means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams per liter (mg/L) or total suspended solids (TSS) greater than 330 milligrams per liter (mg/L) or a fats, oils, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component. BOD concentrations above 900 mg/L at a commercial food service building require permitting through the Regional Board.

**Holding Tank** is a watertight receptacle used to collect and store wastewater prior to it being removed from a property by means of vacuum pumping and hauling. The use of holding tanks is authorized for limited circumstances, including, but not limited to, for the abatement of health hazards or for certain public use facilities.

**Hydrometer Analysis** is a test used to determine the grain size distribution of soils passing the No. 200 sieve.

**Impaired water bodies means** those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by US EPA pursuant to Section 303(d) of the Federal Clean Water Act.

**Impermeable Soil Layer** is any layer of soil having a percolation rate slower than 120 minutes per inch (mpi) at the bottom of the proposed dispersal area or a Zone 4 Soil Texture according to Figure 7.4 which has a high shrink swell potential (Plasticity Index of greater than 20, ASTM D 4318-84).

**Incompatible Use** is any activity or land uses that would preclude or damage an area for future use as an effluent dispersal site, including the construction of buildings, roads, or other permanent structures and activities that may result in the permanent compaction or removal of existing soil.

**Intermittent stream** is a stream that ceases to flow occasionally or seasonally because of evaporation and leakage. See Perennial Stream.

**Intercept Drain** is a trench filled with drain rock that is designed to intercept and divert ambient groundwater with surface discharge via piping to another location. Intercept drains are typically used to dewater areas upslope of a leachfield or a foundation and lower the water table. Intercept drains are also known as french drain or curtain drain.

**Leach field.** See Drainfield.

**Limiting Condition** is the portion of the soil profile that because of percolation characteristics most restricts the successful operation of a drainfield. A limiting condition would include but not be limited to impermeable soil, semi-permeable soil, expansive clay, fractured rock, consolidated rock, excessive rock content and perched or seasonal elevated groundwater conditions.

**Linear Loading Rate** is defined as the amount of effluent in gallons applied per day per linear foot of the system (gpd/lf). The design linear loading rate is a function of the rate of effluent movement and the direction of movement away from the OWTS (horizontal, vertical or combination).
**Living Area** includes all areas of residential dwellings and residential accessory structures including bathrooms, kitchens, closets, utility rooms, hallways and any other area in a building that is designed for human use. New residential rooms above garages and/or other new residential accessory structures on the property will be considered living area. Areas such as unfinished attic space, unfinished basements, and garages are not considered living area. (Section 6: OWTS Requirements for Approval of Building Permits)

**Local Agency** means any subdivision of the state government that has responsibility for the permitting the installation of and regulating OWTS within its jurisdiction boundaries; typically a county, city or special district.

**Maintenance** of a wastewater treatment system shall mean clearing of stoppages in pipes without removing, replacing, or rearranging the pipes or surrounding soils; repairing or replacing non-treatment components of a wastewater system; pumping liquid and solids from, or otherwise cleaning septic tanks and grease interceptors; cleaning sand filters; and cleaning pressure distribution system pumps and piping.

**Major Addition** is the addition of more than a combined cumulative 640 square feet of living area to the primary dwelling and/or accessory structure with R occupancy sharing a common OWTS. Credit shall not be given for demolished portions of the building when calculating the additional square footage. Structures served by a common OWTS have the option of upgrading the OWTS serving all structures to Class II (non-bedroom major additions) or installing a separate or modified OWTS meeting Class I standards for any bedroom addition. (Section 6: OWTS Requirements for Approval of Building Permits)

**Major Repair** means either: (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater effluent from the dispersal field and/or wastewater backed up in to plumbing fixtures because the dispersal system is not able to percolate the flow of wastewater associated with the structure served, or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating.

**Minor Addition** is the addition of up to a combined cumulative 640 square feet of living area to any primary dwelling and/or less than 640 square feet of living area accessory structure with R occupancy sharing a common OWTS. Credit shall not be given for demolished portions of the building when calculating the additional square footage. (Section 6: OWTS Requirements for Approval of Building Permits)

**Modification** is a remodel or addition of living area (potentially habitable or not) to an existing structure. (Section 6: OWTS Requirements for Approval of Building Permits)

**Monitoring Wells** are installed to monitor ground water. The construction of monitoring wells must meet California Well Standards and be installed under permit by the State of California or the designated enforcement agency. Monitoring wells are not to be confused with performance wells used to evaluate the efficacy of OWTS in the immediate area. See Performance Wells definition.
Mottles is a soil condition that results from oxidizing or reducing minerals due to soil moisture changes from saturated to unsaturated over time. Mottling is characterized by spots or blotches of different colors or shades of color (grays and reds) and size interspersed within the dominant color as described by the USDA soil classification system. The soil condition can be indicative of historic seasonal high groundwater level, but the lack of this condition may not demonstrate the absence of ground water. Mottling in soils usually indicates poor aeration, periodic saturation, or poor drainage.

Nonstandard OWTS means a type of OWTS that utilizes a method of wastewater treatment that may or may not include a conventional septic tank and/or method of wastewater dispersal other than a conventional drainfield for the purpose of producing an equal to or greater quality wastewater effluent and improved performance of and siting for effluent dispersal than a standard OWTS. There are two types of non-standard systems. See Alternative OWTS and Experimental OWTS.

Occupancy is the classification of a structure as defined in the California Building Code (CBC), which is given based on the intended use and/or designed use of such structure. See CBC Chap 3. (Section 6: OWTS Requirements for Approval of Building Permits)

Office Clearance is a review of PRMD files and application documents in the office to determine that the proposed work will not impact the existing OWTS. (Section 6:OWTS Requirements for Approval of Building Permits).

Operating Permit is a renewable and revocable permit to operate and maintain non-standard experimental or alternative OWTS in compliance with specific operational or performance criteria stipulated by PRMD or the regulatory authority.

Onsite wastewater treatment system(s) (OWTS) means individual dispersal systems, community collection and dispersal system, and alternative collection and dispersal systems that use subsurface dispersal. The short form of the term may be singular or plural. OWTS do not include “graywater” systems pursuant to the Health and Safety Code Section 17922.12.

Package Treatment Plant is a method of sewage treatment that includes flows greater than 1500 gpd; wastewater used for Title 22 purposes and does not include process wastewater from agricultural sources etc, unless there is a domestic component. A package treatment plant uses a process involving energy and mechanical, biological, chemical or physical treatment of the wastewater to reduce the Biological Oxygen Demand (BOD), suspended solids, Nitrogen, bacteria and other sewage constituents and which is of a degree of complexity that a certified wastewater treatment plant operator or approved OWTS Service Provider is required.

Percolation Test is a test conducted to determine the permeability or percolation quality of the soil in an area proposed for sewage dispersal.

Perennial Stream is any stretch of a stream that can be expected to flow continuously or seasonally (Intermittent). Perennial streams are generally fed in part by springs and appear on USGS maps as a solid blue line. A perennial stream may include an intermittent stream which is a USGS designated blue line dashed stream that ceases to flow occasionally or seasonally because of evaporation and leakage.
Performance Wells are installed in and around an OWTS to monitor the performance of the system. Performance wells are a component of the OWTS with the design and construction meeting County standards.

Permitting Authority is the state or local unit of government with the statutory or delegated authority to issue permits to build and operate OWTS.

Pressure Dosing is the uniform application of wastewater under pressure is pressure dosing. Wastewater is applied under pressure uniformly on an intermittent basis in the dispersal field through the use of a sump and pump.

Pretreatment is a National Sanitation Foundation (NSF) 40 and/or NSF 245 (listed/certified) and County approved Advanced Treatment Unit that provides pretreatment of wastewater to reduce 5 day biochemical oxygen demand, total suspended solids, nitrogen, and/or the total and fecal coliform content to improve the wastewater quality prior to dispersal.

Public Water System is a water system regulated by the California Department of Public Health or a Local Primacy Agency pursuant to Chapter 2, Part 4, California Safe Drinking Water Act, Section 116275 (h) of the California Health and Safety Code.

Public Water Well is a ground water well serving a public water system. A spring which not subject to the California Surface Water Treatment Rule (SWTR), CCR, Title 22, Section 64650through 64666 is a public well.

Purge Valves are used in OWTS utilizing pressurized wastewater distribution to aid in the cleaning of laterals. Purge valves are generally placed at the end of each lateral.

Qualified Consultant is a California Registered Civil Engineer (RCE) or a California Registered Environmental Health Specialist (REHS). A qualified consultant must have demonstrated experience in the design of on-site sewage dispersal systems.

Rebuild is the removal, demolition, or repairs of the existing construction that exceeds the 50% threshold as set forth in the California Building Code. It does not change the primary dwelling square footage or footprint, the square footage or footprint of any accessory structures, or result in any change in the anticipated sewage flow (as measured by the number of bedrooms or change of use). The removal and/or replacement of 50% or more of the existing exterior walls is considered to be a rebuild. The percentage of removal , demolition or repairs of the existing structure(s) is cumulative from the effective date of the previous 2009 Policy and Procedure 9-2-13 Guidelines for Remodeling and Additions with Respect to On-Site Wastewater Treatment Systems. (Section 6: OWTS Requirements for Approval of Building Permits).

Regulatory Authority. See Permitting Authority.
Remodel is the alteration of a structure that does not change the primary dwelling’s square
footage or footprint, the square footage or footprint of any residential accessory structures, or
result in any change in the anticipated sewage flow (as measured by the number of bedrooms or
change of use). The removal, demolition or repairs that does not exceed the 50% threshold as set
forth in the Uniform Building Code is considered to be a remodel. The percentage of removal
and/or replacement of existing exterior walls is cumulative from the effective date of this
requirement. (Section 6: OWTS Requirements for Approval of Building Permits)

Removal and/or Replacement shall consist of the removal and/or replacement of structural
vertical load bearing members and/or the addition of engineered components to vertical load
bearing members (shear walls, holdowns, and/or other engineered lateral bracing). Windows cut
or in-filled in existing walls shall be considered removed and/or replaced for the portion of wall
altered. Walls removed to accommodate additions shall be considered removed and replaced.
(Section 6: OWTS Requirements for Approval of Building Permits)

Reserve Replacement Area is an unencumbered portion of land that is reserved for the
installation of a future OWTS, in the event of primary OWTS failure. The reserve replacement area
must be suitable for an OWTS as demonstrated with acceptable percolation testing, groundwater
conditions, and adequate depth to soil. Reserve Replacement area is sometimes referred to as
expansion area.

Residential is any structure or room labeled “R-” occupancy as defined by the California Building
Code. (Section 6: OWTS Requirements for Approval of Building Permits)

Rough-in means to install the preliminary (rough) plumbing, electrical and/or mechanical building
materials without making the final connections. (Section 6: OWTS Requirements for Approval of
Building Permits)

Sand is individual rock or mineral fragments in soils having diameters ranging from 0.05 to 2.0
millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. It is
classified in the USDA Soils Classification Triangle as a soil material that contains 85 percent or
more sand and not more than 10 percent clay.

Saturated Soil is the condition of soil when all available pore space is occupied by water and the
soil is unable to accept additional moisture. In very fine textured soils a free water surface may not
be apparent. The extent of saturated soil conditions and anticipated level of high groundwater can
be estimated by the extent of soil mottling, provided the soils contain the necessary iron
compounds to exhibit mottling.

Seepage Pit is a pit filled with drain rock into which effluent from a septic tank is collected for
gradual seepage into the ground. Seepage pits are typically substituted for a leachfield at severely
constrained sites serving existing dwellings.

Septic Tank is a water tight, covered receptacle designed and constructed to receive the
discharge of sewage from a building sewer; separate solids from the liquid; digest organic matter;
store digested solids through a period of detention and allow the clarified liquids to discharge for
final subsurface dispersal.
**Service Provider** means a Registered Civil Engineer, Registered Environmental Health Specialist, or any person who is licensed as a "certified on-site wastewater system inspector" or other equivalent license by passing a state or nationally accredited onsite wastewater exam, capable of operating, monitoring and maintaining an OWTS (e.g. NAWT and/or a proprietary unit certification).

**Setback** is the minimum horizontal distance from any point along the outside edge of a septic tank or the edge of a dispersal area, to any point on the described site feature.

**Simple System** is a graywater system serving a one or two family dwelling with a discharge of 250 gallons per day or less. Simple Systems exceed a Clothes Washer Graywater System.

**Silt** is individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). It is classified in the USDA Soils Classification Triangle as a soil material that contains 80 percent or more silt and less than 12 percent clay.

**Soil** consists of the natural organic and inorganic material near the earth’s surface which is in contrast to the underlying rock material, has been formed over time by the interactions between climate, relief, parent materials, and living organisms.

**Soil Depth** is the combined thickness of adjacent soil layers which are suitable for effluent filtration. Soil depth is measured vertically to bedrock, hardpan, or an impermeable soil layer.

**Soil Horizon or Layer** is a layer of a soil approximately parallel to the land surface and differing from adjacent (underlying or overlying) layers in some property or characteristic. Differences include, but are not limited to color, texture, structure and porosity. Soil horizon is also known as soil zone.

**Soil Profile** is a vertical section of an excavation that displays the soil horizons.

**Soil Structure** refers to the formation of larger soil particles by the cementing together of individual sand, silt, and clay particles. Soil structure affects the pore size and rate at which water will move through soil. The structure of soil is generally described in the following terms granular, platy, blocky, prismatic, massive or columnar.

**Soil Survey** is a general term for the systematic examination of soils in the field and in the laboratory. This would include the soil description and classification, the mapping of kinds of soil, and the interpretation of soils for many uses such as suitability for growing various crops, grasses, and trees, for engineering uses, and predicting the soil behavior under different management systems.

**Soil Texture** is the relative proportions of sand, silt, and clay as defined by the classes of the U.S. Department of Agriculture soil textural triangle. Textural classes may be modified when coarse fragments are present in sufficient number or when the bulk density is excessive.
**Standard OWTS** is a type of OWTS consisting of a septic tank for primary treatment of sewage, followed by a system of drainfield trenches for subsurface dispersal of effluent into the soil. A standard OWTS may utilize gravity flow or a pump system to convey effluent from the septic tank to the drainfield.

**Structure** is that which is built or constructed.

**Sump** is a tank that collects treated sewage for a period of time and then, periodically, discharges by means of a pump.

**Supplemental Treatment.** See Pretreatment.

**Tier 0 OWTS** means existing OWTS that are properly functioning and do not meet the conditions of failing systems or otherwise require corrective action (for example, to prevent groundwater impairment) as specifically described in Tier 4, and are not determined to be contributing to an impairment of surface waters as specifically described in Tier 3.

**Tier 1 OWTS** means a new or replacement OWTS that meets low risk siting and design requirements as specified in Tier 1, where there is not an approved Local Agency Management Program per Tier 2. Tier 1 is not applicable to this LAMP.

**Tier 2 OWTS** means local agency OWTS management program that establishes minimum standards that are differing from requirements from those specified in Tier 1, including the areas that do not meet those minimum standards but still achieve the OWTS Policy purpose.

**Tier 3 OWTS** means existing, new and replacement OWTS that are within 600 feet of impaired water bodies that are subject to a TMDL or an Advance Protection Management Program that is part of a LAMP approved by the RWQCB.

**Tier 4 OWTS** means OWTS that require corrective action or are either presently failing or fail at any time while the OWTS Policy is in effect are automatically included in Tier 4. OWTS included in Tier 4 shall continue to meet applicable requirements of Tier 2 or 3 pending completion of corrective action.

**Topographic Map** is a map showing the topographic features of a land surface, commonly by means of contour lines. It is generally on a sufficiently large scale to show in detail selected man-made and natural features, including relief and physical and cultural features such as vegetation, roads, and drainage.

**Unfinished structure** is any structure, or any part of a structure, with exposed studs, and no insulation or sheet rock covering the walls. Unfinished rooms in a primary dwelling and/or residential accessory structure shall have exterior access doors only with no direct access to the interior of a primary dwelling and/or residential accessory structure. (Section 6: OWTS Requirements for Approval of Building Permits)
Unstable Landform is an area, which shows evidence of mass downslope movement such as debris flow, landslides, rockfalls, and hummocky hill slopes with undrained depressions upslope. Unstable landforms may exhibit slip surfaces roughly parallel to the hillside; landslide scars and curving debris ridges; fences, trees, and telephone poles which appear tilted; or tree trunks which bend uniformly as they enter the ground.

Watercourse is a definite open channel with bed and banks within which water flows either perennially or intermittently, including overflow channels contiguous to the main channel. A watercourse shall include both natural and man-made channels.
Section 4 Criteria for All OWTS

4.1 Purpose of OWTS

A. OWTS shall be located, designed, constructed, and operated in a manner to ensure that sewage effluent does not surface at any time, that is protective of public health, safety and the environment and that percolation of effluent into the soil will not adversely affect beneficial uses of the waters of the state of California.

4.2 Prohibitions

A. OWTS shared in common with other property owners are prohibited except with RWQCB and County authorization [e.g. on-site management district or zone or septic tank effluent pumping (STEP) cluster OWTS].

B. The use of holding tanks is prohibited. However, the use of holding tanks may be authorized for limited circumstances as follows:

1. to abate an existing nuisance or health hazard; or
2. the proposed use is within a sewer service area, sewers are under construction and completion is expected within two years and the sewer agency assumes responsibility for maintenance of the tanks; or
3. it is for use at a campground or similar temporary public facility where a permanent sewage dispersal system is not necessary or feasible and maintenance is performed by a public agency.
4. Public service entity (e.g. volunteer fire department) when it cannot otherwise install sanitary facilities in a building.

C. The use of cesspools is prohibited and not authorized by Sonoma County. Clearances for any B-BLD Permit which requires demonstration of a minimum Class III OWTS.

D. The following are not allowed to be authorized in a Local Agency Management Program:

1. Cesspools of any kind or size.
2. OWTS receiving a projected flow over 10,000 gallons per day.
3. OWTS that utilize any form of effluent disposal that discharges on or above the post installation ground surface such as sprinklers, exposed drip lines, free-surface wetlands, or a pond

1. Slopes greater than 30 percent without a slope stability report approved by a registered professional.
2. Decreased leaching area for IAPMO certified dispersal systems using a multiplier less than 0.70.
3. OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections.
4. OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks.

5. Separation of the bottom of dispersal system to groundwater less than two (2) feet, except for seepage pits, which shall not be less than 10 feet.

6. Installation of new or replacement OWTS where public sewer is available. The public sewer may be considered as not available when such public sewer or any building or exterior drainage facility connected thereto is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises that abuts and is served by such public sewer. This provision does not apply to replacement OWTS where the connection fees and construction cost are greater than twice the total cost of the replacement OWTS and the local agency determines that the discharge from the OWTS will not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses.

7. Except as provided for in subsections 8 and 9, new or replacement OWTS with minimum horizontal setbacks less than any of the following:

   a. 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth.
   b. 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet in depth.
   c. Where the effluent dispersal system is within 600 feet of a public water well and exceeds 20 feet in depth the horizontal setback required to achieve a two-year travel time for microbiological contaminants shall be evaluated. A qualified professional shall conduct this evaluation. However in no case shall the setback be less than 200 feet.
   d. Where the effluent dispersal system is within 1,200 feet from a public water systems’ surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake or flowing water body.
   e. Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water systems’ surface water intake point, within the catchment area of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake or flowing water body.

8. For replacement OWTS that do not meet the above horizontal separation requirements, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such case, the replacement OWTS shall utilize supplemental treatment and other mitigation measures, unless the permitting authority finds that there is no indication that the previous system is adversely affecting the public water source, and there is limited potential that the replacement system could impact the water source based on topography, soil depth, soil texture, and groundwater separation.

9. For new OWTS, installed on parcels of record existing at the time of the effective date of this Policy, that cannot meet the above horizontal separation requirements, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens and any other mitigation measures prescribed by the permitting authority.
4.3 OWTS Designer by System Type

A. The following types of OWTS are required to be designed by a qualified consultant:

1. Experimental and Alternative non-standard OWTS (Sections 12 and 13), filled land systems (Section 9.5), shallow sloping systems (Section 9.6), and any commercial, industrial or institutional uses (Section 11).

2. A repair or modification of an existing OWTS that was originally required to be designed by a qualified consultant.

3. Any parcel that was conditioned through the Project Review Advisory Committee or comparable land use body to have the OWTS designed by a qualified consultant that serves a parcel for which a Qualified Consultant, an RCE or REHS design was a condition of a subdivision.

4. OWTS that serve a parcel where the size, setbacks, topography or soil conditions are so unusually severe as determined by the PRMD staff, that the services of a qualified consultant are required to justify a variance request.

B. A California licensed A or C-42 contractor may design a system which incorporates a pump (but which is otherwise a standard system) when the contractor is the permit applicant and is the contractor for the installation of the OWTS.

C. A California licensed A or C-42 contractor or homeowner/builder may design a Standard OWTS system. Note that at, a minimum, a Field Clearance is required for voluntary repairs (Section 5.1); an office clearance, findings report and/or a pre-perc site evaluation is required for OWTS in relation to Building Permit approval (section 6.2) and a pre-perc site evaluation is required for all new construction and proposed increases in flow (Section 7.1).

<table>
<thead>
<tr>
<th>Type of System</th>
<th>Designer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial/Istitutional</td>
<td>Qualified Consultant</td>
</tr>
<tr>
<td>Experimental OWTS</td>
<td>Qualified Consultant</td>
</tr>
<tr>
<td>Alternative OWTS</td>
<td>Qualified Consultant</td>
</tr>
<tr>
<td>Standard OWTS w/wo Administrative Variance</td>
<td>Qualified Consultant, Licensed Contractor (A ,C-42,C-36) or homeowner/builder</td>
</tr>
<tr>
<td>Standard OWTS with Formal-Variance</td>
<td>Qualified Consultant</td>
</tr>
<tr>
<td>Repairs/Modifications</td>
<td>Consistent with original designer</td>
</tr>
</tbody>
</table>

4.4 Sizing Criteria

A. Sizing criteria used in residential OWTS design shall be based on the number of bedrooms. Wastewater flows used for design of OWTS for single family residences, second units, guest houses and other detached buildings, shall be based on a factor of 150 gal/day per bedroom, for the first five (5) bedrooms, plus 75 gal/day for each additional bedroom, as indicated in
Table 4.4a. The design flows for a primary residence and detached accessory structures (second unit and/or guest house) shall be determined independently, regardless of whether the flows are treated separately or combined in a single OWTS. The area available for OWTS siting and design, in addition to design flow, is also dependent on site specific criteria, such as setback requirements, soil percolation rates, and groundwater determinations.

Table 4.4a
Wastewater Design Flows for Single Family Residences and Second Unit

<table>
<thead>
<tr>
<th>Number of Bedrooms</th>
<th>Design Flow (gal/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>450</td>
</tr>
<tr>
<td>4</td>
<td>600</td>
</tr>
<tr>
<td>5</td>
<td>750</td>
</tr>
<tr>
<td>&gt;6</td>
<td>+75 per bedroom</td>
</tr>
</tbody>
</table>

B. Wastewater flows used for the design of OWTS for multiunit residences and non-residential projects shall be developed based on full consideration of projected activities, occupancy, and facilities. Table-11.1 provides guidelines for use in estimating design wastewater flows. For facilities not listed in Table 11.1 the wastewater design flow shall be estimated based on either (a) appropriate literature references (e.g. USEPA) for the type of facility proposed; or (b) documented wastewater flow monitoring data for a comparable facility. Additionally, the director of PRMD may consider adjustment to the criteria listed in Table 11.1 for specific facilities based upon documented technical information to support the proposed design flow estimate.

C. Reductions in these design flows may be approved by the Well and Septic Section when certain water saving devices are incorporated permanently into the buildings being served. Reductions may be granted when each of the following is provided:

1. Reductions of up to 20% may be granted where 1.6 gallon low flush toilets are installed in all bathrooms for residential and commercial systems. Installations where water saving devices will reduce more than 20% of design flows shall require designs and final inspections by Registered Environmental Health Specialists or Registered Civil Engineers and recordation of water use restrictions against the deed.

2. The septic tank shall be fitted with a corrosion-resistant effluent filter approved by PRMD.

3. The leach field shall be either a) a dual leach field with each half designed at 75% of the reduced design flow (either 50% or 150% additional reserve replacement area must be provided based upon the date the lot was created), or b) a dosed leach field using a pump with equal distribution to leach lines (or fields), the leach field shall be sized based upon 100% of the reduced flow

   a. A reserve replacement area of 100% or 200% must be provided based upon the date the lot was created.

   b. Lots created after October 1971 require 200% reserve expansion area. In a dual leach field system, a portion of the reserve expansion area is constructed with the initial system.
4.5 Off-Site Easements

A. Development pressures in the County have prompted property owners to pursue development of lots which do not meet minimum standards for installation of an OWTS or which are insufficient in size to accommodate an adequate OWTS. One approach to development of these parcels has been placement of leach fields onto adjacent lots through acquisition of a legal easement.

B. The placement of any portion of an OWTS onto an adjacent lot in order to develop a lot that does not meet the minimum standards for the installation of an OWTS and/or is insufficient in size to accommodate an adequate OWTS requires a lot line adjustment, parcel merger or a legal easement. If available, a lot line adjustment or parcel merger to acquire fee title interest to the dispersal areas is preferred over the legal easement option.

C. Easements shall be recorded with the County Recorder’s office in a form acceptable to County Counsel and the PRMD. As a minimum this shall include:

1. A Grant Deed conveying the easement from the record owners of the burdened parcel to the owners of the parcel to be developed.
2. A full legal description of the easement area prepared by a Licensed Land Surveyor or a Registered Civil Engineer whose registration allows surveying.
3. All appurtenant easements for access, pipelines, drainage, etc., shall be conveyed in the grant deed.
4. Conditions, Covenants, and Restrictions recorded on the deed as follows:
   1. A statement that the easement shall bind and inure to the benefit of the respective heirs, personal representatives, successors, and assigns of the grantor and grantee and that all specifications of the easement shall pertain to and run with the land.
   2. A statement that provision of the easement is a public health condition relative to approval of an OWTS permit and that alteration or elimination of the rights and duties without the express written consent of the County of Sonoma may constitute a violation of State and local laws.
   3. The use of the area of the leach field easement by the grantor shall be restricted from uses which are incompatible with proper leach field operation. This shall include structures, vehicular parking, roadways, grading, drainage courses, wells, extensive landscaping, confined livestock or other uses which would disrupt the leach field.
   4. The easement shall include the right of the grantee to do all things reasonably necessary to inspect, maintain, repair and/or replace the leach field.

5. The requirements of Section (C)(1) and (C)(2) are to be reviewed by the County Surveyor’s office prior to permit issuance.
D. All leach fields or expansion areas within easements shall be designed by a Registered Civil Engineer or Registered Environmental Health Specialist.

1. Leach field easements shall be separate and distinct from one another. They shall be of sufficient size to accommodate the total leach field area required by the PRMD regulations (including reserve expansion) plus additional area as necessary to allow vehicular movement for repair or expansion purposes.

E. No lot shall be improved in excess of its capability to properly absorb sewage effluent. Before an OWTS easement is considered on a lot, it must be demonstrated that the proposed easement will not encroach onto area which is necessary for the OWTS or its required expansion area.

1. The area necessary for the OWTS and its reserve expansion area shall be based upon codes in effect at the time of application for approval of the OWTS easement.
2. The OWTS does not need to be modified unless it is in a state of failure.

F. Refer to Section 15 for OWTS easement requirements for new subdivisions of property.

G. An easement grant from one property owner to another, in addition to requirements (A)-(E) above, shall comply with the following:

1. The lot to be developed must abut the lot burdened with the easement (i.e., the two lots must touch at one end or side).
2. An unimproved lot will be considered as “abutting” if it is connected to another lot by an easement provided that the lots are in common ownership. (Sonoma County Code, Chapter 7).
3. An “abutting lot” is also an improved lot connected to another lot by an easement. The lots need not be under common ownership so long as the lot owner has an easement over the abutting lot sufficient for an OWTS.
4. Lots separated by a public road or highway shall not be considered abutting except as provided in (F) above. A public road or highway will satisfy the connection between abutting lots.
   a. An encroachment permit must be obtained from this department.

H. An easement grant when lots are in common ownership, in addition to requirements (A)-(E) above, shall comply with the following:

1. A deed of easement from the owner of each parcel burdened by the easement to the owner of the parcel upon which the building will be located,
   a. Locating the easement upon that parcel;
   b. Stating that the easement is a condition of County approval of the OWTS;
   c. Stating that it is the intent of the grantor and grantee that the easement will not merge with the underlying fee interest even if the easement and the fee come into the same ownership, and that the easement is intended to survive severance of the estates and to be included in conveyances to subsequent purchasers;
d. Stating that the easement may not be quitclaimed or otherwise modified or destroyed without the written consent of the Director of the PRMD, which shall not be unreasonably withheld;
e. Stating that the easement is appurtenant to the lot upon which the building is to be constructed.

2. A Declaration of Covenants, Conditions and Restrictions upon each affected parcel which states that:

   a. the benefits and burdens of the covenants and restrictions shall be binding upon the successive owners of each parcel;
   b. the burdened parcels (described) shall not be used in any manner which may interfere with or adversely affect the safe operation of the OWTS for the structure of lot (___);
   c. the OWTS shall be located in the area described in the easement for sewage dispersal executed by___ on (date) ___ and recorded as Document No. ___ of Official Records of Sonoma County, and which is incorporated by reference (or similar language);
   d. the covenants contained in the declaration may be terminated or modified only with the written consent of the Director of the PRMD, which shall not be unreasonably withheld. This provision would be applicable when and if the Department of PRMD approves some other type of sewage dispersal, and the easements and restrictive covenants are no longer needed.

3. The affected lots shall be conveyed to a title company or some other “straw man” by a deed which incorporates the easements and the declaration of covenants, and then reconveyed back to the owner.

   a. The property owner shall supply the PRMD with a letter indicating his intentions to include the easements and covenants in future deeds of the affected parcels.

4. Another option is the use of a properly constructed “Owner Statement” that provides the following minimum specific items:

   a. Language that prohibits the “removal, alteration or rescinding of the Declaration of Restriction(____) or easement(s) without the written consent of the Director of the PRMD.
   b. For “Declarations of Restrictions” only, reference must be made within the Owner’s Statement to a “Declaration of Restrictions” that must be recorded concurrently with the Map.
   c. Where easements are requested with the existing parcels, the Owner’s Statement must also include the following:

      i. A reference that specifies that the easement is “between adjacent parcels of the same ownership” and that attached hereto as Exhibit ____ is a Grant Deed description of an easement.
      ii. A reference in both the Owner’s Statement and the easement that the “easement is one that is appurtenant.”
      iii. A reference on both the Owner’s Statement and the easement that the “doctrine of merger shall not apply.”
4.6 OWTS Permits

A. A valid permit is required to install, repair, replace, modify, destroy, or abandon any part of an OWTS.

1. The PRMD may approve, conditionally approve or deny a permit to do any work on an OWTS. The PRMD may issue a permit only when all the requirements specified in this chapter for an OWTS are met. The permit may contain conditions that apply to the construction, operation and maintenance of the system. Only OWTS work authorized in the approved plans may be performed unless approved in writing by the PRMD. The permit conditions shall be binding upon the property owner and successive property owners for the life of the system.

   a. Risers and sanitary tees may be replaced without permit.
   b. Repair or replacement of broken or disconnected sewer line from house to the septic tank or from the septic tank to the distribution box or diversion valve may be replaced without a permit. If the replacement of pipe requires replacement of the distribution box then a repair permit is required.

B. OWTS permits for single family residences on parcels where no other dwelling exists will be reviewed for zoning conformance by the PRMD Permit Specialists. All other projects, including second dwelling units and accessory structures on one parcel will be forwarded to the planning cubicle for zoning review.

1. Where there is a conflict with zoning requirements, or where the OWTS permit cannot be issued until a discretionary approval is obtained, the applicant will be notified in writing with a copy to the Environmental Health Specialist working on the OWTS permit application.

2. Zoning clearances are not required for the following OWTS permits:

   a. Repair permits for existing, malfunctioning OWTS systems where there is no change of use proposed.
   b. OWTS systems installed for remodeling of structures where there is no change in the building footprint, no additional square footage and no change in use.

C. Unless installation of the OWTS is finaled by PRMD, permits shall expire and become void three (3) years from the date they are issued. Upon written request, a permit that has not expired may be renewed once, within 180 days after the permit expiration date, for a maximum of three (3) years beyond the initial expiration date, assuming no regulatory changes have taken place since the original permit was issued.
4.7 OWTS Permit Applications

A. An application for an OWTS permit (Appendix A) shall be submitted by the property owner, consultant, or contractor. The application package shall contain the following:

1. Appropriate fees.
2. Required number of site plans, drawn to scale.
3. Two copies of floor plan of the proposed structure(s).
4. If required, results of soil profile investigations, if not on file with the Department
5. If required, results of soil percolation tests, if not on file with the Department
6. OWTS design.
7. If a nonstandard OWTS, include:
   a. Operational Permit application
   b. Supplemental Agreement
   c. Easement Agreement signed and notarized
   d. These three items are not required for a Design plan check, but will be required for Permit Application.

4.8 Plan Check Fees

A. An applicant may pay for a plan check using the standard “Request for Service” form (Appendix A) and that fee will be credited towards the OWTS permit for a period of up to one year. Refer to most current version of the PRMD fee schedule.

4.9 Permit Transfer

A. In the event of the transfer of an issued OWTS permit, prior to final construction approval, the following actions are required

1. If there is no change in the OWTS plans or house plans, it will be treated as an OWTS Office Clearance to use the old plans
   a. Verify that contractor information, worker’s comp and signatures are correct
   b. Update Easements and Supplemental Agreement for nonstandard OWTS
   c. Enter into Accela and charge Office Clearance fee.

2. If there is a change in house location, but no change in the OWTS plans and the change may affect the OWTS plan
   a. Complete items 4.9(A)(1)(a) and (b).
   b. Enter into Accela and charge Field Clearance fee.

3. If the OWTS design and house location remain the same, but there is a change in floor plans (which does not impact the OWTS)
   a. Review new house floor plan and complete items 4.9(A)(1).
4. If there are changes which significantly impact the approved OWTS plan in any way
   a. Complete items 4.9(A)(1)(a) and (b).
   b. Applicant required to submit new OWTS plans. Collect plan review fee.

5. If the property requires a Service provider, the same Service provider shall be retained or a contract needs to be transferred to a new certified Service Provider.

4.10 OWTS Site and Design Plan Requirements

A. The site plan shall be completely dimensioned and drawn to scale with a minimum of 1 inch = 20 feet. The site plan shall include but not be limited to the following:

1. A vicinity map showing property boundaries and dimensions with north point, parcel number, street address. (May be drawn on a smaller scale than 1 inch = 20 feet)
2. A topographic map with contour lines and elevations (in feet) of the area in and around the proposed OWTS or percentage of slope when slope is not a critical factor in system design.
3. Location of any known pertinent (passing or failing) tests (i.e. soil profile pits, soil percolation tests, and groundwater determination tests, etc.)
4. Designated 200% reserve replacement dispersal area, or 100% reserve replacement dispersal area as required by regulations (200% reserve leach field area where required or 100% reserve replacement leach field area for a standard OWTS on a lot that has been demonstrated to have been created prior to October 1, 1971).
   a. Whenever possible, reserve replacement areas should be placed as far as possible from primary fields to avoid areas of saturation when the reserve replacement field must be utilized.

5. Detail Page showing:
   a. Application Rate, design capacity (number of bedrooms), projected daily sewage flow, wastewater application area (trench, bed length, or area), and all relevant calculations.
   b. Calculations for determining the sizing criteria, and the projected design of the OWTS, including pump sizing, pump curves, dose volume and frequency.
   c. Cross section of dispersal trenches and interceptor drain (if applicable).
   d. Spacing and sizing of the orifices and laterals.
   e. Proposed details and dimensions of the septic tank, treatment units, pump tanks, performance wells, valves, dispersal trenches or beds, alarm and control panels, and any other equipment specifications.
   f. Complete description of the wastewater, treatment and dispersal processes.

6. Location of any existing and/or proposed retaining walls, surface and subsurface drainage systems.
7. Location of any existing and/or proposed underground utilities, water supply lines and/or wells.
8. Location and dimensions of any existing and/or proposed improvements (e.g. paved areas, all structures (including house location, accessory structures, outbuildings, swimming pools, large trees, solar arrays, etc.))

9. Location of any existing and/or proposed easements, public right of ways, overhead utilities, building sewer line, and any other OWTS.

10. Location of the OWTS in relation to property lines, neighboring systems, neighboring wells, streams, springs, lakes, ponds, marsh areas, cut banks, and other features which may affect the performance of the system.

11. Any other site details that could potentially impact the function and/or design of the OWTS.

12. In Zones 3 and 4 Marginal Water Availability and Water Scarce Areas, a proof of water report shall be required prior to approval of an OWTS Permit and Building Permit Clearances. Said report shall be prepared and certified by an appropriate licensed professional. Refer to Map 4.10

a. For additional information and specific requirements refer to PRMD Policy and Procedure 9-2-28, Well Pump Test Guidelines in Water Scarce Areas and Sonoma County Code Chapter 7-12 (Appendix C).

13. In areas where the water source is a community water system, a letter of approval for connection, including the total number of connections currently served by the system, is required.

Map 4.10 Groundwater Availability Zones
4.11 Construction Inspections

A. The proper construction of an OWTS is crucial for the long term use and operation of the system. Improper installation can render a system non-functional and subject to failure. The system components and construction shall be inspected by PRMD staff for compliance with permit conditions, this document and any other PRMD requirements. The following construction inspections shall be conducted by the consultant/contractor and Department staff.

1. Pre-construction site inspection
2. Gravel placement, trenches or absorption bed should be level in previously approved proper location and placed on contour
3. Interim inspections, including squirt test, performed prior to covering any elements of the system, watertightness test of tank(s), if required
4. Final inspection of the completed system (may require #189 electrical permit prior to final. Start up inspection for pretreatment unit includes Service Provider).

B. The PRMD Environmental Health Specialist must be notified on a County work day, at least 24 hours in advance of desired inspection. A transit, laser or builder’s level must be provided on the site at the time of inspection. No portion of the OWTS may be covered until it is inspected by this department.

C. Final approval of the OWTS permit shall be granted only after the Department staff has completed all necessary system inspections. Final approval of the permit for nonstandard OWTS shall be granted only upon completion of the necessary inspections and receipt of a signed and stamped letter from the qualified consultant certifying the installation of the system as designed and Operational Permit fee paid and activated.

Section 5 OWTS Repairs

5.1 Repairs (Abatement, Voluntary, B-BLD Upgrade)

A. There are three types of OWTS repair/upgrade situations as follows:

1. An Abatement Repair Permit is required as a result of a Code Enforcement action;
2. A Voluntary Repair Permit is initiated by the property owner in response to a failing or marginally functional OWTS. A voluntary repair does not include upgrading of existing OWTS for purposes of structure remodels, additions, accessory structures, rebuilds and/or changes in use. There is no B-BLD construction activity associated with this repair. Although a Field Clearance is required with a Voluntary Repair to assess setback requirements and other site limitations, a more thorough Findings Report evaluation, including soil morphology, is recommended but not required. However, any future B-BLD structure improvement requires the OWTS to be brought up to the applicable OWTS B-BLD upgrade criteria, as specified in Section 6.
3. A B-BLD Upgrade Permit is required in relation to a B-BLD structure improvement project. The classification of the OWTS Upgrade Permit (Class II or III Conditional Statement) that may be appropriate is dependent upon the site specific conditions and constraints and the extent of the proposed parcel improvement(s). Refer to Section 6.

B. Repairs to an OWTS generally include an alteration or replacement of a malfunctioning or inadequate component of the system. If the malfunction creates a public health hazard and nuisance, the repair must be made immediately under an OWTS permit to eliminate the hazard and/or nuisance.

1. Risers and sanitary tees may be replaced without permit.
2. Repair or replacement of broken or disconnected sewer line from house to the septic tank or from the septic tank to the distribution box or diversion valve may be replaced without a permit. If the replacement of pipe requires replacement of the distribution box then a repair permit is required.

C. The Department staff shall evaluate the malfunctioning OWTS to determine the source of the malfunction. The evaluation shall include a review of the age and history of OWTS, the design flow and the actual flow, the site and soil conditions and the most appropriate repair to the system based on the review.

D. The use of holding tanks as the primary septage dispersal method is prohibited except in the repair of an existing system when no other alternative is available. In no case shall holding tanks be permitted for new source septage dispersal or expansion of existing septage flow. Cesspools and/or dry wells are prohibited.

E. Many OWTS in Sonoma County were installed prior to adoption of codes by the County or when codes were rudimentary. When it becomes necessary to repair these systems, the repair often times cannot fully comply with present day code requirements. It is necessary to balance the need between maintaining a reasonable degree of Public Health protection and accommodating a repair request in cases where current standards cannot be met.

F. OWTS repairs should comply with current code setbacks if possible. In cases where it is impossible to adequately repair the existing OWTS given current setbacks, the Table 5.1 setbacks will apply (as measured from any point of the septic tank or dispersal field to the closest point of the designated feature)

1. All other setbacks must meet current standards to the extent possible and feasible.
2. Seepage pit installations may require increased setbacks.
3. A Repair Permit may be issued for the repair of an OWTS that does not meet these setback requirements, provided the Repair OWTS is no closer to sensitive receptors than the existing OWTS.
4. Whenever repair setbacks cannot be met, a pretreatment unit shall be added to the system and will be considered a Class II for building purposes.
Table 5.1
Minimum Setback for OWTS Repairs

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setback</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Site Wells and Neighboring Wells (the repair must maintain a 100 foot setback or must be located no closer than the existing OWTS but in no case less than 50 feet)</td>
<td>100 feet</td>
</tr>
<tr>
<td>Ephemeral Streams</td>
<td>25 feet to bank of stream</td>
</tr>
<tr>
<td>Perennial Streams, Lakes, Ponds</td>
<td>50 feet to bank of stream</td>
</tr>
<tr>
<td>Cutbanks</td>
<td>25 feet to top of cut</td>
</tr>
<tr>
<td>Flood Areas (designated floodway as shown on FEMA maps for Sonoma County)</td>
<td>OWTS cannot be located in a designated floodway</td>
</tr>
</tbody>
</table>

G. Floor Plans. Two copies of a clearly drawn floor plan of the existing dwelling shall be submitted with the permit application. These plans will be reviewed and stamped by the Well and Septic Section but will not be field verified (stamp is to read reviewed but not field verified). When floor plans are not on record, County staff may refer to Metroscan or use County Assessor field notes provided by the owner.

H. Site Plans. Site plans shall generally comply with plot plan requirements for new OWTS systems (see Sections 4.6, 4.7 and 4.10 for Permit, Permit Application, and Site and Design Plan Requirements).

5.2 Sizing of OWTS Repair Replacement

A. The existing septic tank must be verified as to size, location and condition. It must generally meet current sizing criteria, construction practices, and must be of approved materials (wood or metal is not acceptable). Verification of the tank’s condition should address the presence or absence of risers, tees, effluent filter and water tightness. A two-compartment septic tank that is sub-standard in size but is no less than 750 gallons may be grandfathered in on a voluntary repair but the system will be considered as a Class III system. All installations of replacement septic tanks must comply with IAPMO standards of approval.

B. All dispersal fields will generally be sized based upon soils morphology. Percolation testing may be used for sizing of dispersal fields if the applicant wishes to use percolation tests as a supplement to soils morphology. Soil profile holes are recommended in all cases. If profile holes are not evaluated by PRMD Well & Septic staff, the Sonoma County Soil Survey and/or information of neighboring lots may be used as a guide. If there is insufficient area on the lot to accommodate an adequately sized leach field, this shall be noted on the conditional repair statement. Refer to Table 5.2 Guidelines for sizing of leach fields by soils morphology.
Table 5.2
Guidelines for sizing OWTS repair leach fields by soils morphology

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Estimated Perc Rate</th>
<th>Linear Ft/BDR (Std)</th>
<th>Gal/Sq Ft/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loamy sand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>loose</td>
<td>&lt;5 mpi</td>
<td>63</td>
<td>1.2</td>
</tr>
<tr>
<td>friable</td>
<td>5-40</td>
<td>63-143</td>
<td>1.2 – 0.487</td>
</tr>
<tr>
<td>firm</td>
<td>40-60</td>
<td>143-165</td>
<td>0.487 – 0.35</td>
</tr>
<tr>
<td>very firm</td>
<td>60+</td>
<td>165+ **</td>
<td>0.35 - 0.2</td>
</tr>
<tr>
<td>Sandy clay loam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>friable</td>
<td>5-60</td>
<td>63-165</td>
<td>1.2 - 0.35</td>
</tr>
<tr>
<td>firm</td>
<td>60-90</td>
<td>165+ **</td>
<td>0.35 – 0.2</td>
</tr>
<tr>
<td>very firm</td>
<td>90+</td>
<td>**</td>
<td>0.2</td>
</tr>
<tr>
<td>Sandy clay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clay loam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silt loam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>friable</td>
<td>60-90</td>
<td>165+ **</td>
<td>0.35 – 0.2</td>
</tr>
<tr>
<td>firm</td>
<td>90-120</td>
<td>**</td>
<td>0.2</td>
</tr>
<tr>
<td>very firm</td>
<td>120-480</td>
<td>**</td>
<td>0.2</td>
</tr>
<tr>
<td>Clay</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Soils marked ** call for a non-standard OWTS repair (such as a mound, pressure distribution system, at-grade, drip dispersal, sand filter or County approved Advanced Treatment Unit). A non-standard OWTS repair is not mandatory but is strongly recommended. However, if a septic clearance is required for a B-BLD Upgrade Permit, a non-standard OWTS may be required, dependent upon the extent of property improvements.
2. If soils profile shows coarse sands or greater than 50% fractured rock, gravel, or cobbles, an approved pretreatment unit is recommended prior to the dispersal field. The approved pretreatment unit must be provided for the installation to meet Class I or II requirements for a B-BLD septic clearance in conformance with Section 5 OWTS B-BLD Upgrade permit requirements.
3. A smaller, larger or non-standard type leach field may be approved by the District Environmental Health Specialist based upon the site evaluation.
4. If a range of estimated perc rates is given above, evaluation as to sizing of the dispersal field will be based on soil structure, particle size, porosity, clay mineralogy and depth to ground water and/or impermeable soil below trench bottom.
5.3 Siting of OWTS Repairs

A. Depth to Groundwater. Groundwater determinations are not required unless trenches deeper than 3 feet are proposed on slopes of less than 5%. In any case, the trench depth or system location proposed cannot present a greater potential hazard to groundwater than presently exists on the property. An alternative system repair, such as a mound, is recommended if evidence exists of elevated groundwater conditions.

B. Depth of Soil. If an impermeable soil horizon exists within 3 feet below the proposed trench bottom and the leach field is on a sloping site, then an interceptor drain may be required. This requirement may be waived if unsuitable conditions exist for an interceptor drain installation or if uphill drainage is minimal.

C. If an impermeable soil horizon exists within 3 feet below the proposed trench and the leach field site is in a basin, an alternative system, such as a mound, is recommended. Oversizing of the leach field is recommended when abrupt changes in soil horizon exist (An impermeable soil horizon is one in which there are zone 4 soils or percolation rates slower than 120 mpi).

5.4 OWTS Repair Restrictions and Limitations.

A. The system must be designed by a Qualified Consultant if the repair is to serve a commercial use or it is proposed as a non-standard system. The repair system must be designed by a Registered Environmental Health Specialist, a Registered Civil Engineer, a C-42 or a General Engineering Contractor if any of the following exists: limited site conditions, questions as to the ability to maintain required setbacks, variance prohibition areas, limited or no reserve repair area, steep topography, a variance is required or a pump is needed.

1. If the repair requires a pretreatment unit, a Qualified Consultant is required for the design and a Service Provider shall be involved in the repair.

B. Seepage Pits may be allowed under the following conditions:

1. Separation of the bottom of seepage pits to groundwater shall not be less than 10 feet.
2. They can be no deeper than 6 feet.
3. They can only be installed if a satisfactory dispersal trench installation cannot be installed.
4. They will be considered a Class III system, unless pretreatment is added to upgrade the system to Class II status.
5. It is recommended that seepage pits be at least the same size (gallonage capacity) as the septic tank size that would be required based upon the number of bedrooms in the dwelling.
6. All seepage pits shall be completely filled with drain rock. No redwood seepage boxes will be permitted.
C. The property owner must sign (notarized signature) the PRMD approved form (Appendix D) indicating knowledge, understanding, and acceptance of the conditions under which an OWTS Abatement or Voluntary Repair Permit is issued whenever a Repair Permit is issued for an OWTS that is non-conforming to present code requirements and may require a Conditional Statement (i.e. bedroom restriction) of permit conditions and use restriction (Appendix A) that shall be filed with the County Recorder.

5.5 Abatements

A. Any OWTS that causes sewage to surface on the ground is deemed to have an adverse effect on groundwater and surface water and to be a public health hazard and a nuisance. Any OWTS septic tank failure, such as a baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating is deemed to be failing (OWTS Policy Tier 4). Such a system is defined as a failing OWTS and shall be immediately corrected or abated by the Department.

1. Any replacement, repair, alteration, enlargement, improvement or reconditioning of a failing OWTS must be conducted under an OWTS permit issued by PRMD.

B. Except in the case of a voluntary repair permit application, there are two classes of septic work to which Code Enforcement penalty fees may apply, construction without permit or repair of a failing septic system.

Once PRMD determines a system is failing, adequate notification to the property owner is required.

1. A Notice of Violation or Notice and Order is adequate notification. However, a written notice or letter produced by PRMD and provided to the property owner may be considered adequate notification as determined by PRMD supervisory or management staff.
2. A reasonable period shall be given to allow the property owner to obtain a repair permit and complete repair work. Enforcement staff shall treat failing septic systems in the same manner as sub-standard housing regarding the imposition of penalties.

1. If a repair permit is submitted within 30 days of sending a Notice of Violation or Notice and Order, only investigation fees apply.
2. If the owner delays response beyond 30 days, both investigation and penalties will apply.

i. The imposition of penalties may be extended if the applicant can demonstrate a reasonable justification why a permit application could not be submitted within 30 days in accordance with Section 1-7.1 (d) Sonoma County Code. Reasonable justifications include, but are not limited, to ground water studies or delay to accommodate the schedule of a licensed professional.
C. For residential properties, the owner shall be allowed to hire a licensed septic tank pumper to pump the failing system until a repair system is installed.

   1. The allowed time period shall be determined by PRMD Well and Septic or Code Enforcement staff.

D. For commercial properties, the property owner or tenant may be allowed to pump the failing system at the discretion of PRMD. Issues such as the availability of public restrooms hand washing facilities, and use as a food facility must be taken into consideration for commercial properties.

E. Investigation and penalty fees for the abatement of failing OWTS and/or installation of an OWTS without permit that may apply are as follows:

   1. For septic system repair or tank destruction permits where the property owner has voluntarily submitted a repair permit and no investigation has been conducted, the permit may be issued without investigation fee or penalty.
   2. For septic system repair or tank destruction permits where a Notice of Violation has been sent and the owner has submitted a septic repair permit within 30 days, penalties shall not be imposed.
   3. For septic system repair or tank destruction permits where PRMD has received a complaint, a Notice of Violation has been sent and the owner has not submitted for a permit within 30 days, penalties shall be calculated
   4. If the responsible party (owner or tenant) fails to correct the violation resulting in an administrative abatement hearing, any penalty as allowed under Section 1-7.1 of the Sonoma County Code may be imposed
   5. For standard or non-standard OWTS constructed without permit, penalties shall be calculated.

5.6 Abandonments

A. Any abandonment of portions or the entire OWTS shall be conducted under an OWTS permit issued by PRMD.

B. In the event that a parcel is connected to public sewer, abandonment of the septic tank(s) is required.

C. The following requirements shall be observed when a septic tank or sump (e.g. tank) is abandoned.

   1. The tank shall be pumped of all contents by a licensed septic tank pumper.
   2. When abandoned in place:
      a. The lid(s) shall be removed and disposed at a sanitary landfill or the tank lid may be broken into small pieces and placed into the tank with the gravel, rock or soils.
      b. Several holes shall be made in the bottom of the tank.
c. The tank shall be filled with pea gravel, drain rock, compacted native soils or concrete slurry. Provision b does not apply if tank if filled with concrete.

3. When tank is removed:

a. The tank and lid(s) shall be removed from the property and disposed at a sanitary landfill.

Section 6 OWTS Requirements for Approval of Building Permits

6.1 Restrictions

A. A code compliant OWTS is required for new development on an undeveloped parcel.

B. In order to maintain the existing housing stock while at the same time accommodating the public's needs and desires to modify existing structures served by OWTS, there is also a need to evaluate and, as appropriate, improve existing residential and/or commercial OWTS whenever a significant remodel, addition, accessory structure, rebuild, or change of use is proposed. This article also addresses requests for replacement/modification of a home or other structure lost by fire or other untoward event within five (5) years of the catastrophic event.

C. Issuance of a Voluntary Repair does not include upgrading of existing OWTS for purposes of present or future structure remodels, additions, accessory structures, rebuilds and/or changes in use. There is no B-BLD construction activity associated with a Voluntary or Abatement Repair Permit. Any B-BLD structure improvement requires the OWTS to meet the applicable B-BLD Upgrade Permit criteria.

D. An Upgrade Permit is required in relation to a B-BLD structure improvement project. The classification of the Upgrade Permit (Class I, II or III) that may be appropriate is dependent upon the site specific conditions and constraints and the extent of the proposed parcel improvement(s).

E. For purposes of interpretation and implementation of this section, refer to Section 3 Definitions.

6.2 B-BLD OWTS Clearance Procedure

A. Verifiable information on the location, construction, integrity and function of the existing system is required.

B. An Office Clearance for B-BLDs that are subject to the criteria for Class III OWTS Permit Standards shall be acceptable when there are file records that provide documentation that the proposed work does not affect the OWTS or potential reserve expansion area, the OWTS installation was finaled less than 20 years before the date of B-BLD application, and the OWTS is not subject to Code Enforcement action.

C. A Findings Report by a Qualified Consultant (RCE, REHS) shall be required for B-BLDs that are subject to the criteria for Class III OWTS site improvements that received OWTS permit final construction approval more than 20 years before the date of the B-BLD application.
D. A PRMD Site Inspection, made in conjunction with a Findings Report by a Qualified Consultant (RCE, REHS), shall be required whenever the OWTS is subject to Code Enforcement action and/or for all proposed B-BLDs that are subject to the criteria for Class I or Class II OWTS proposed site improvements.

E. The Findings Report signed and stamped by a Qualified Consultant shall include, at a minimum, the following information:

1. A layout diagram of the existing system, including north arrow, assessor's parcel number, direction of slope, and scale or measurements to relevant features on the property
2. Indicate the units/structures served by the system, including floor plan of existing structure(s)
3. Evaluation of system performance (may include uncovering distribution boxes to insure that the system is functioning adequately, hydraulic load test or pump test per Sonoma County approved procedure, or evaluation of profile holes in the case of unpermitted OWTS, OWTS subject to Code Enforcement and/or Class I or II OWTS).
4. Estimated age of system
5. Estimated sizing of system
6. Reserve replacement area availability
7. Inspection of all tanks and recent pumpers report (within last 5 years)
8. Classification of system (code compliant, Class I, II, III or IV). An addition may not encumber any potential reserve replacement area. An expansion of the existing footprint of an existing structure or new accessory structure is not allowed if a reserve replacement system cannot be adequately sized. A system where only a seepage pit reserve replacement area is available is not considered to be adequately sized.
9. For non-standard OWTS subject to an Operational Permit, a Findings report will be required (regardless of age) for the following:
   a. Lack of consistent monitoring performed by owner/operator
   b. PRMD inspection concerns have not been addressed
   c. Indication that the system is exceeding flows (per self monitoring forms and/or PRMD inspections
   d. Reserve replacement area has been compromised based on inspections.

F. PRMD shall determine if a variance request is required for those existing OWTS that are required to meet Class I or II status.

G. Any B-BLD clearance involving a retail food facility must be approved by the Department of Health Services, Division of Environmental Health.

H. Additional requirements may apply to properties located within variance prohibition or septic system ban areas.

I. The provisions of this policy do not apply to properties damaged as a result of events of a local, state or federally declared state of emergency (e.g., earthquake, flood, fire, storm).

J. Refer to Table 6.2 for guidance on classification of OWTS required for primary and/or accessory structure remodels, additions, rebuilds and/or change of use.
<table>
<thead>
<tr>
<th>Type of Structure Modification</th>
<th>Class III (Non-Conforming) OWTS</th>
<th>Class II (Non-Conforming) OWTS</th>
<th>Class I (Non-Conforming) OWTS</th>
<th>Code Compliant OWTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Remodel</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non BDR Minor Addition (&lt;640 sf)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non BDR Major Addition (&gt;640 sf)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDR swap (Primary/guest house)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDR swap (Primary/second unit)</td>
<td>X</td>
<td></td>
<td>X</td>
<td>(if meets bedroom definition)</td>
</tr>
<tr>
<td>Detached Accessory Structures &lt;640 sf, R, S or U occupancy</td>
<td>X</td>
<td></td>
<td>X</td>
<td>(if meets bedroom definition)</td>
</tr>
<tr>
<td>Detached Accessory Structures &gt;640 sf, R occupancy</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>(if meets bedroom definition)</td>
</tr>
<tr>
<td>Detached Accessory Structure (No Plumbing)</td>
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<td>BDR Addition, Guest House or Second Unit</td>
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<tr>
<td>Catastrophic Event Rebuild</td>
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<td>Elective</td>
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<td>Commercial (Decrease in Flow and Strength)</td>
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<td>Commercial (Increase in Flow/Decrease in Strength)</td>
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<td>Five (5) Year Rule</td>
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<tr>
<td>Undeveloped Parcel</td>
<td></td>
<td></td>
<td>X</td>
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</tr>
</tbody>
</table>
6.3 A-BLDs and Standard Maintenance and Repair

A. A-BLDs do not require Well & Septic Division clearances. If the scope of work is exceeded to the point that the work no longer qualifies as an A-BLD, a Well & Septic Division Clearance is required. B-BLDs for foundation repair and re-roofing with limited framing replacement (see PRMD Policy 4-0-7, A-BLD Permits), disability accessibility improvements, and seismic safety improvements do require Well & Septic clearance, but are not considered a remodel or rebuild for purposes of triggering an OWTS upgrade, unless the structure is on a cesspool or the OWTS is in failure, in which case a minimum Class III OWTS is required.

6.4 B-BLDS and Extensive Alterations

A. For extensive alterations to an existing California Residential Building Code regulated building involving demolition, removal, or repair of more than 50% of the structure, the building shall meet the requirements for a newly constructed building. For purposes of this Section, “50%” threshold shall be applied if the project involves any of the following:

1. The removal, demolition or repair of more than 50% of the load bearing walls; or,
2. The removal, demolition or repair of more than 50% of the roof structure (including the framing, sheathing, and roof covering of a building but not limited to rafters, trusses, beams, purlins); or
3. The removal, demolition or repair of more than 50% of the interior tenant improvements on a commercial building which reduces the building to a “shell” condition.

B. Note that changes to the supporting members of the wall, include the following:

1. Replacement of all or part of a member, furring of a member, cutting or drilling of members beyond that allowed by the building code for the installation of plumbing, electrical or mechanical systems, moving the members of a wall by jacking them up, storing them on site, or otherwise changing their position in space.
2. Supporting members of the wall include, but are not limited to, studs, plates, headers, trimmers, and associated blocking.
3. When a single stud is altered, for instance to install hold downs, three feet of wall will be considered altered.

C. The following are NOT considered an alteration:

1. Alterations or additions made solely for the purpose of complying with the Americans with Disabilities Act.
2. Additions or repairs solely for the purpose of seismic retrofit.
3. Replacement or alteration of the interior wall coverings, exterior wall coverings, plumbing systems, mechanical systems, or electrical systems, and drilling or cutting of members as allowed by the building code for the installation of plumbing, electrical or mechanical systems.
4. The installation of shear plywood to foundation pony walls.
5. Foundation repair or replacement (provided the foundation walls are not moved more than three feet vertically).

6.5 Residential Bedroom Additions and Elective Rebuilds (Code Compliant or Class I OWTS Required)

A. Any residential bedroom addition shall require either a Code Compliant or a Class I OWTS.

   1. Existing OWTS unutilized for five (5) years or more are required to meet current standards and requirements (Code Compliant).

B. A Class I system can be either a new (replacement) above ground or shallow in-ground non-standard system with an approved variance to one or more standards to replace an existing Class III or IV OWTS, or an existing OWTS with a valid permit on record and may include a variance(s) with incorporation of an approved pretreatment measure. Sufficient area for 100% reserve replacement, which meets the same requirements as the proposed primary system, is required.

C. Although a Class I (Best Available) OWTS nearly meets Code Conforming OWTS standards, in most instances allowances are possible, with an approved variance(s) request, for decreased setbacks, depth of soil below trench bottom and/or reduced soil dispersal area. Low flow fixtures are required for all structures serviced by the OWTS. In no instance shall the acceptance of a decreased soil dispersal area be less than 70% of the estimated OWTS wastewater application rate.

D. A minimum Class I (existing OWTS or B-BLD Upgrade Permit OWTS) is required for the following

   1. A major or minor addition that increases flow (e.g. primary dwelling additional bedroom, guest house or a second unit accessory structure);
   2. An elective rebuild with no increase in flow.

E. Low flow fixtures are required for all structures serviced by the OWTS.

F. A Condition of a Class I OWTS B-BLD Permit requires the notarized signature of the property owner.

G. A new code compliant OWTS is required whenever more than one (1) bedroom equivalent is proposed to replace an existing Class II or III OWTS.

6.6 Major Additions and Catastrophic Rebuilds (Class II OWTS Required)

A. The addition of an approved pretreatment system and disinfection (if necessary) to the existing standard OWTS or upgrade to a non-standard Class II OWTS may be allowed with an approved variance of one or more standards.
B. Although the primary OWTS dispersal field may be limited, sufficient area for 100% reserve replacement, which meets the same requirements as the proposed primary system, is required.

C. A minimum Class II (existing OWTS or B-BLD Upgrade Permit) is required for the following

1. A non-bedroom major addition to the primary dwelling;
2. A primary dwelling/second unit bedroom swap (NOTE approval of a bedroom swap requires a B-BLD for the primary dwelling);
3. Greater than 640 sf R (Residential) occupancy accessory structures (excluding second units) such as pool houses, non-commercial offices, gyms, studios, etc;
4. A catastrophic event rebuild. The following requirements apply to a catastrophic event rebuild:
   a. The replacement of the primary dwelling or accessory structure is due to the loss by fire or other untoward event;
   b. Existing OWTS unutilized for five (5) years or more are required to meet current standards and requirements (Code Compliant).
   c. The replacement of the primary dwelling or accessory structure due to a catastrophic event shall not include an increase in flow nor a greater than 640 square feet increase in square footage with a Class II OWTS.
5. Low flow fixtures are required for all structures serviced by the OWTS.
6. A Condition of a Class II OWTS B-BLD Permit requires the notarized signature of the property owner as well as a Conditional Statement (i.e. bedroom restriction) of permit conditions and use restriction that shall be filed with the County Recorder.

6.7 Minor Additions and Interior Remodels (Class III)

A. A Class III system must comply with the minimum setback requirements, as specified in Section 5.1 OWTS Repairs, Table 5.1.

   1. A seepage pit shall meet the requirements of section 5.4.B

A. A minimum Class III OWTS (existing OWTS or B-BLD Upgrade Permit) is required for the following

1. Any B-BLD clearance required for an interior remodel;
2. A minor (non-bedroom) ≤640 sf addition to the primary dwelling; a primary dwelling/guest house bedroom swap (NOTE approval of a bedroom swap requires a B-BLD for the primary dwelling);
3. Less than 640 sf R (Residential) occupancy accessory structures (excluding guest houses) with or without ½ baths such as pool houses, non-commercial offices, gyms, studios, etc;
4. All U (Utility/Miscellaneous) or S (Storage) occupancy accessory structures with or without plumbing.

B. A Condition of a Class III OWTS B-BLD Upgrade Permit requires a notarized signature of the property owner as well as a Conditional Statement (i.e. bedroom restriction) of permit conditions and use restriction that shall be filed with the County Recorder.
6.8 Commercial Buildings and Changes in Use

A. The structure the OWTS is proposed to serve must have been in recent and continuous service. Any structure not in use for the last five (5) years must meet current standards for a new system.

1. Any OWTS that receives high strength wastewater from a commercial food service building requires a properly sized and functioning oil/grease interceptor.

B. A Qualified Consultant is required to design any commercial/institutional OWTS repair and/or change in use.

C. Any change in use (e.g. change from residential to commercial use or changes in the characteristics or volume of commercial wastewater effluent are subject to the following

1. The same criteria and requirements that apply to Residential “Additions,” “Rebuilds” and “Remodels” apply to Commercial construction activities subject to Well & Septic clearances for B-BLD permit issuance.
2. Any clearance involving a retail food facility must be approved by the Department of Health Services, Division of Environmental Health.
3. If the addition, rebuild, remodel or change in use has the potential for increasing or changing the volume and/or strength of the wastewater discharged to the OWTS beyond the design flow, the following is required

   a. The applicant’s consulting Qualified Consultant must evaluate the proposed septage flows, characteristics and the adequacy of the existing OWTS.
   b. Any necessary modifications to the system shall be designed by an RCE or REHS in accordance with current standards. The California Plumbing Code (CPC), EPA Design Manual or other approved source shall be used as guides for sizing commercial OWTS if actual water use information is not available. Actual water use data should be used whenever possible with a factor of safety incorporated.
   c. Other sewage flow estimates may be considered by PRMD if supported by technical documentation such as a comparative study of at least three similar type establishments. Projected wastewater loading shall be fully substantiated with estimated number of patrons, employees, etc.

D. A code-compliant OWTS is required if there is an increase of 33% or more in the volume and/or strength of the commercial use wastewater generated.

E. A Class I OWTS is required if there is a less than 33% increase in the strength and/or volume of the commercial use wastewater generated.

F. A Class II OWTS is required if there is an increase in the volume and decrease in strength of the commercial use wastewater generated.

G. A Class III OWTS is required if there is no change or a decrease in the volume and strength of the commercial use wastewater generated.
6.9 Hydraulic Load Test Guidelines

A. Septic Tank Hydraulic Load Test
The septic tank hydraulic load test, as described here, is conducted only for standard gravity-fed leachfields, and does not apply if the system utilizes a pump. A separate test is conducted for pump system is described in the next section. The hydraulic load test is conducted after completion of a review of background data, an initial field performance and the septic tank inspection. The hydraulic load test is conducted by surcharging the septic tank with about 150 gallons of water over a 20-30 minute period; and then observing the rise in water in the tank and the subsequent draining process. Tracer dye may be used to assist in observing leachfield failure.

A garden hose discharging into the outlet side of the tank can be used to surcharge the tank. The hose outlet should remain well above the water level of the tank to prevent cross-contamination. Before starting the test, the flow rate from the hose should be determined (i.e., with a 5-gallon bucket and stop watch) to properly gauge the amount of surcharge water added to the tank. Alternately, a portable water meter can be installed between the house faucet and the hose to directly measure the water volume added.

B. Test Procedures
The step-by-step procedures for the hydraulic load test are then as follows:

1. Measure the location of the static water line in the septic tank (at the outlet side) as an initial reference point.
2. Begin surcharging the tank with water to start the hydraulic load test.
3. Observe any rise in the liquid level at the outlet pipe and measure the water level at the end of filling. Typically, the liquid level will rise from 0.5 to 1-inch, at which point the liquid level should stabilize for the remainder of filling; and the return to the initial level in a matter of minutes after filling is stopped.
4. After the filling cycle is finished, the water level decline in the septic tank is observed until the initial level is reached; and the time to achieve this is recorded. If the initial level is not attained within 30-minutes, the test is terminated and the final water level is noted.

C. System Rating
Based upon the water level readings during the test, a hydraulic performance rating shall be assigned to the system in accordance with the guidelines provided in the following table. It should be emphasized that these are guidelines only, and special circumstances may be caused for modifying the evaluation and rating of particular systems. A system receiving a “Failed” rating shall require appropriate upgrading.

D. Pump Systems
The pump test is conducted by adding sufficient water to the basin to activate the pump “on” control and observing the performance of the system over at least one pumping cycle. The total amount of water added should be about 150 gallons, to approximate the same hydraulic loading of the leachfield as for gravity systems. Using a garden hose, the water may be added to the outlet side of the septic tank, or directly to the pump basin. If filling the basin directly,
care should be taken to minimize turbulence and disturbance of sediment or sludge that may have collected in the basin. This can be best accomplished by directing the stream of water against the interior side of the chamber, rather than directly toward the bottom of the pump chamber.

Observe the filling of the basin, and note and measure the point at which the pump is activated. Immediately stop the filling operation and observe the pumping cycle until the pump shuts off. While the pump is discharging, examine the piping system for any leaks. Note and measure the depth at which the pump shuts off, and calculate the volume of water between the “on” and “off” measurements. Compare this dose with the design dose volume specified for the system. If the dose is too high or too low, float controls should be done by a licensed and properly qualified contractor.

The pumping cycle (from “on” to “off”) levels should be timed and the results recorded on the inspection form. Typically, if the pump is sized and operating properly, pump operation lasts 1-5 minutes per dose. Pump cycles lasting longer than this may indicate leachfield clogging and/or pump deficiencies. If this is observed, it should be noted and further investigation of the pump and leachfield should be conducted to determine the specific cause.

If during filling of the basin, the pump does not activate when water reaches the high liquid level control (i.e. “on” float), discontinue the pump test. This indicates a pump failure, defective float switch or wiring problems and will require the repair service of a competent contractor familiar with these types of systems. The pump system failure should be noted, communicated immediately to the resident/owner and follow-up with a notice requiring prompt corrective action.

E. Final Leach Field Inspection
At the completion of the hydraulic load test, the drainfield area and downslope areas should be checked again for indications of surfacing effluent, wetness, or odors. If any of these conditions exist as a result of the hydraulic load test, this shall be considered conclusive evidence of system failure. If the field observations of wetness are not obviously the result of the hydraulic load test, further investigation may be necessary to determine if the drainfield is failing and the cause of the failure. Additional investigative work may include water quality sampling (for total and fecal coliform, ammonia and nitrate) or dye testing. The cause of seepage could be related to gopher holes, site drainage or erosion problems, excessive water use or simply the age of the dispersal system.

F. Clean Up
At the completion of the OWTS inspection and testing, the inspector shall replace all access lids and clean all tools before leaving the site. All tools and equipment that come in contact with wastewater should be cleaned and disinfected with a 1:5 bleach solution: and all contaminated rinse water shall be disposed of in the septic tank.
Table 6.9 Hydraulic Load Test Rating Guidelines

<table>
<thead>
<tr>
<th>Rating</th>
<th>Septic Tank Response to Hydraulic Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>No noticeable rise in water level during filling</td>
</tr>
<tr>
<td>Good</td>
<td>Maximum water level rise of about 1-inch, with rapid decline to initial level within about 5-minutes after end of filling.</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>Maximum water level rise of about 2-inches, with decline to initial level within about 15-minutes after end of filling.</td>
</tr>
<tr>
<td>Marginal</td>
<td>Maximum water level rise of about 3-inches, with decline to initial level within about 30-minutes after end of filling.</td>
</tr>
<tr>
<td>Poor</td>
<td>Water level rise of more than 3-inches, with decline not reaching initial level within 30-minutes after end of filling.</td>
</tr>
<tr>
<td>Failed</td>
<td>Water level rise of more than 3-inches, with no noticeable decline within 30-minutes after end of filling.</td>
</tr>
</tbody>
</table>
Section 7 Site Evaluation Methods and Investigation Requirements

7.1 Site Evaluations

A. Site evaluations for undeveloped parcel code compliant OWTS are required in all instances to allow proper OWTS design and to determine compliance with site suitability criteria prior to approving the installation and use of an OWTS. See Table 7.1 OWTS Selection Criteria and Constraints. Site evaluations shall be conducted by qualified professionals experienced in OWTS with PRMD staff. Professionals qualified to conduct site evaluations are registered geologists, registered civil engineers, and registered environmental health specialists.

B. Site evaluations must be conducted in accordance with regulations and department policies. The site features to be determined shall include, but not limited to the following:

1. Land area available for primary dispersal area and replacement area(s).
2. Ground slope in the primary dispersal area and replacement area(s).
3. Location of cut banks, fills, or evidence of past grading activities, natural bluffs, sharp changes in slope, soil landscape formations, and unstable land forms within 50 feet of the dispersal and replacement areas.
4. Location of wells, intercept drains, streams, springs and other bodies of water on the property in question and within 100 feet on adjacent properties.

C. If applicable, complete Site Evaluations include the requirements of Sections 7.2-7.11.

7.2 General Site Criteria

A. OWTS shall be located, designed, constructed, and operated in a manner to ensure that effluent does not surface at any time, and that percolation of effluent will not adversely affect groundwater or surface water. Site criteria to be evaluated include, but are not limited to the following:

1. Ground Slope
2. Soil Depth
3. Depth to Groundwater
4. Soil Percolation Rates. (Tables 7.2a + 7.2b and 7.10)
5. Setback Distances (Table 7.2c).
### Table 7.2a Sewage Application/Soil Loading Rates (gal/sqft/day)

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<tr>
<th>MPI</th>
<th>Loading Rate (gal/sq ft/day)</th>
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Table 7.2b Illustrative Table for Sizing Absorption Area

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<tr>
<th>Texture</th>
<th>Structure</th>
<th>Grade</th>
<th>Hydraulic loading (Gal/ft²/day)</th>
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</thead>
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<td>Shape</td>
<td>Grade</td>
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<td>Coarse sand, sand, loamy coarse sand</td>
<td>Single grain</td>
<td>Structureless</td>
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</tr>
<tr>
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<td>Single grain</td>
<td>Structureless</td>
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<td>Weak</td>
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<td>Structureless</td>
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<td>Weak, moderate, strong</td>
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<td>Prismatic, blocky, granular</td>
<td>Weak</td>
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</table>

1: STE=septic tank effluent; PTE=pre-treated effluent
2: Higher hydraulic loading rates for pretreated effluent may only be used when pretreatment is not used for one foot of vertical separation credit
Table 7.2c Setback Requirements

<table>
<thead>
<tr>
<th>Minimum horizontal distance required from:</th>
<th>Septic Tank (All Systems) (feet)</th>
<th>Dispersal Area (Standard) (feet)</th>
<th>Dispersal Area (Non Standard) (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building or structures (including driveways, parking areas and paved areas)</td>
<td></td>
<td></td>
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<tr>
<td>Upgradient</td>
<td>5</td>
<td>8</td>
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</tr>
<tr>
<td>Laterally</td>
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</tr>
<tr>
<td>Downgradient</td>
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<tr>
<td>Property line and/or easements</td>
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<tr>
<td>Upgradient</td>
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<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Downgradient</td>
<td>5</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Water supply wells and springs</td>
<td>50 (Note 1)</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Public water supply wells:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispersal depth &lt;= 10 ft</td>
<td>50 (Note 1)</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Dispersal depth &gt; 10 ft</td>
<td>50 (Note 1)</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Public Water Supply Surface Intake:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1200 ft to OWTS</td>
<td>50 (Note 1)</td>
<td>400</td>
<td>400</td>
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<tr>
<td>Less than 2500 ft to OWTS</td>
<td>50 (Note 1)</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Perennially flowing streams (as measured from the edge of the waterbody’s natural or levied bank)</td>
<td>50</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Ephemeral streams (as measured from the edge of the watercourse) and ephemeral water bodies</td>
<td>25</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Drainage ways &gt; 18” in depth</td>
<td>25</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Drainage ways &lt;= 18” in depth</td>
<td>15</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Intercept Drains – Perforated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgradient</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Laterally</td>
<td>25</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Downgradient</td>
<td>25</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Non-Perforated / Solid Drain Pipes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgradient</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Laterally</td>
<td>10</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Downgradient</td>
<td>10</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Ocean, lakes, ponds or reservoir (as measured from the high waterline)</td>
<td>50</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Large trees</td>
<td>10</td>
<td>Considered on a case by case basis</td>
<td>Considered on a case by case basis</td>
</tr>
<tr>
<td>Dispersal field</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic water pipe*</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
### Minimum horizontal distance required from:

<table>
<thead>
<tr>
<th></th>
<th>Septic Tank (All Systems) (feet)</th>
<th>Dispersal Area (Standard) (feet)</th>
<th>Dispersal Area (Non Standard) (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Public Water Main*</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Distribution box</td>
<td>5</td>
<td>4</td>
<td>---</td>
</tr>
<tr>
<td>Fill areas</td>
<td>------</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Cut banks (manmade excavation of the natural terrain &gt;3 feet), natural bluffs, sharp changes in slope. Soil or groundwater depth below dispersal area is ≥ 5 ft</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Soil or groundwater depth below dispersal area is &lt; 5 ft</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Title 22 recycled water dispersal area</td>
<td>5</td>
<td>Per RWQCB requirements</td>
<td>Per RWQCB requirements</td>
</tr>
<tr>
<td>Swimming pools (down gradient)</td>
<td>5</td>
<td>8</td>
<td>25</td>
</tr>
</tbody>
</table>

Note 1: Septic tank and sump shall be watertight.

Note *: Bottom of water pipe shall be ≥ 12" above top of sewer/drain line. Water pipe placed on a solid shelf excavated at one side of the common trench with a minimum horizontal distance of ≥ 12" (2007 CA Plumbing Code Table K-1)

6. OWTS shall not be placed in areas that have been filled, excavated, ripped, plowed altered, modified, or in areas of flooding, drainage problems, or geologic instability.

   a. Such areas that have been filled excavated, ripped, plowed, altered, and/or modified may be acceptable if the soil is stable and soil evaluation indicates characteristics acceptable for installation of an OWTS such as approved structure, texture, consistency, pore space, percolation rate.

7. An adequate reserve replacement area equivalent to and separate from the primary dispersal area shall be reserved at the time of site approval. Incompatible uses of the replacement area shall be prohibited.

8. Other information may be necessary to evaluate the suitability of the proposed OWTS. If the Department determines that the land proposed for the OWTS has severe soil limitations and there is a potential that the introduction of sewage effluent into the soil may create slope instability, submission of a technical report, prepared at the applicant’s expense, by a California licensed engineering geologist, geotechnical engineer or registered geologist shall be required.

### 7.3 Soil Profile/Groundwater/Percolation Test Notification

A. An appointment shall be made with the district Environmental Health Specialist for the purpose of scheduling the preliminary soil profile/percolation test and/or groundwater determination (Pre-Perc). The property owner, Civil Engineer, Registered Environmental Health Specialist, or Registered Geologist shall make the appointment with the district Environmental Health Specialist. The Sonoma County Request for Service Form (Appendix A) shall be filled out and the Pre-Perc Site Survey fee shall be submitted at this time. A copy of the Assessor’s Parcel
Map, one plot plan and a vicinity map shall be submitted with the Request for Service form and the parcel shall be clearly marked in the field.

B. If the soil profile pre-perc review is acceptable, the Civil Engineer, Registered Environmental Health Specialist, Registered Geologist Soil Scientist or his designated representative, shall submit the “Notification to Perform a Soil Percolation” form (Appendix A) to the PRMD and pay the Percolation Test Evaluation fee. If required, a Sonoma County Request for Service Form shall be filled out and fees paid for groundwater determinations.

C. Official testing may occur only after proper notification. The Engineer/Environmental Health Specialist may choose to perform the percolation test at the same time as the previously scheduled Site Survey when authorized by the district Environmental Health Specialist.

D. Soils percolation tests shall be conducted within 120 days of the PRMD notification (unless extended by written approval of the district Environmental Health Specialist).

E. The Well and Septic Section shall be notified a minimum of 24 hours in advance to schedule (on a normal working day before 12:00 noon) of profile hole preparation, any percolation testing, backhoe excavations, ground water determination testing and/or other exploratory work that is being attempted.

F. Official percolation rate measurements may not be performed on weekends or legal county holidays, or outside of normal working hours and shall be performed between the hours of 8:00 a.m. and 5:00 p.m.

G. All percolation tests, groundwater determination tests, and information obtained related to the percolation test procedures shall be submitted to the Well and Septic Section within 90 days of the completion of all on-site testing. This includes any test information data or results that may not prove acceptable for sewage dispersal design (extensions may be requested on a case by case basis).

H. Any information not submitted in the designated time frame to the Well and Septic Section for review may (on a case by case basis) be rejected.

### 7.4 Soil Profile Investigations

A. Soil profile holes for the Preliminary Site Survey Pre-Perc Evaluation typically are constructed prior to any soils percolation testing and/or groundwater determination tests.

1. Wet weather percolation testing and/or groundwater determination tests prior to soil profile evaluations are allowed, however the tests are considered incomplete, pending approval of the soil profile investigation.

B. Profile holes must be adequately covered to prevent entrance if left unattended and backfilled immediately after completion of test procedures. Note: Work is permissible on sites to locate potentially acceptable areas prior to the preliminary evaluation.
C. Soil profiles holes are for the purpose of observing soil structures, texture, formations; the presence of seasonal groundwater; impervious rock formations, etc. Profiles are essential in the evaluation of any parcel for soil suitability for private sewage dispersal systems.

D. A minimum of two (2) soil profile holes will be excavated with a backhoe. One profile hole shall be excavated in the primary effluent dispersal area and one in the reserve replacement area shall be required to demonstrate the suitability of soil conditions. More soil profile holes may be required to demonstrate suitable soil conditions for both the primary dispersal area and the reserve replacement area if the initial two profiles show dissimilar conditions.

E. The profile holes shall be dug to a depth of at least three feet below the proposed absorption surface (trench bottom or two feet below the basal area of a mound).

1. Soil depth is measured vertically to the point where bedrock, hardpan, impermeable soils, rock content greater than 50%, or saturated soils are encountered.
2. For soils having less than 15% silt and clay, a minimum depth to groundwater below the leaching trench shall be five (5) feet.
3. For soils having greater than 15% silt and clay, the minimum soil depth and depth to groundwater below the leaching trench shall be three feet.
   a. Lesser soil depths may be granted only as a variance or for Non-Standard Alternative OWTS.

F. All profile holes excavated shall be evaluated for soil suitability by a Registered Civil Engineer (including Engineer –in-Training under the direction of a licensed Civil Engineer), Registered Geologist, or Registered Environmental Health Specialist experienced in on-site sewage dispersal systems. All profile holes used for the system design shall be subject to field review by Departmental staff.

G. Augured profile holes are an acceptable alternative only (1) where use of a backhoe is impractical because of access, (2) when necessary to verify conditions expected on the basis of prior soils investigations, or (3) when done with geologic investigations (the extracted soils shall be arranged for evaluation so that corresponding depths can be determined). Where this method is employed, three profile holes in the primary area and three in the expansion area are required, the same as percolation test hole requirements).

H. The classification of soils into zones as shown in the USDA Soils Classification Triangle will be the primary reference on acceptability of soils for OWTS. (see Figure 7.4)

I. The following factors are to be observed and reported from ground surface to a depth corresponding to the groundwater determination and soil percolation test requirements:

1. Thickness and coloring of soil layers and apparent United States Department of Agriculture (USDA) classification.
2. Depth to and type of bedrock, hardpan, or impermeable soil layer.
3. Depth to observed ground water, saturated soil layers and areas of water infiltration.
4. Depth to soil mottling.
5. Other prominent soil features such as structure, stoniness, roots and pores, dampness, soil boundaries, etc.

![Soil Percolation Suitability Chart for OWTS](image)

**Figure 7.4 Soil Percolation Suitability Chart for OWTS**

**Instructions:**

1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjust for coarse fragments by moving the plotted point in the 100 percent sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjust for compactness of soil by moving the plotted point in the 100 percent clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc.

**Note:** For soils falling in sand, loamy sand, or sandy loam classification bulk density analysis will generally not affect suitability, and analysis is not necessary.
7.5 Groundwater Conditions

A. In general, lands with slopes of 0 to 5% in a basin area require site inspection by the district Environmental Health Specialist and “wet-weather” ground water table determinations (generally done between January 1 and March 1, after having received 50% of seasonal rainfall for each defined geographic area and within 10 days of receipt of 0.8 inch or more of rainfall within a 48 hour period (as reported by the officially recognized reporting stations as published in the Press Democrat). Groundwater determinations on lands greater than 5% slope may be required if high seasonal groundwater is suspected.

B. For purposes of this requirement, 50% of the average rainfall, as shown on Map 7.5, and defined in Table 7.5.

Table 7.5
Wet Weather Percolation/Groundwater Determination Tests

<table>
<thead>
<tr>
<th>AREA</th>
<th>RAINFALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petaluma (Area A)</td>
<td>12.5 inches</td>
</tr>
<tr>
<td>Sonoma (Area B)</td>
<td>15 inches</td>
</tr>
<tr>
<td>Santa Rosa (Area C)</td>
<td>15 inches</td>
</tr>
<tr>
<td>Sebastopol (Area D)</td>
<td>17.5 inches</td>
</tr>
<tr>
<td>Guerneville (Area E)</td>
<td>25 inches</td>
</tr>
<tr>
<td>Healdsburg (Area F)</td>
<td>20 inches</td>
</tr>
<tr>
<td>Cloverdale (Area G)</td>
<td>20 inches</td>
</tr>
</tbody>
</table>
C. Extensions beyond the time limits of the above criteria may be made by the Director of PRMD based on an evaluation of rainfall and groundwater monitoring and within the parameters of this section.

1. Due to drought conditions, for a limited period of time as specified by the PRMD Director, PRMD will accept soil mottling as an alternative procedure for establishing groundwater levels to determine the suitability of a site for a Non-standard Sewage Dispersal System. The intent of this policy is to offer an alternate procedure for property owners whose project would otherwise be delayed by the non-occurrence of a typical wet weather groundwater testing period.

   a. This Groundwater Determination Alternative cannot be used for proving the suitability of a site for a standard leach field system. A proper Groundwater Determination must be done to qualify a site for a standard leach field system.
   
   b. This Groundwater Determination Alternative cannot be used for subdivisions or lot-line adjustments.
   
   c. This Groundwater Determination Alternative cannot be used for properties with failed or canceled groundwater determinations on file.

2. This Groundwater Determination Alternative is not a process or procedure that will replace the measurement of actual groundwater levels under a normal-rainfall pattern.
a. Applicability of this alternative procedure will be on a case by case basis, and the procedure must be performed by a Qualified Consultant.

3. When extensions beyond the time limits are approved (i.e. opening prior to January 1 or closing after March 1) the highest extent of soil mottling observed in the soil profile investigation may be accepted at the discretion of Engineering Operations Manager of PRMD. However, where a conflict in the above methods exists, the direct observations shall govern. In areas where the soils lack the necessary iron compounds to exhibit mottling, direct observation during wet weather conditions shall be required.

4. A soil profile evaluation of sufficient means to determine the observable depth of soil mottling is required for this procedure.

   a. A new soil profile evaluation may not be required if soil profile logs, recorded by both a qualified consultant and PRMD staff for a Pre-Perc site evaluation within the past three years, provide sufficient detailed description of soil mottling.

5. The Consultant and County staff must agree on the depth to observable mottling. If the consultant and County staff can’t agree on the depth of observable soil mottling, then an actual Wet Weather Groundwater Inspection is required during a future wet weather groundwater testing period.

6. The field procedure will be similar to a Pre-Perc, in that the consultant will schedule a time to meet onsite with county staff, and coordinate the excavation and backfilling of soil profile pits.

7. The Consultant shall pay a Wet Weather Groundwater Inspection fee accompanied by a Request for Service application.

   a. If a Pre-Perc has not yet been completed for the subject test area, the site meeting for the purpose of this policy may also be used to collect data for a Pre-Perc site evaluation. For such combined efforts, the Consultant shall schedule and pay fees accompanied by a Request for Service application for both a Wet Weather Groundwater Inspection and Pre-Perc site evaluation.

8. Lands having slopes of 0 to 5% with seasonal water tables less than five feet from the ground surface are not suitable for standard leach fields, unless a variance is approved, but may be acceptable for installation of a non-standard OWTS (see Sections 12 and 13).

9. Lands having slopes of more than 5% and not more than 30% will frequently require interceptor drains to intercept and divert surface and sub-surface flows of storm water away from the leach field. Demonstration that surface and sub-surface facilities function as designed may be a requirement (See Section 8.6 and Figure 8.6).
7.6 Groundwater Determination Tests

A. When wet-weather groundwater determinations are required, backhoe excavated profile holes shall remain open a minimum of 24 hours, adequately supervised or barricaded until observed by the staff Environmental Health Specialist.

B. An alternative to leaving the holes open for 24 hours, is to insert a perforated pipe in the hole and place native backfill around the pipe (the backfill may not be compacted).

C. Another acceptable alternative is to hand dig or bore a hole to at least 36 inches below the proposed percolation test depth, insert a perforated pipe, and fill the annular space with gravel covered with two feet of native soil. This hole may then be used to monitor groundwater levels 24 or more hours later. Note Additional holes at lesser depths to augment the data or prove multiple water table depths are encouraged, as is recordation of water levels throughout the wet-weather period.

D. The minimum depth to the anticipated highest level of groundwater that occurs over an extended period of time below the bottom of the leaching trench, shall be determined according to soil texture and percolation rate. Where groundwater is determined to be non-usable, e.g. cannot reasonably be expected to be used for withdrawal and beneficial use due to quantity and/or quality, a minimum depth to groundwater of three feet below the leaching trench bottom may be permitted without need for a variance, if soils contain greater than 15% silt and clay as demonstrated by hydrometer analysis, or soils have a percolation rate slower than 5 mpi. This depth may be waived to no less than two feet if variance is justified or for an approved Non-Standard System.

7.7 Percolation Test Suitability

A. Site suitability for effluent percolation shall be determined by either percolation tests or soil analysis.

B. Private sewage dispersal sites require a minimum of six or more holes spaced uniformly throughout the area chosen for the proposed leaching field and leaching field expansion area.

C. The location of test holes must take into consideration the minimum distances which will govern construction of an OWTS.

D. Additional requirements, determined on an individual basis, may be required for specially designed or non-standard on-site sewage dispersal systems when permitted.
7.8 Percolation Test Hole Construction

A. Percolation test hole construction requirements are as follows

1. Dig or bore holes four, six or eight inches in diameter, to the vertical depth of the proposed trench and at least 12 inches below any proposed effluent pipe (refer to Tables 7.8a and 7.8b and Figures 7.8a and b).

2. After holes are dug, remove all loose material possible after carefully scraping the bottom and sides to remove any smeared soil surfaces. Add clean pea-gravel (maximum of 1 inch) to stabilize the hole, insert a perforated pipe (3 or 4 inch diameter) and place pea-gravel around exterior of pipe at least 12 inches, or up to ground surface. At the bottom of any backhoe excavations used, a secondary 6 or 8 inch diameter hole is to be bored to the depth of the proposed trench in undisturbed soil, providing that the depth shall not be less than 12". Do not back fill soil around pipe in backhoe holes. Measure and record the length of the pipe on the report form.

Table 7.8a

Percolation Test Hole Depth Requirements (Standard OWTS)

<table>
<thead>
<tr>
<th>Standard OWTS Slope at Hole</th>
<th>Standard OWTS Depth of Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12.5%</td>
<td>30&quot;</td>
</tr>
<tr>
<td>12.5%-30%</td>
<td>36&quot;</td>
</tr>
<tr>
<td>Filled Land (0-20%)</td>
<td>24&quot;</td>
</tr>
<tr>
<td>Shallow Sloping (12.5-30%)</td>
<td>36&quot;</td>
</tr>
</tbody>
</table>

Table 7.8b

Percolation Test Hole Depth Requirements (Non-Standard OWTS)

<table>
<thead>
<tr>
<th>Non-Standard OWTS Slope at Hole</th>
<th>Non-Standard OWTS Depth of Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mound (0-20%)</td>
<td>24&quot; (Minimum)</td>
</tr>
<tr>
<td>STPD (0-20%)</td>
<td>24&quot; (Minimum)</td>
</tr>
<tr>
<td>STPD (20-25%)</td>
<td>30&quot; (Minimum)</td>
</tr>
<tr>
<td>STPD (25-30%)</td>
<td>36&quot; (Minimum)</td>
</tr>
<tr>
<td>STPD (up to 30%)</td>
<td>60” (Maximum)</td>
</tr>
<tr>
<td>At-Grade</td>
<td>12, 24, and 36”</td>
</tr>
<tr>
<td>Drip Dispersal</td>
<td>10-14” and 24” below pipe depth</td>
</tr>
<tr>
<td>Shallow In Ground</td>
<td>10-14” and 24” below pipe depth</td>
</tr>
<tr>
<td>Gravel-less Pressurized Dispersal Channel (GPDC)</td>
<td>10-14” and 24” below pipe depth</td>
</tr>
</tbody>
</table>
Figure 7.8a Percolation Test Hole Requirements

Example A

**TYPICAL PERCOLATION TEST HOLE ON 12% SLOPE**

Materials needed to conduct a percolation test:
1. 3 or 4 inch diameter perforated pipe
2. Fine gravel (pea)
3. Metal tape measure
4. 6" or 8" soil auger
5. Water supply

Measurements:
1. Record length of pipe and depth of hole
2. Record pressure remaining to the nearest 1/8 inch
3. Record measurements from Point 'A' to Point 'B'
   (from top of pipe to top of water)
4. Adjust water level to 12 inches above gravel at bottom of hole

**NOTE:** The depth of the percolation hole will vary according to slopes on site, and whether the system proposed is a standard, innovative or alternative system.

Layer of gravel to stabilize bottom (no more than 1")

Example B

**TYPICAL PERCOLATION TEST HOLE ON 12% SLOPE**

Materials needed to conduct a percolation test:
1. 3 or 4 inch diameter perforated pipe
2. Fine gravel (pea)
3. Metal tape measure
4. 6" or 8" soil auger
5. Water supply

Measurements:
1. Record length of pipe and depth of hole
2. Record pressure remaining to the nearest 1/8 inch
3. Record measurements from Point 'A' to Point 'B'
   (from top of pipe to top of water)
4. Adjust water level to 12 inches above gravel at bottom of hole

**NOTE:** The depth of the percolation hole will vary according to slopes on site, and whether the system proposed is a standard, innovative or alternative system.

Layer of gravel to stabilize bottom (no more than 1")
Figure 7.8b Percolation Test Hole

Example: Percolation Test Hole in Backhoe Excavation for Standard 3/4" Test Hole

- Point 'A': 12" water start
- No more than 1" of gravel in bottom of hole
- Hole must extend approximately 12" into undisturbed soil
- Pea gravel

Example:

- Not allowed
- Perc hole: less than 5 ft

Ground Level

Pit dug for profile
7.9 Percolation Test Procedures

A. Presoak on the day prior to conducting the tests, fill the holes completely with clear water to which no substances have been added and refill at least four (4) times. A preferred procedure is a continuous 12-hour presoaking employing a reservoir and continuous head device. Presoaking for wet-weather tests is not necessary if the tests are performed during the 10 day period in which wet-weather groundwater determinations are allowed.

B. Percolation Rate Measurements Percolation-rate measurements shall be made on the day following the presoaking of test holes.

1. When water remains from presoaking, record the inches of water remaining on the report form and adjust the water level to 12 inches over the gravel base. Measurements are then taken from a fixed point at the top of the pipe to the top of the water and like measurements taken each hour for six hours. Record measurements accurately, vertically, and to the nearest 1/8 inch. An excess of presoak remaining is indicative of a lack of permeable soil at trench bottom.

2. When no water remains from presoaking, gently add clear water to the hole to a depth of 12 inches over the gravel base. Measure the drop in the water level from a fixed point at the top of the pipe to the top of the water each hour for six hours. Additional water may be added to 12 inches above the gravel when the hole is empty, or after any reading that indicates the water is less than 2 inches above the gravel. Record the new water elevation and continue measurements for duration of initial six-hour test. Record measurements to the nearest 1/8 inch.

3. When hole is dry before the first 60 minutes upon start of test measurements, add clear water to 12 inches over the gravel base and take measurements every ten minutes for two hours. The 12 inches of water is to be replaced at any time the hole is empty or the water depth is less than 2 inches.

7.10 Percolation Rate Interpretation

A. An average stabilized percolation rate of at least one inch per hour is required for the installation of a standard OWTS. Stabilized rates slower than one inch per hour or less than one minute per inch may be considered for inclusion within the Experimental or Alternative Non-Standard OWTS Program (Sections 12 and 13). Refer to Tables 7.2a. and 7.10.

B. The drop in the water level that occurs between the fifth and sixth measurements on six-hour tests is generally considered to be the stabilized percolation rate. The drop in water level that occurs between the eleventh and twelfth measurements is generally considered to be the stabilized rate for the two-hour test. The readings during prior periods provide information for modification of the interpretation of the average stabilized percolation rate. Prior readings will be evaluated where refilling of test holes has occurred in the last two hours of the test or when rates show significant inconsistency during the course of the tests.

C. Average percolation rates less than 5 minutes per inch will require that a soil texture analysis (hydrometer method) be performed to determine the necessary clearance from proposed
trench bottom to elevated seasonal water table, unless well logs demonstrate the distance to water table to be 40 feet or greater. If soil texture analysis is performed, required clearance to water table shall be as specified in Section 7.5.

D. An average Percolation rate less than one minute per inch (<1 mpi) is not suitable for the installation of an OWTS.

### Table 7.10
Percolation Rate Conversion Chart

<table>
<thead>
<tr>
<th>Inches per Hour</th>
<th>Rate Min per Inch</th>
<th>Inches per Hour</th>
<th>Rate Min per Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>480</td>
<td>2 3/4</td>
<td>22</td>
</tr>
<tr>
<td>1/4</td>
<td>240</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>3/8</td>
<td>160</td>
<td>3 1/4</td>
<td>18</td>
</tr>
<tr>
<td>1/2</td>
<td>120</td>
<td>3 1/2</td>
<td>17</td>
</tr>
<tr>
<td>5/8</td>
<td>96</td>
<td>3 3/4</td>
<td>16</td>
</tr>
<tr>
<td>3/4</td>
<td>80</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>7/8</td>
<td>69</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>1</td>
<td>60</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>1 1/8</td>
<td>53</td>
<td>7</td>
<td>9</td>
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#### 7.11 Wet Weather Percolation Tests

A. If a soil is determined to be within Zones 3 and 4 of the soils suitability chart, “wet weather” percolation testing is automatically required, unless Plasticity Index is less than 20 (ASTM D 4318-84). (See Figure 7.4 soil suitability chart).

B. Wet-Weather soils percolation tests are percolation tests conducted (generally) between January 1 and March 1 after having received 50% of actual seasonal rainfall for each defined geographic area. See Section 6.3, Table 7.5 and, Map 7.5.

C. Extensions beyond the time limits of the above criteria may be made by the Engineering Program Manager of PRMD based on an evaluation of rainfall and groundwater monitoring and within the parameters of this section. Extensions beyond April 30 are not allowed.
D. Presoaking for wet-weather tests is not necessary if the tests are performed during the 10 day period in which wet-weather groundwater determinations are allowed.

**7.12 Percolation Test Submittal of Results**

A. Percolation test information shall be promptly submitted (within 90 days) to the PRMD, Well and Septic Section on the County form provided for all tests and preliminary tests conducted, including failing holes and exploratory holes which were not tested.

B. All percolation test records submitted for approval of a site must be complete and shall include a written evaluation attesting to the validity of all tests by a Registered Civil Engineer, Registered Geologist, Soil Scientist or Registered Environmental Health Specialist experienced in on-site sewage dispersal systems. Records and evaluations submitted are to include at a minimum

1. Data on all excavations, including failing holes and exploration holes within a 100 foot radius of the proposed septic area which were not tested
2. Size of land area available for primary dispersal system and required expansion area, including a scaled plot plan showing the location of test holes dimensioned to property lines and delineating the area for the fields as calculated from the established percolation rate.
3. Accurate ground slope in the primary and expansion dispersal field, and areas within 50 feet.
4. Location of cut banks, natural bluffs and sharp changes in slope within 50 feet of the primary and expansion field.
5. Location of wells, springs, intercept drains, streams and other bodies of water on the property and within 150 feet of primary and expansion areas.
6. Location of existing houses, structures, rock outcrops and large trees in the area of the test.
7. Depth to groundwater when required, per Section 7.5
8. Special area standards.
9. The person verifying the validity of the tests must describe the soils encountered in the profile holes as outlined in Section 7.4, as well as attest to the fact that required presoak was performed, that the test was set up in accordance with County standards, that he/she personally observed the site and a portion of the tests, and that it is a true and accurate indication of the suitability of the site for on-site sewage dispersal as measured by the standards of Sonoma County Permit and Resource Management Department.

**Section 8 Criteria for OWTS Components**

**8.1 Septic Tank Requirements**

A. These requirements shall apply to all septic tanks in new OWTS and replacement systems.

1. Septic tanks shall be International Association of Plumbing and Mechanical Officials (IAPMO) approved. Septic tanks shall be sealed with an approved sealant so it is watertight. Wood septic tanks and metal septic tanks are prohibited.
2. Septic tanks shall have at least two compartments separated by a baffle or equivalent arrangement. The inlet compartment shall have a capacity of not less than 2/3 the total volume.
3. An inlet tee and outlet tee is required.

4. Each compartment of the septic tank shall have access provided by a manhole having not less than 24 inches in minimum dimensions with a close fitting manhole cover equipped with a durable handle to facilitate removal.

5. A clean-out to finished grade shall be provided between the structure and the septic tank.

6. Each compartment shall be provided with a riser extended from each manhole cover to the surface of the ground so as to facilitate inspection and maintenance of the septic tank. The riser shall be of equal size or larger than the manhole cover and shall be constructed of durable material. All joints shall be properly sealed with a sealant and/or an interlocking mechanism approved by PRMD.

7. A corrosion-resistant, NSF rated effluent filter approved by PRMD, capable of screening solids in excess of 3/16 of an inch in diameter, shall be provided in the outlet tee.

8. All connections from building to septic tank must conform to construction standards per the approved County Code requirements.

### 8.2 Septic Tank Sizing

A. The minimum liquid capacity of any septic tank installed shall be 750 gallons. Septic tanks to serve single family dwellings shall be sized on the number of bedrooms in the dwelling. The septic tank size for commercial OWTS shall be based on the peak daily sewage flow.

B. Minimum required septic tank sizing is shown in Table 8.2.

#### Table 8.2

<table>
<thead>
<tr>
<th>Septic Tank Capacity</th>
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<tr>
<td>For residential uses, the size of septic tank is determined by the number of bedrooms as shown:</td>
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<tr>
<td>1 - 2 bedrooms</td>
</tr>
<tr>
<td>3 bedrooms</td>
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<tr>
<td>4 bedrooms</td>
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<tr>
<td>5 - 6 bedrooms</td>
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<tr>
<td>additional bedrooms</td>
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</table>

For commercial uses, the minimum size of the septic tank must be based on the formula: 

\[ V \text{ (net volume in gallons)} = 1,125 + 0.75Q \text{ (daily wastewater flow in gallons)} \]

### 8.3 Sump & Pump System

A. A pump system can be a supplement to an OWTS. A pump in a standard system is utilized to enable the installation of a dispersal field up-slope of the structure to be served. The effluent at the higher elevation is distributed to the dispersal field by gravity flow.

B. A pump system is a major feature in an alternative OWTS that allows intermittent balanced dosing or pressurizing of effluent in the dispersal system. Any sump and pump must be designed, inspected and hydraulically tested for proper operation by the designer and PRMD staff prior to final approval of the installation.
8.4 Sump & Pump Requirements

A. Sewage effluent sump and pump general requirements area as follows

1. Specifications for the sump and pump, including the pump performance curve, must be submitted with the design for the OWTS.
2. Design information shall include the following
   a. Relative elevations of the pump and dispersal field pipe;
   b. Total dynamic head loss through the effluent piping and valves;
   c. Pump run times;
   d. Design flow rate (gpm).
3. All sump pump systems and distribution systems must be inspected and hydraulically tested for proper operation by the designer and PRMD staff prior to final approval of the installation and occupancy of the structure.

B. Required features of the sump are as follows

1. The minimum working capacity of all sumps is 300 gallons, including
   a. The design dose volume
   b. A minimum 200 gallon additional storage capacity between the high water alarm and inlet
   c. The minimum working capacity of sumps for non-standard OWTS is 500 gallons or three (3) times the designed dose, whichever is greater.
   d. Alternative configurations may be approved for systems utilizing pretreatment and repairs if justified by the designer.
2. Concrete tanks shall be a monolithic casting or joints sealed with appropriate sealants.
   a. Concrete tanks shall be made of sulfate-resisting cement, Specification C 150, Type II or highly sulfate-resisting cement, Specification C 150, Type V or coated with an asphalt emulsion or equivalent on the inside.
   b. The coated interior shall be allowed to dry for at least 24 hours.
   c. Asphalt emulsion or tar shall not be used as joint sealants.
3. Sump tanks shall be constructed of solid durable materials, which are not subject to excessive corrosion and degradation in the presence of domestic sewage and shall be watertight.
   a. They shall meet the IAPMO construction standards for septic tanks of the said material (glass-fiber-reinforced polyester, polyethylene, synthetic fiber reinforced).
   b. Wood and/or metal tanks are not allowed.
4. All sumps shall have a riser that extends to at least 2 inches above the finished grade.
a. Risers shall be sealed watertight to the sump chamber with materials suited for the specific application.
b. Wood risers are not allowed.
c. Traffic rated lids required for septic tanks and sumps located in traffic areas.

5. All pipes and/or electrical conduits entering the sump tank or riser shall be sealed to make the passage gas and water tight.
   a. If the pipes and/or electrical conduits enter a synthetic tank or plastic riser, rubber grommets shall be used
   b. Non-shrink grouts should be used with concrete tanks or risers.

6. Sumps on downhill runs shall be placed within 30 feet of the leach field, unless greater distances are allowed. When practical, sumps shall be located at a lower elevation than the leach field.
   a. The sump tank location must be accessible for a septic tank pumper to pump the tank.

7. A pre-screening device or filter capable of screening solids in minimum 3/16 inches size shall be installed in the septic tank or sump chamber to assist in preventing suspended solids from reaching the pump.
8. Wastewater shall exit the sump only through pump and pressure lines. Gravity overflows are prohibited.

C. Required features of the pump are as follows

1. Float controls for the pump and audio/visual alarm shall be mounted to a Schedule 40 PVC pole, mounted inside the pump chamber, that can be removed for maintenance. See Figure 8.4a.
2. Control floats shall be attached to the PVC pole by plastic tie straps or plastic float collars.
   a. Stainless steel straps will not be accepted.
3. The pump shall be mounted a minimum of 4 inches above the bottom of the sump chamber.
   a. If applicable, non-corrosive materials shall be used to support the pump.
4. For the situations where a pump must be installed in the second chamber of the septic tank, the pump shall be placed in a screened pump vault within the second chamber.
   a. Microdosing shall be required to minimize swings in the liquid level.
D. Required electrical features are as follows

1. All materials, connections, and specifications shall meet the California Electric Code.
   a. In all cases in which a sump with a pump is used for an OWTS, the contractor/owner shall obtain an electrical permit from PRMD or City Building Department having jurisdiction.
   b. The Building Official shall be responsible for inspection and approval of all electrical code requirements.
   c. Disconnecting means (control panel or disconnecting switch) shall be located in sight from the pump location per the County adopted electrical code.

2. The alarm shall be equipped with
   a. A loud (87 decibels at a 10 foot minimum horizontal distance from the alarm location) audio alarm operated by a float switch(s) to indicate an “alarm” situation.
b. A minimum sized 7/8 inch diameter red light shall be mounted on the face of the panel, which shall glow as long as the “alarm” condition exists.

c. A momentary “alarm test/alarm silence” switch to test the alarm light and horn to simulate an “alarm” condition and to silence the audio alarm horn.

3. An approved listed model or type of float switch shall be used to activate each pump. The alarm/control panel shall be equipped with a motor contactor for the pump and a pump hand/off/automatic switch to manually run the pump bypassing the control panel automatic mode and to test the alarm.

4. Power supply to each circuit breaker in the control panel shall be from a separate dedicated circuit with circuit protection, of equivalent or higher amperage rating, at the power supply panel.

a. The alarm/control panel shall be equipped internally with separate circuit protection for the control and pump circuitry.

   i. Multiplex (more than one pump) systems shall have separate power supply circuits.
   ii. Separate circuits are required for controls and each pump.
   iii. Joint circuits may be acceptable for existing sump/pump systems that were installed prior to this requirement if fused pursuant to the current Electrical Code.

b. Pump protection shall be provided by a thermal magnetic circuit breaker for overload protection.

   i. If the pump is single-phase, the motor windings shall have internal thermal overload protection.
   ii. If the pump is three-phase, the circuit protection in the alarm/control box shall be equipped with an adjustable thermal overload protection.

3. Below grade electrical splices shall be placed in a Sonoma County approved pull box installation or a Sonoma County approved external splice box with waterproof splice connectors.

   i. Traffic-rated pull boxes shall be used in traffic and adjacent areas. See Figure 8.4b.
Figure 8.4b Sump and Pump Requirements
4. Electrical non-metallic splice boxes may be placed within the sump chamber for existing sump/pump systems that were installed prior to this requirement. They shall be gas-tight boxes with waterproof splice connectors.

5. The pump power lead and the float switch control wires may run in a common conduit. High voltage and low voltage conductors shall be run in separate conduits.
   
   i. All cords going into the sump shall be individually sealed with non-metallic gas tight fittings in either the riser, junction box or alarm/control panel as appropriate.
   
   ii. Metallic gas tight fittings are not allowed.
   
   iii. All exposed PVC conduit shall be Schedule 80.

5. The control panel and its contents shall be UL listed.

   a. The control panel shall be placed in an easily accessible location.
   
   b. A non-resettable dose counter shall be installed in control boxes utilized for non-standard OWTS.
   
   c. If a dose counter is not provided, a non-resettable flow meter shall be provided on the outgoing line to the dispersal field. Additionally, systems with flush modes shall be equipped with a flow meter on the return line. The flow meter shall read in gallons per minute and total gallons.
   
   d. The control panel shall be equipped so settings can be adjusted manually on-site.
   
   e. Control boxes that must be opened to view the dose counter shall be equipped with a clear plastic or Pyrex safety shield inside the control box.
   
   f. The control box shall be labeled “Caution-Electrical Hazard.”
   
   g. The dose settings (time or gallons), calculated dose volume and float settings shall be posted on the inside of the panel.

6. All exterior mounted alarm and controller enclosure shall be NEMA Type 4. If the alarm/controller is mounted more than 75 feet from any residence or commercial structure served by the system, a separate audible/visible alarm shall be provided at the primary structure connected to the OWTS.

   a. The enclosure for the remote and audio/visual alarm shall be NEMA Type 1 if mounted indoors.

E. Required features of sewage piping are as follows

1. The effluent line entering the sump shall be minimum three (3) inch diameter ABS Sch 40 or PVC Sch 40, and shall be sealed with a coupling integrally cast into the tank, a properly fit neoprene grommet or with non-shrink grout as appropriate.

   a. The effluent line shall be turned down with a sanitary tee fitting and drop that extend to within four (4) inches of the tank floor.

2. Minimum 1 inch PVC Schedule 40 from pump to dispersal field is required with

   a. A 1/8 inch diameter anti-siphon and air vent hole located between the pump and check valve angled down and away from the floats,
   
   b. PVC check valve,
c. PVC gate or ball valve and union(s).

3. Brass type fittings, valves, and piping are prohibited in sump chambers.
4. High points in the transmission line after the sump may require an “air relief valve” depending on the design situation.

8.5 Alternating Leach Fields

A. Alternating leach fields are required for OWTS of greater than 500 lineal feet of leach line.

B. An approved diversion valve or dosing tank with pump(s), are required for alternating leach fields.

C. Each primary field shall be equal to 75% of the primary leach field lineal requirement.

D. For installations of from 500 to 1000 lineal feet of leach line, the dosing requirement may be satisfied by any one of the following approaches.

1. Dosing tank with a pump which discharges the tank once every 3 or 4 hours.
2. Alternating leach fields with an approved diversion valve.
3. Two (2) or more septic tank / leach field systems, with neither system exceeding 500 lineal feet of leach line.

E. For installations of greater than 1000 lineal feet of leach line, the dosing requirement may be satisfied by any of the following approaches

1. Dosing tank with two (2) pumps dosing alternately and each serving one half (½) of the leach field.
2. Three (3) or more septic tank/leach field systems, with no system exceeding 500 lineal feet.

8.6 Intercept Drains

A. The design of the intercept drain is dependent on the size of the contributing drainage area, the amount of water that must be removed, the soil’s hydraulic properties, and the available slope of the site. The use of intercept drains to lower the level of perched groundwater in the immediate dispersal field area shall be acceptable only under the following conditions:

1. The design plan shall signed and stamped by a Qualified Consultant.
2. Natural ground slope is greater than five (5) percent;
3. Site investigations indicate groundwater to be perched on bedrock, hardpan, or an impermeable soil layer;
4. The intercept drain extends from ground surface into bedrock, hardpan, or impermeable soil layer.
5. A trench width of a minimum of one (1) foot.
6. The upslope side of the trench shall be lined with a geotextile filter fabric.
7. The down slope side of the trench shall be lined with 10 - 12mm polyethylene sheeting.
8. The drain rock shall be 3/4 inch to 2 inch diameter in size and washed, contain less than one percent fines (sand, very fine silt, and clay) and extend from trench bottom to within 6 to 12 inches of grade and backfilled to grade with native soil.

9. The collection pipe shall consist of 4 inch diameter perforated drain pipe, oriented with holes down and installed on top of the drain rock, approximately 2 to 4 inches above trench bottom.

10. The outlet pipe shall consist of a minimum 4 inch solid (non-perforated) drain pipe at the point of discharge with placement of rip rap and be maintained free and clear.

11. The trench and pipe shall be sloped for gravity flow at a minimum 1% gradient throughout the trench and extending to the outlet point.

12. Cleanouts to grade are required
   a. At the upslope end of the drain;
   b. At bends of 45 degrees or greater;
   c. At least every 100 feet along the length of the drain.

B. The perforated section of an intercept drain shall not be located less than 15 feet upgradient nor 25 feet laterally or 25 feet downgradient of a septic tank. The perforated section of an intercept drain shall not be located less than 15 feet upgradient nor 50 feet laterally or 50 feet downgradient of a dispersal area or non-standard system.

C. The non-perforated or solid section of a drain pipe shall not be located less than 5 feet upgradient nor 10 feet laterally or 10 feet downgradient of a septic tank. The non-perforated section or solid section of drain pipe shall not be located less than 10 feet upgradient nor 15 feet laterally or 15 feet downgradient of a dispersal area or non-standard system.

D. Where all of the above conditions cannot be met, actual performance of the intercept drain shall be demonstrated prior to approval for an OWTS permit.

E. Interceptor drains are required and shall be installed according to Section 18A.b and c (West Petaluma Variance Prohibition Special Standards Area).
Figure 8.6 Interceptor Drain
8.7 Stream and Driveway Crossings

A. All pipe used within the watercourse setbacks or under a driveway must be PVC Schedule 40 or other approved material.

B. All effluent transmission pipes used for stream crossings must be pressure tested at the time of installation and prior to final inspection. Pressure testing shall be conducted in accordance with the most current version of the Sonoma County Water System Standards Including Standard Drawings, section 8, Inspection and Testing,

1. Buried pipe must have a minimum of four (4) feet of cover over the portion of the pipe under the center line of the stream.
   a. This may be reduced to one (1) foot if the portion of the pipe under the stream banks is encased (sleeved) in ABS Schedule 40, PVC, cast iron, or concrete pipe extending a minimum of 25 feet beyond the high water elevation mark on both sides of the stream.

2. Pipe must be encased (sleeved) with cast iron or well casing whenever it is exposed or above the stream.
   a. Pipe must be one foot above the 100 year flood elevation.
   b. Pipe must be either covered with fill over a culvert or hung by approved hangers every four (4) feet from an appropriate supporting structure as specified in the California Plumbing Code.

C. All effluent transmission pipes used for driveway crossings must have a minimum of one (1) foot of native cover over the pipe and encased (sleeved) with ABS Schedule 40, PVC, cast iron, or concrete pipe extending a minimum of five (5) feet beyond the driveway edges.

Section 9 Criteria for Standard OWTS

9.1 Standard OWTS

A. A standard OWTS consists of an approved septic tank and standard dispersal trenches. A standard OWTS may include a pump system to enable the installation of a dispersal field up-slope of the structure to be served.

B. Standard OWTS may be allowed in areas with a soil percolation rate of 60 minutes per inch (mpi) or less. Soil percolation rates of 61mpi to 120 mpi require installation of a non-standard OWTS.

C. The minimum soil depth below the leaching trench shall be three (3) feet for a Standard OWTS.
D. 200% reserve replacement area shall be provided for all residential standard OWTS. If the lot was created prior to October 1971, a 100% reserve replacement area is required.

E. Standard OWTS may not be installed on slopes exceeding 30%.

F. Sizing of standard OWTS shall be based on Table 7.2a Sewage Application/Soil Loading Rates (gal/sf/day) at 150 gal/bedroom. Lineal footage sizing requirement is based on the consideration of sidewall area only. Credit is not given for trench bottom area. Note: 20% reduction allowed with installation of low flow fixtures.

G. The required lineal feet of standard leach line is determined by the Design Flow Rate divided by the Soil Loading Rate (Table 7.2a) divided by the trench lineal area available (sidewall infiltration only, bottom area is not included). For example a 2 bedroom house at 150 gpd/bedroom = 250 gpd. A percolation rate of 30 mpi = 0.56 gal/sf/day. 12 inches of gravel below the pipe x 2 = 2sf per lf. Thus 250/0.56/2 = 223 lf required.

9.2 Standard Dispersal Trench

A. Dispersal trenches shall be installed on contour. Dispersal trenches shall be placed a minimum of eight (8) feet on center on slopes up to 30%.

B. The depth of the dispersal trenches, dependent on the slope, percolation depth, or type of standard OWTS is found in Table 7.8a.

C. The dispersal trenches shall be constructed in maximum lengths of 100 feet and at widths between 18 inches to 24 inches. The bottom of the dispersal trench shall be level to within a tolerance of three (3) inches in 100 feet.

D. Dispersal trenches shall contain double-washed rock filter material of 3/4 to 2 ½ inches in diameter, perforated sewage distribution pipe, geotextile filter fabric, and back-filled with a minimum of 12 inches of soil.

E. The PRMD may permit gravel-less trench construction. The design, manufacturing and materials shall be durable and approved by the PRMD (See Section 9.4).

F. A concrete or plastic distribution box shall precede each dispersal trench for the receipt and distribution of wastewater into the trenches. There shall be a minimum distance of four (4) feet between the distribution box and the dispersal trench.

G. Distribution boxes shall be placed for serial distribution of wastewater on sloping ground.

H. Distribution boxes shall be placed for equal distribution of wastewater on flat terrain.

I. The distribution box shall be placed in native soils at the appropriate depth. A minimum of twelve (12) inches of backfill shall be placed above the distribution box or extended to grade with a riser. The distribution box shall not be placed in over-excavated soils.
J. Metal detection markings, a 2 foot x ½ inch galvanized pipe or rebar shall be installed flush and vertical at each distribution box and in a vertical position against the trench wall at the end of the leach line, and also in the middle of lines that are longer than 50 feet. The pipe or rebar shall not be placed at a depth greater than 24 inches.

K. Construction and paving over leaching systems and replacement areas is prohibited.

L. Refer to Figure 9.2 Standard dispersal trench detail.

Figure 9.2 Standard Leachline Trench

Note: Depth of trench dependent on slope and/or depth of rock below pipe. 30” deep system with 12” of drain rock under the pipe requires 12” of native backfill. Allowable width of standard leachline trench 18 - 24”
9.3 General System Installation Requirements

A. OWTS shall be installed in accordance with the plans approved by the PRMD. The PRMD staff must approve any changes in the installation plan prior to installation.

B. OWTS shall be located so as to be accessible for maintenance and repairs. Septic tanks and sump tanks shall be located so as to allow vacuum pumping.

C. The building sewer and distribution piping shall be constructed with materials in conformance to building sewer standards identified in the Uniform Plumbing Code. The sewer and distribution piping shall have approved watertight fittings with clean-outs provided in accordance with the Uniform Plumbing Code. Piping shall be ABS or PVC Schedule 40 or better.

D. Dosing siphons are prohibited.

E. Leaching area side-walls should be left with rough surfaces prior to backfill.

F. Construction of OWTS shall be avoided during the rainy season. Dispersal trenches are to be back-filled as soon after final construction inspection as possible. Trenches that have remained uncovered during any substantial rain may require abandonment or entire retrenching.

9.4 Gravel-less Drain field Systems

A. Gravel-less drain field systems replace conventional rock and pipe standard OWTS drain fields.

B. Gravel-less chambers are typically made of recycled plastic and must be pre-approved by PRMD.

1. Chambers are usually installed in an 18 or 24 inch wide trench.
2. The chambers are interlocking arches that form a continuous drainage area with louvers to allow dispersal of the effluent into the soil.
3. Sizing of the OWTS dispersal field is based on the height of the louvers sidewall infiltration area only. No credit is given for the trench bottom area. For example, if the chambers have louvers to a height of 9.5 inches, an infiltrative area of 1.6 square feet per linear foot is available.

   a. Any other configuration must be reviewed on a case by case basis.

C. Cylindrical bundles typically consist of a geosynthetic aggregate held in place with a high density polyethylene netting, with or without a 4 inch polyethylene pipe, and must be pre-approved by PRMD.

1. Bundles are usually installed in an 18 or 24 inch wide trench.
2. The bundles, also referred to as cylinders, are typically 12 or 18 inches in diameter

3. Sizing of the OWTS dispersal field is based on the sidewall area beneath the invert, the number and the configuration of the bundles placed in the trench. No credit is given for the trench bottom area. For example, a bundle with a diameter of 12 inches containing the pipe, installed in a square configuration with 3 additional bundles with out pipe, installed in a 24” trench, provide an infiltrative area of 3.0 square feet per linear foot.

   a. Any other configuration must be reviewed on a case by case basis.

D. Where soil and site conditions allow, approved chamber and cylindrical bundle systems may be installed in lieu of conventional gravel trench at depths up to 60-inches, as measured from the base of the trench to ground surface.

E. Minimum 12 inches of soil cover is required over the cylindrical bundle(s) or chambers.

F. Trench spacing, prevention of soil infiltration from cover soil, and all other requirements are the same as for gravel trenches.

G. The chamber and cylindrical bundle systems are not to be installed in locations that would be subject to vehicular traffic, such as driveways or parking areas.

9.5 Filled Land Systems

A. Filled Land OWTS are systems where imported soil is imported and compacted to a minimum depth of 12 inches over native soil for the dispersal trench area of the system.

   1. The system must be designed by a qualified consultant.
   2. Filled Land proposals for subdivisions which have received tentative map approval based on the prior filled land septic system policy dated 01/01/09 shall not be deemed acceptable for processing of the septic requirements for the subdivision.
   3. All the test holes in the area proposed for the Filled Land system and the reserve replacement area and within a 20 foot radius of the proposed perimeter of the leach field shall be evaluated per standard system percolation test criteria. See Table 9.5 for allowable trench depth into native soil.
Table 9.5 Filled Land OWTS Trench and Fill Requirements

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<tr>
<th>Trench Depth Into Native (inches)</th>
<th>Gravel Depth Below Pipe (inches)</th>
<th>Fill Material Needed (inches)</th>
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</tbody>
</table>

4. A full description of the complete installation including quality, kind and grade of all materials, equipment, construction workmanship and methods of assembly and installation shall be provided.

5. Proof of soil below the bottom of the trench is the same as for standard systems and can be demonstrated by percolation testing, soil morphology, and texture analysis. At a minimum, 3 feet of continuous acceptable soil is required below the proposed trench bottom. A variance for an alternative system (i.e. incorporation of an approved pretreatment unit) may justify reduction of the setback to 2 feet below trench bottom.

6. Filled Land Systems are limited to areas not exceeding 25% slope.

7. All dispersal trenches shall be a minimum of 12 inches in depth into native soil.

8. Gravel depth above pipe is to be 2-3 inches.

9. Gravel depth below pipe is to be not less than 12 inches unless an administrative variance is approved. See Table 9.5 for permissible gravel depth below pipe.

10. Trench width of 18-24 inches

11. Increased trench depth and gravel depth is permissible with a subsequent reduction of fill soil. A minimum of 6 inches of fill for any trench depth is required. A minimum of 15 inches of soil is always required above the pipe. See Table 9.5 for fill material requirements.

12. Use of gravel-less drainfield systems, as described in Section 9.4, are permitted.

13. The absorptive quality of imported soil for the leach field cover shall be equal to or better than the native soil meeting percolation test requirements. Sand, gravel, rock or compost does not qualify as acceptable cover material for filled land systems.

14. Cover material for filled land systems shall be constructed in not more than 8 inch layers to approximately the same relative compaction as the upper soil horizon native to the site. Certified results of the soil density test may be required to be submitted to the Well and Septic Section by the Registered Civil Engineer or Environmental Health Specialist.
a. The fill is to be of uniform depth extending to a distance at least 15 feet from the center of any trench in all directions except the up slope distance may be reduced to 5 feet with additional fill to maintain a 5:1 taper for a total of 10 feet from the center of the up slope dispersal trench on slopes above 5%.
b. The down and side slope toes of the fill should be tapered at a 5:1 ratio beginning 15 feet from any leach field or proposed leach field expansion area to provide a total of 20 feet from the center of any trench.

15. Reserve replacement areas must be demonstrated as per other standard systems. A 100% reserve replacement area for pre October 1971 parcels and 200% for post October 1971 parcels is required. Fill material is not required to be placed on the reserve placement area prior to permitting of the replacement system.

16. Site specifications for fill shall indicate that vegetation is to be removed and surface prepared to permit good mixing of the native soil and fill material added.

a. Areas with closely-spaced trees in excess of 24 inches in diameter are generally not suitable for filled-land systems.
b. Roto-tilling to prepare the site for fill is prohibited. A single pass 6 inch rip of the surface soil to ensure a good mixing of the native soil and the fill material is required. c. Wheeled tractors are to be minimized in the dispersal area at this time to avoid soil compaction.

17. Specifications on Filled Land proposals require the fill to be completed before any leaching trenches are constructed.
18. Construction of any dispersal field should be avoided during the rainy season. Lines are to be back-filled as soon after final construction inspection as possible. Lines which have remained uncovered during any substantial rain may require abandonment or entire retrenching. The fill area shall be seeded or sodded with appropriate vegetation after construction of the dispersal field is complete. Appropriate erosion control measures shall also be in place.

9.6 Shallow Sloping OWTS

A. The determination of site suitability for a “shallow sloping OWTS”, a standard OWTS that may be installed where depth of permeable soil is inadequate to provide for 15 foot to breakout from the leach pipe to the surface of a slope in areas with slopes from 12.5 to 30%, may be considered provided the following conditions are met

1. The system must be designed by a qualified consultant.
2. If one or more soil profiles performed on the site at the depths required for 15 foot-to-breakout prove unsatisfactory and are supported by soils profiles, then additional tests to justify a “shallow sloping system” may be considered.
3. Eight (8) or more percolation test holes (in no instance less than 36” in depth) are required: 1) at least 6 in the primary/replacement area, 2) one hole 25 feet downslope and 3) one hole 50 feet downslope of the lowest leach line in the primary/replacement area to show the
permeable top soil is continuous (i.e. adequate distance and depth of soil exists to provide filtration and treatment of effluent).

4. Percolation rates of 1 to 60 mpi are required.
   a. Percolation rates of faster than 5 minutes/inch may require additional evidence that breakout of effluent to the surface or contamination of beneficial waters will not occur.

5. The percolation test report must evaluate slope stability. Proposed leach field areas which are identified on geologic maps of Sonoma County as unstable or questionable must be surveyed by a Registered Geologist. Any mitigations recommended by the geologist are to be incorporated into the system design.

6. Any proposed leach field area with outcroppings of bedrock or impermeable soil horizons is not acceptable for a “shallow sloping system”.

B. The design criteria for a “shallow sloping OWTS” includes the following

   1. Any “shallow sloping OWTS” proposed under these criteria shall be designed by a Qualified Consultant.
   2. Disperal fields are to be set back a minimum of 50' from any bank, natural or manmade, unless otherwise specified by Table 7.2b or where more stringent requirements may apply.
   3. Leach fields and reserve replacement areas shall be placed so as to utilize as much of the upper contours of the site as possible. Serial distribution is required unless an approved parallel distribution system is developed.
   4. Trenches must be at least 18" wide and a minimum of 36" deep. Construct dispersal trenches with 12" gravel under the pipe, 2" gravel over the pipe, and 18" of earth backfill. If there is more than 36" of soil as shown by percolation tests and more than 12" of gravel can be used, credit for use of additional trench sidewall may be granted. Non-residential designs will be based on PRMD, EPA, or other approved design criteria.
   5. Space trenches at least 10' on center (8' solid earth between trench walls).
   6. Amount of leaching trench required for each primary field will be determined from the number of bedrooms and approved percolation rate.
      a. Construct two primary leach fields divided by an approved diversion valve which can be alternated on at least a yearly basis.
      b. Each primary field shall be equal to 100% of the pre-determined lineal requirement.

7. All dispersal fields are to be provided with an intercept drain unless no significant watershed exists above the system.
   a. Exceptions must be justified by satisfactory wet-weather ground water determinations.
   b. Intercept drains shall be installed according Section 8.6.
   c. Drainage diversions shall not influence neighboring properties.
   d. All surface drainage shall be diverted away from the leach field area.
   e. All perforated portion of intercept drains must be a minimum of 25' from any property line unless a variance is justified.
C. The following additional requirements apply to “shallow sloping OWTS”

1. Construction of the dispersal field should be during the dry portion of the typical Sonoma County year. The rainy season should be avoided. Lines are to be back-filled as soon after final construction inspection as possible. Lines which have remained uncovered during any substantial rain may require abandonment or entire retrenching.
2. Benching is not permitted during construction of the dispersal field.
3. The area of the leach field should be stabilized by sodding or seeding with native grasses to control erosion.
4. No animals may be contained, housed, or pastured over the dispersal field. The soil in the dispersal field area shall not be disturbed by cultivation or tilling.
5. If any lot is to be created utilizing a “shallow sloping system” design, appropriate deed restrictions shall be recorded prior to validation of the land division.

9.7 Standard Shallow Trench Pressure Distribution (STPD) OWTS

A. If desired by the property owner, a STPD OWTS may be permitted as a Standard OWTS, rather than a Non-Standard OWTS, under the following conditions

1. The percolation rate is 60 mpi or less at proposed trench bottom and otherwise meets the Section 7 Site Evaluation and Investigation Requirements.
2. Gravel size of ¾” to 2 ¼ “is allowed.
3. Except for the percolation test rate of 60 mpi or faster and gravel size, the proposed OWTS otherwise meets all other Section 13.3 STPD site, design and construction criteria.
4. A STPD that meets the above referenced requirements shall not be subject to the Section 13 Non-Standard OWTS Operational Permit and Monitoring Reporting Requirements.

Section 10 Criteria for Water Reuse

10.1 Graywater

A. The construction, alteration, and repair of gray water systems are subject to the provisions of the 2013 California Plumbing Code (CPC), Chapter 16 Alternate Water Sources for Nonpotable Applications, Section 16.02.

1. A Clothes Washer System is subject to the requirements of the 2013 CPC Section 16.02.1.1.
   a. The repair, alteration, relocation, installation or construction of a clothes washer graywater system is exempt from a permit unless it is demonstrated that the system does not meet the requirements of the 2013 CPC Section 16.02.

2. A Simple System is subject to the requirements of the 2013 CPC, Section 16.02.1.2.
   a. An application for a permit, accompanied by fees as specified in the current fee resolution, is required for a Simple System.
3. A Complex System is subject to the requirements of the 2013 CPC Section 16.02.1.3.

   a. An application for a permit, accompanied by fees as specified in the current fee resolution, is required for a Complex System.

Section 11 Criteria for Commercial, Industrial, Institutional OWTS

11.1 Commercial, Industrial, Institutional OWTS

A. All commercial OWTS shall be designed by a Qualified Consultant.

B. A typical commercial OWTS would service businesses such as, but not limited to food facilities, schools, care homes, childcare facilities, dog kennels, veterinary offices, wineries and wine-tasting rooms. Refer to Table 11.1.

C. All commercial OWTS, including, pre-1971 created parcels shall provide 200% reserve replacement area. Dual dispersal fields consisting of a primary field and a secondary field (75% of design flow) with a diversion valve to alternate the field use are recommended but not required.

D. Commercial OWTS that exceed the 1,500 gpd flow criteria of this section are subject to Section 14 Operational Permit and Monitoring Requirements or Section 11.5 Package Treatment Plant Permit requirements.

E. For commercial uses, the minimum size of the septic tank must be based on the formula

   \[ V = 1,125 + 0.75Q \]

   (net volume in gallons) = (daily wastewater flow in gallons)

F. Pretreatment is required when high strength commercial wastewater is proposed.

G. Any OWTS that receives high strength wastewater from a commercial food service building requires a properly sized and functioning oil/grease interceptor.
<table>
<thead>
<tr>
<th>TYPE OF OCCUPANCY</th>
<th>GALLONS PER DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airports</td>
<td>5 per passenger</td>
</tr>
<tr>
<td>Campgrounds:</td>
<td></td>
</tr>
<tr>
<td>Campground with central comfort station</td>
<td>35 per person</td>
</tr>
<tr>
<td>Campground with flush toilet, no showers</td>
<td>25 per person</td>
</tr>
<tr>
<td>Day Camps (no meals)</td>
<td>15 per person</td>
</tr>
<tr>
<td>Luxury Camp, private bath</td>
<td>100 per person</td>
</tr>
<tr>
<td>Summer and seasonal</td>
<td>50 per person</td>
</tr>
<tr>
<td>Churches (sanctuary)</td>
<td>5 per seat</td>
</tr>
<tr>
<td>With kitchen wastes</td>
<td>7 per seat</td>
</tr>
<tr>
<td>Country Club</td>
<td>125 per person</td>
</tr>
<tr>
<td>Factories</td>
<td>35 per person per shift</td>
</tr>
<tr>
<td>Hospitals</td>
<td></td>
</tr>
<tr>
<td>Kitchen waste only</td>
<td>250 per bed space</td>
</tr>
<tr>
<td>Laundry waste only</td>
<td>25 per bed</td>
</tr>
<tr>
<td>Hotels/Motels with private bathroom</td>
<td>40 per bed</td>
</tr>
<tr>
<td>(no kitchen waste)</td>
<td></td>
</tr>
<tr>
<td>Hotels/Motels without private bathroom</td>
<td>60 per two person room</td>
</tr>
<tr>
<td>(no kitchen waste)</td>
<td></td>
</tr>
<tr>
<td>Hotel/Motel with private bath and kitchen</td>
<td>50 per two person room</td>
</tr>
<tr>
<td>Institutions other than hospitals</td>
<td>75 gallons per person</td>
</tr>
<tr>
<td>Movie Theaters</td>
<td></td>
</tr>
<tr>
<td>Restaurants:</td>
<td></td>
</tr>
<tr>
<td>Kitchen waste (multi-use utensils)</td>
<td>50 gallons per person</td>
</tr>
<tr>
<td>Kitchen waste (disposable utensils)</td>
<td></td>
</tr>
<tr>
<td>And add the following for type of facility present:</td>
<td></td>
</tr>
<tr>
<td>Conventional sit down</td>
<td>10 per person</td>
</tr>
<tr>
<td>Short Order</td>
<td>5 per person</td>
</tr>
<tr>
<td>Bar and Cocktail</td>
<td>3 per person</td>
</tr>
<tr>
<td>School (non-boarding)</td>
<td>5 per student</td>
</tr>
<tr>
<td>With gym and showers add</td>
<td>20 per student</td>
</tr>
<tr>
<td>With cafeteria using disposable utensils</td>
<td>3 per meal served</td>
</tr>
<tr>
<td>Self service laundries</td>
<td>50 gallons per wash</td>
</tr>
<tr>
<td>Service station</td>
<td>10 gallons per vehicle served</td>
</tr>
<tr>
<td>Retail stores</td>
<td>20 per employee</td>
</tr>
<tr>
<td>For public restrooms add</td>
<td>1 per 10 square feet</td>
</tr>
<tr>
<td>Swimming pools and bathhouses</td>
<td>10 per person</td>
</tr>
<tr>
<td>Tourist camps or mobile home parks with individual bath units</td>
<td>100 per person</td>
</tr>
<tr>
<td>Tourist camps or trailer parks with central bathhouse</td>
<td>75 per person</td>
</tr>
<tr>
<td>Work or construction camps (semi-permanent)</td>
<td>50 per person</td>
</tr>
<tr>
<td>Wine tasting facility (no meals served)</td>
<td>3 per person</td>
</tr>
<tr>
<td>Employee</td>
<td>15 per employee</td>
</tr>
</tbody>
</table>
11.2 Winery OWTS

A. The peak daily flows from wineries shall be determined by either the tons of grapes processed or cases of wine produced annually. The following shall be used in the determination of peak daily flows:

\[
\begin{align*}
1 \text{ case of wine} & = 2.4 \text{ gallons} \\
1 \text{ ton of grapes} & = 160 \text{ gallons of wine} \\
\text{Peak wastewater flow} & = 1.5 \text{ gallons for each gallon of wine}
\end{align*}
\]

Production
Length of crush season varies by winery production –see formulas below

The following formulas are used to calculate winery wastewater flows

**WINERY SIZE**

<table>
<thead>
<tr>
<th>WINERY SIZE</th>
<th>FORMULA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 20,000 gallons per year</td>
<td>Annual production (gal) x 1.5 30 day harvest period</td>
</tr>
<tr>
<td>20,000-50,000 gallons per year</td>
<td>Annual production (gal) x 1.5 45 day harvest period</td>
</tr>
<tr>
<td>50,000 gallons per year and above</td>
<td>Annual production (gal) x 1.5 60 day harvest period</td>
</tr>
</tbody>
</table>

B. Winery process wastewater and domestic sewage shall have separate tanks.

1. Domestic and process wastewater may share a common leachfield.

C. Mounds are prohibited for winery wastewater dispersal systems unless supplemental treatment is provided to reduce BOD to <300mg/L.

D. A minimum three (3) day hydraulic retention time for peak winery process wastewater flow is required.

E. Pretreatment must be provided to treat the winery process wastewater to domestic wastewater levels (<300 BOD and TSS) for discharge to an approved OWTS.

F. Coverage under waste discharge requirements or waiver therefore, from the appropriate Regional Water Board, shall be required prior to issuing a septic permit.

11.3 Special/Cultural Events

A. The intent of this standard is to provide sizing criteria for onsite dispersal systems that are commensurate with the number and size of special events approved under the facility’s permit. Generally, this standard requires larger dispersal systems as the number and size of permitted events increases.
B. For purposes of implementation of Special Events granted in Use Permits and the use of Portable Toilets. The following definitions apply:

1. “Event” means any special event authorized under a Use Permit or an “Occasional Cultural Event” as defined in the zoning ordinance and as interpreted by the Board of Zoning Adjustments. “Event” includes industry-wide events.
2. “Visitors per day” means the peak number of visitors estimated for the entire busiest single day of one event, and not the combined number of visitors of both days of a week-end event, and not just the maximum number of visitors at one time during the busiest day.
Table 11.3 Special Events and OWTS Sizing Criteria

<table>
<thead>
<tr>
<th>Number of special events approved per year.</th>
<th>Percent increase in the design and capacity of the facilities waste water treatment system due to special event waste water flows.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4</td>
<td>The additional special event waste water flow may be accommodated by portable toilets. No increase in the facility waste water system required.</td>
</tr>
<tr>
<td>5 to 10</td>
<td>The design and capacity of the facilities waste water treatment system must be increased by 25% of the fifth largest single special event flow.</td>
</tr>
<tr>
<td>11 to 25</td>
<td>The design and capacity of the facilities waste water treatment system must be increased by 50% of the fifth largest single special event flow.</td>
</tr>
<tr>
<td>26 or more</td>
<td>The design and capacity of the facilities waste water treatment system must be increased by 100% of the fifth largest single special event flow.</td>
</tr>
</tbody>
</table>

C. The wastewater system consultant shall justify the sizing of the OWTS for Special Events based upon the specific circumstances of the site and the proposed event

1. Special Events without food service shall size the on-site wastewater dispersal system as large as needed, but in no case at less than two and one half (2 and 1/2) gallons per visitor per day.
2. Special events with food service shall size the on-site wastewater dispersal system as large as needed, but in no case at less than five (5) gallons per visitor per day.

D. Sizing of the OWTS for Special Event wastewater flows shall comply with the following requirements when mitigation is provided by an adequate number of portable toilets as specified in PRMD Policy and Procedure 9-2-31 Sizing of Onsite Wastewater Dispersal Systems for Special Events Authorized by Use Permits and the Use of Portable Toilets (Appendix D) and Table 11.3. The Special Event Waste Water Flow is the additional sewage flow expected from the largest single special event that is in excess of the normal waste water flow from the facility.

11.4 Flow Equalization

A. Flow equalization is the process of controlling the rate of wastewater flow through an OWTS by providing surge capacity storage and timed-dosing of the incoming flow. Installed following the septic tank, it allows peak surges in wastewater flow (e.g., from a weekend event) to be temporarily stored and metered into the treatment system and/or dispersal field at a relatively even (“average”) rate over an extended number of days (e.g., during the subsequent week). This generally aids OWTS performance.
B. Where flow equalization is proposed to be incorporated in an OWTS the following apply:

1. The septic tank capacity shall be sized based on the peak daily flow for the facility;
2. The design flow used for sizing supplemental treatment unit(s) and/or the dispersal field may be based on the equalized ("average") flow rate rather than the peak daily flow rate for the facility;
3. Engineering calculations and specifications must be submitted substantiating the proposed design and operation of the flow equalization system; and
4. An operating permit (per Section 14) will be required.

C. Flow equalization may be used for non-residential and mixed use facilities that experience significant, regular and predictable fluctuations in wastewater flows. Examples of applicable facilities include, but are not limited to:

1. Churches
2. Schools
3. Special/Cultural event venues

11.5 Package Treatment Plants

A. Package Treatment Plants include systems that use wastewater in a manner subject to Title 22 wastewater reclamation standards and/or any treatment unit other than a septic tank which processes more than 10,000 gallons of wastewater per day. It does not include systems which process wastewater originating solely from agricultural uses, retail food facilities or storm water if these systems do not include any domestic wastewater component.

1. Package treatment plants cannot serve multiple uses on separate parcels under separate ownership unless the Board of Supervisors approves specific findings for multiple ownership of sewage dispersal systems.

B. The application request for a package treatment plant must be prepared by a Registered Civil Engineer with documented experience in the design of sewage treatment plants and must include the following:

1. A full description of the proposed collection and treatment method and process components.
2. A full description of the proposed method for wastewater dispersal.
3. Environmental review for CEQA compliance.

C. The typical conditions of approval for a Package Treatment Plant include the following:

1. An independent engineering consultant acceptable to PRMD shall perform peer review of the plans at the applicant’s expense.
2. A permit to construct the collection system shall be obtained from PRMD prior to the start of any construction of the collection system.
3. All applicable county permits shall be obtained for the treatment and dispersal facilities including grading, electrical, and plumbing permits.
4. Prior to obtaining building permits for any portion of the project, Waste Discharge Requirements shall be obtained from the appropriate Regional Water Quality Control Board.

5. The long term managerial and financial needs of the package treatment plant shall be fully documented.
   
a. Prior to the issuance of building permits, deed restrictions shall be recorded specifying the conditions under which the package treatment plant was approved.

6. The package treatment plant shall be operated under a valid Sonoma County Operational Permit in accordance with an approved monitoring plan.

7. Use of the facility shall cease if either the Waste Discharge Requirements or the County Operational Permit is revoked.

D. For additional information and specific requirements refer to Appendix D PRMD Policy and Procedure 1-4-3 Package Treatment Plant Policy and Procedure.

11.6 Performance Wells

A. All commercial systems and nonstandard OWTS must be designed with a series of performance wells to monitor the performance of the system. In limited circumstances, performance wells may be required for standard OWTS that may present a threat to public health and/or the environment. Sampling of effluent in the wells may be required to evaluate the treatment of the system and ensure that groundwater degradation does not occur.

B. The construction of the performance wells shall be constructed with 3" or 4" approved casing and screened with 1/16" or 3/32" slots, and a minimum 12 inch annular concrete seal. Monterey sand or equivalent shall be placed from the bottom of the well to the depth of the annular seal. The exception to the Monterey sand fill is for the wells in the gravel bed of at-grade or mound systems. These wells shall be filled from the bottom of the well to the depth of the annular seal with pea gravel.

C. All performance wells are designed to monitor the performance of the system by sampling groundwater to ensure degradation does not occur. Performance wells are strategically placed up-gradient, within, laterally, and down-gradient of the OWTS.

1. If damage is noted during monitoring or the performance well cannot be located, the well shall be replaced by a qualified contractor in the area shown on the original design.

D. The performance wells shall be either augured or post holed or drilled by hand after the OWTS is completed. The construction of the performance wells shall be as mandated by the PRMD staff. The soil shall be scarified to remove compaction or smeared soil that may seal the performance well. A backhoe shall not be utilized to excavate for a performance well.

E. Performance well heads shall be protected and encased within plastic, concrete, or an approved type box to provide easy access.
1. The performance well caps/lids shall be maintained for easy removal/access during monitoring and need to prevent surface water from entering the well.

F. The depth of the annular seal for the performance wells within the gravel bed shall not exceed beyond the depth of the gravel bed of the OWTS.

G. A concrete annular seal of a minimum 12 inches from the surface of native grade is required for all performance wells, between the earthen side-wall and the solid portion of the performance well pipe.

H. Refer to Sections 11, 12, 13 and Figure 11.6 for additional performance well information and specific requirements.

**Figure 11.6 Performance Well Detail**
11.7 Grease Interceptors

A. Grease interceptors shall be required for commercial facilities with OWTS when it is determined by PRMD that the amount of grease introduced into the system is in excess of 50 mg/l.

1. Plans and specifications for grease interceptors shall be submitted to PRMD for approval. The PRMD staff shall review the grease interceptor design in accordance with minimum design and construction criteria established by Sonoma County.
2. Waste from floor drains, floor sinks, dishwashers, pot sinks, and mop sinks shall be plumbed separately into the grease interceptor.
3. Effluent from grease interceptors shall be disposed of in a septic tank and not directly discharged to the dispersal field.
4. Grease interceptors shall be located, installed and constructed so that the temperature of the sewage will be reduced to permit congealing or separation of grease, and easy access for cleaning.
5. Commercial facilities generating up to 200 gallons per day of wastewater from the fixtures noted in section 11.7.A.2 above, shall install a 810 gallons capacity minimum size grease interceptor or an interior pressure Uniform Plumbing Code (UPC) rated grease interceptor on the kitchen drain.
6. Commercial facilities generating 200 gallons per day or more from the fixtures noted in 11.7.A.2 above, shall install a grease interceptor sized in accordance with the PRMD Building Division requirements. The grease interceptor shall be a minimum size of 810 gallons capacity.
7. Each grease interceptor shall be so installed and connected that it shall be easily accessible for inspection, cleaning, and removal of the intercepted grease. Grease interceptors shall be located outside.

Section 12 Criteria for Non-Standard Experimental OWTS

12.1 General

A. PRMD and the North Coast and San Francisco Bay RWQCBs entered into Memoranda of Understanding (MOUs) in the early 1990s. The MOUs were for the evaluation of specific proposals for the installation and use of non-standard OWTS. The OWTS Policy Tier 2 requirements supersede those Agreements. The criteria for the design concepts of non-standard OWTS are to incorporate features for:

1. the prevention of transmission of disease;
2. dispersal of wastewater below the surface of the ground;
3. the prevention of contamination of groundwater and other beneficial water by discharge from OWTS.

B. All Non-Standard Experimental OWTS shall be designed by a Qualified Consultant.
C. There are two basic types of non-standard OWTS: Experimental and Alternative. Non-standard OWTS are used to overcome one or more adverse site or soil condition such as high groundwater, slowly permeable soils, or other limiting condition or where increased wastewater treatment is needed. Unlike conventional OWTS, non-standard OWTS vary in design and concept depending on the site and soil conditions.

D. PRMD monitors the operation and maintenance of all non-standard systems. Inspection frequency may vary but is dependent upon the level of monitoring compliance by the system owner/operator.

E. PRMD shall submit results of the monitoring inspection to the RWQCB in the form of an annual report for each calendar year. The report may incorporate information provided in the self monitoring reports.

1. The Annual Report will include the following:
   a. Status of staffing adequacy for the number of non-standard OWTS in the program
   b. Percentage of Owner Self-Monitoring completion for systems on 1-year, 2-year, and 3-year frequencies
   c. Percentage of PRMD staff monitoring completion for systems on 1-year, 2-year, and 3-year frequencies.

F. In addition to the requirements of this Article, Experimental and Alternative OWTS are also subject to the Section 13 Operational Permit and Monitoring Program requirements.

**12.2 Restrictions**

A. Because of evolving technology and problems that may be discovered through the monitoring program, the regulations for non-standard OWTS may change. Property owners are cautioned that regulations for non-standard OWTS may change by action of the RWQCB or PRMD. Therefore, despite previously performed and accepted work by PRMD, any proposal for a non-standard OWTS must meet the regulations that are in effect at the time that PRMD approves the OWTS permit application.

B. OWTS shall not be placed in areas that have been filled, excavated, ripped, plowed altered, modified, or in areas of flooding, drainage problems, or geologic instability.

1. Such areas that have been filled excavated, ripped, plowed, altered, and/or modified may be acceptable if the soil is stable and soil evaluation indicates characteristics acceptable for installation of an OWTS such as approved structure, texture, consistency, pore space, percolation rate.
2. The only exception or variance to this is for repairing malfunctioning OWTS for existing legal residences or businesses.
3. Exceptions or variances will not be granted to allow increases of existing wastewater discharges.
C. When a non-standard OWTS is proposed in order to increase the sewage discharge of an existing use, the existing system must be brought into compliance with all current regulatory requirements.

12.3 Experimental OWTS

A. A non-standard Experimental OWTS is one that has been developed, researched, and monitored by a major land grant university or equivalent and meet National Science Foundation (NSF) criteria and certification. The PRMD Liquid Waste Specialist reviews all technical and research information regarding proposed non-standard Experimental OWTS.

1. The Liquid Waste Specialist will present any promising non-standard Experimental OWTS to the Regional Water Quality Control Board (RWQCB) for technical review and approval. If both PRMD and RWQCB staff approve the non-standard Experimental OWTS, design parameters, site and soil characteristics, then a site specific monitoring program will be established.
2. Installation of a maximum of 10 systems per year shall be allowed for new construction within each Regional Board jurisdiction with similar site and soil conditions.
3. Intensive monitoring (two or more inspections per year) performed for at least two normal winters is required.
4. PRMD may consider whether an additional period of monitoring or an additional number of systems shall be installed prior to Alternative non-standard OWTS status consideration.
5. The Liquid Waste Specialist may request the RWQCB permission to proceed to Alternative non-standard OWTS status if the intensive monitoring indicates satisfactory results.

B. All Non-Standard Experimental OWTS shall be designed by a Qualified Consultant.

C. Non-standard Experimental OWTS limitations include the following

1. Repair of existing malfunctioning residential and commercial OWTS.
2. The expansion of use for existing residential and commercial systems (limited to 33%) may be allowed by PRMD.
3. Maximum peak loads are 600 gallons per day for new single family homes and maximum average flows of 1000 gallons per day for new commercial establishments.
4. Not acceptable as justification for land division.
5. Not approved for use in a sewer hookup area, septic tank ban area, or County identified Variance Prohibition Areas, except as a repair.

D. At this time, the bottomless sand filter OWTS is considered an approved Experimental OWTS.
12.4 Bottomless Sand Filter OWTS

A. The Bottomless Sand Filter OWTS shall meet the site, design, construction and performance criteria of Section 12.6 Bottomless Sand Filter (Geographic Waiver) with the only exception is that the existing structure is not required to be located on the 100 year flood plain, but may be located outside the 100 year flood plain.

12.5 Gravel-less Pressurized Dispersal Channel (GPDC)

A. Gravel-less Pressurized Dispersal Channel (GPDCs) are designed for subsurface dispersal of high-quality effluent after secondary treatment. There are two typical configurations. One consists of perforated laterals laid in a 12-inch wide infiltration channel, covered with sections of plastic half-pipe and shallowly buried in native soil. The other uses an 18-inch infiltration channel and sections of 8-inch low-profile HDPE chamber material.

B. The site criteria for Gravel-less Pressurized Dispersal Channel OWTS includes the following:

1. Depth to a limiting condition and permeable soils (1-120 mpi) below the dispersal line shall be a minimum of 24 inches.
2. The soil above the PVC line proposed depth shall be permeable (1-120 mpi). This excludes massive or platy structured soils. Soils subject to flooding, excessive irrigation, farming practices, grading, ripping or roto-tilling are also not acceptable. The quality of acceptable soils above the line shall be equal to those below the line.
3. A minimum of 24 inches of permeable soil below dispersal depth shall extend a horizontal distance of no less than 25 feet down gradient from the edge of the last proposed line, including expansion areas.
4. GPDC sites shall not exceed thirty (30) percent slope without an approved waiver and a geotechnical study required for slope stability and suitability.
5. GPDC sites shall not exceed twenty-five (25) percent slope when fill is placed over the dispersal system.

C. The design criteria for GPDC OWTS includes the following

1. Separation between laterals shall be a minimum of three (3) feet.
2. GPDC installations space orifice holes 24 inches min to 72 inches max on center.
3. A GPDC System is typically installed 10 inches into native soil. A minimum native soil depth of 6 inches may be allowed with disinfection. The minimum soil cover over the orifice shield is 2 inches. The maximum soil cover allowed is 18 inches. (See Figure 1a).
4. The designer shall also determine the number of zones, the number of doses, the quantity of the dose, the head losses, spacing of lines, spacing of orifices, diameter of the pipe (typically 1" PVC), and pump size.

5. The length of each dispersal line shall not exceed 75 feet to insure equal distribution to each orifice. If multiple zones are designed, dosing must be automatically alternated between each zone.

6. All GPDC Systems require an approved packed bed media filter supplemental treatment unit for treating septic effluent. The level of supplemental treatment must comply with NSF Standard 40 or to the satisfaction of the administrative authority.

7. Designer shall employ measures to prevent uneven distribution of the dispersal field due to drain down following a pump cycle. Per California Plumbing Code, spring check valves are not allowed for wastewater applications.

8. Provide 2 feet of solid pipe between the manifold and the first orifice.

9. At the end of each lateral, install a sweep ell (or two 45° elbows) and a ball valve with a threaded plug.

10. All system components shall be appropriately sized for the system dosing flow rates, and shall meet specifications of the manufacturer. All transport piping, supply and return manifolds and fittings must be Schedule 40 PVC or Schedule 80 PVC if threaded fittings are utilized. All filters must be sized to operate at a flow rate greater than or equal to the maximum design discharge rate of the system.

11. All GPDC System designs shall demonstrate that sufficient suitable area exists to construct two hundred (200) percent reserve area. Because GPDC Systems are experimental, in cases of split system designs, the GPDC System shall be installed as the primary system, and the other type of dispersal system shall be the 200 % expansion system.

12. Totalizing flow meters (in gallons) are required on the supply line. Flow meters must be installed in a readily accessible location for reading and servicing.

13. A controller capable of timed dosing is required.

14. Disinfection of the treated wastewater shall be incorporated in cases of well-drained soils (<1 mpi or faster) or where dispersal systems only have a minimum of 6 inches of native soil cover above the shield (see Figure x). If 6 inches of approved fill is added above the 6 inches of native soil cover, disinfection will not be required.

15. For aerobic treatment unit (ATU) systems that function with external blowers, a cutoff switch or interlock that disables the pump must be built into the control panel so the blower may not be disconnected.

D. The following construction criteria for GPDC OWTS includes the following:

1. Construct trenches with special attention to proper elevation and contour.
   a. Shallow Trenches can be dug (by hand or with a trenching machine.
   b. Trenches shall not be installed when the soils are wet or excessively damp state.
   c. Sidewall of trenches shall be scarified to remove all smears.
   d. Install perforated piping, placing orifices upwards for the hydraulic test.
   e. Trenches can be straight, or they can be curved to fit terrain and complement vegetation, but they must be set on level grade.
f. Lay the half-pipe (or low-profile chamber) sections over the laterals, overlapping the section ends by a few inches. For covering curving laterals, half-pipe section ends can be cut at an angle and overlapped to match the curve of the lateral. Install one inspection port halfway along each lateral (See Figure 1a)

2. Valves must be readily accessible for service and/or inspection. All valve boxes must be protected from gopher soil movement. A detail of the valve box must be included on the plans. Specify concrete, hardware wire or similar bottom.

3. Perform hydraulic test after the distribution system has been completed.
   a. Size of orifice shall be 1/8" – 3/16".
   b. Pump must be adequate to deliver the required orifice discharge range of 24 inches (3/16" hole) and 60 inches (1/8" hole) for upward discharge to the lateral.
   c. Distribution to all laterals shall be balanced.
   d. This test shall be inspected by the designer/consultant and the PRMD Environmental Health Specialist.

E. Establish the finished grade of the GPDC OWTS by track rolling and grooming by hand. Backfill the excavation with caution. Do not compact the soil around the half-pipe or chamber.

F. Fill material may only be placed above native soil for soil cover, and shall not be used to meet required soil depth minimums. The system designer shall describe the type of fill to be placed in terms of texture and structure, the depth and method of ripping before placement. No part of the GPDC dispersal field may be located where the site slope exceeds twenty-five (25) percent when fill is used.

   1. A ground cover (turf, fruit trees or other appropriate landscaping) must be planted over the dispersal field after installation to provide additional treatment, prevent erosion and increase wastewater reuse through plant evapotranspiration.
   2. Native material is acceptable if there are no large or sharp rocks that may damage the pipe walls. If native material is not usable, backfill with sand or pea gravel, or use an imported material that is approved by your local regulator.
   3. Install performance wells and complete all details as shown on the plans.
   4. After the #189 septic electrical inspection has been completed by the Building Inspector, a start up inspection must be scheduled with the system designer, installer, service provider and PRMD Well & Septic staff.
   5. Prior to OWTS final approval, acceptable erosion control must be completed.

G. The performance wells criteria for GPDC OWTS includes the following. A minimum of five performance wells shall be installed within and around the system to a depth of 24 inches below proposed trench bottom.

   1. Two performance wells shall be installed between trenches in the middle of the leach field.
   2. Two performance wells shall be installed 25 feet down slope of the lowest trench line.
   3. One performance well shall be installed at 10 feet upslope of the highest trench line.
   4. Additional performance wells may be required for systems longer than 75 feet.
   5. Permit & Resource Management Department may require that performance well locations be changed in special situations.
   6. Performance wells shall be properly installed to provide easy access.
Section 13 Criteria for Non-Standard Alternative OWTS

A. An Alternative non-standard OWTS is any sewage treatment and dispersal system other than a conventional OWTS or non-standard Experimental OWTS. An Alternative OWTS has demonstrated satisfactory operation, maintenance, and monitoring under the Experimental OWTS phase of the non-standard system OWTS program and the PRMD and RWQCBs certify the OWTS as an approved Non-Standard Alternative OWTS.

1. The currently approved Alternative OWTS include the following:
   a. Pretreatment units that meet the National Sanitation Foundation (NSF) Standard 40 and have received PRMD approval
   b. Wisconsin mound systems
   c. Shallow trench pressure distribution
   d. At-Grades
   e. Shallow in-ground
   f. Bottomless sand filters (geographic waiver)
   g. Drip dispersal

B. All Non-Standard Alternative OWTS shall be designed by a Qualified Consultant.

13.1 Pretreatment Units

A. Pretreatment units may be used in conjunction with standard or nonstandard systems where the site and soil conditions are not adequate. Standard systems with a pretreatment unit are considered to be a standard system unless the pretreatment unit is required in which case it will be considered an alternative nonstandard system.

B. In cases where a pretreatment system is used, PRMD and the RWQCB may allow a reduction in the minimum depth of soil below trench bottom to two (2) feet. However, in all instances, at least two or the required three feet of soil beneath trench bottom must be acceptable native soil.

C. Pretreatment units that may be permitted in Sonoma County must meet National Sanitation Foundation (NSF), Standard 40 by an ANSI Accredited Certification Body (ACB) and receive prior written approval of PRMD.

D. Recirculating sand filters are also an approved pretreatment unit. Sand filtration may be defined as the intermittent application of wastewater to a bed of granular material that has an under drain to collect and discharge the final effluent. The purpose of sand filters is to pretreat the effluent and improve wastewater quality.

1. The design of sand filters in Sonoma County is based on the “Guidelines for the Use of Sand Filters” (Technical Review Committee, August 2, 1989. Washington State Department of Health, Olympia, Washington). Under the Permit and Resource Management Departments waiver standards, designers may propose to the liquid waste specialist, the use of sand filters to justify increasing soil application rate.
13.2 Mound OWTS

A. Mound OWTS are based upon the Small Scale Waste Management Project, University of Wisconsin at Madison, Wisconsin Mound Soil Absorption System Siting, Design and Construction Manual, by James C. Converse and E. Jerry Tyler, January 2000. Mound systems are designed to overcome restrictive conditions for soil permeability and depth to groundwater below the bottom of the system. Designers shall use the same methodology and nomenclature as the most recent Wisconsin Mound Soil Absorption System Siting, Design and Construction Manual.

B. The site criteria for Mound OWTS includes the following:

1. Percolation rate of 1-120 minutes per inch (mpi)
   a. Percolation rate requirements apply to the first 24 inches of soil as measured from native grade. See Section 7 site evaluation and percolation test requirements.
   b. Presoak remaining in 24" deep perc test holes may indicate lack of soil depth.
   c. Rates faster than 1 mpi are not acceptable.

2. Minimum elevated groundwater level is 24 inches from native grade.
3. Minimum depth of suitable permeable soil is 24 inches from native grade.
   a. The rock content (as retained on the #10 Sieve) shall not exceed 50% by volume within the first 24 inches of soil from native grade.
   b. The minimum depth to fractured rock, impermeable soils, such as hardpans and claypans, and consolidated bedrock is 24 inches.
   c. The addition of an approved pretreatment unit does not mitigate one foot of the required minimum 24 inches of suitable soil beneath the mound. Two feet of acceptable native soil from native ground is required.

4. The minimum depth of permeable soil (24 inches) shall extend a minimal horizontal distance of at least 25 feet down gradient from the edge of the sand perimeter.
5. Mound systems are allowable on slopes up to 20%.
6. Placement of Mound OWTS into areas that require the removal of large trees, boulders, or rock outcroppings is not recommended.

C. The design criteria for Mound OWTS (see Figures 13.2a and 13.2b) includes the following

1. Wastes with a high biological oxygen demand are not suitable for mound systems without approved pretreatment sufficient to lower the waste strength to the level of that septic tank effluent as specified in Section 13.1.
2. Distribution (Gravel) Bed
   a. Sand Fill Loading Rate
      i. 1.0 gallons/square foot/day for residential type systems.
      ii. 0.8 gallons/square foot/day for all commercial type systems.
      iii. Reduced loading rates for high strength waste may be required.

3. Linear Loading Rate
   a. Designers shall estimate the linear loading rate for all proposed Mound OWTS and shall design the width dimensions of the gravel bed accordingly, so that the distribution bed is long and narrow and on the contour.
   b. When the depth to a limiting condition, e.g., impermeable soil layer or rock is only 24 inches, the linear loading rate shall not exceed 4 gallons/lineal foot/day.
   c. If it can be demonstrated that the wastewater flow will be vertical, as well as horizontal, a higher loading rate may be proposed.
   d. Refer to Table 13.2a and Figure 13.2d for the Linear Loading Rates based on Limiting Conditions.

Table 13.2a Linear Loading Rates (LLR) Based on Limiting Conditions

<table>
<thead>
<tr>
<th>Nature of Limiting Condition</th>
<th>LLR Range (gpd/linear ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Bedrock</td>
<td>3-4</td>
</tr>
<tr>
<td>Impermeable Soil Layer</td>
<td>3-4</td>
</tr>
<tr>
<td>Semi-Permeable Soil Layer</td>
<td>5-6</td>
</tr>
<tr>
<td>Fractured Compacted Till</td>
<td>5-6</td>
</tr>
<tr>
<td>Seasonal High Water Table</td>
<td>6-8</td>
</tr>
<tr>
<td>Creviced or Fractured bedrock</td>
<td>8-10</td>
</tr>
<tr>
<td>Sand and/or Gravel Layer</td>
<td>8-10</td>
</tr>
</tbody>
</table>
4. Infiltration Area (Dispersal Bed)

a. Sizing calculations for all mound dimensions shall be provided with all proposals. Refer to Figures 13.2a and 13.2b. The size of the infiltration area (the bottom infiltrative surface area of the bed) is determined by applying the following formula

i. Infiltrative Surface Area (sq ft) = Daily Design Flow (gal/day)/ Sand Fill Loading Rate
Figure 13.2b Mound Cross Section
b. Dispersal Bed Width—The dispersal bed width (A) is determined by the Linear Loading Rate of certain soil type and depth. Linear Loading Rates are shown in Table 13.2a and Figure 13.2d. Maximum bed width shall be ten (10) feet.

i. Dispersal Bed Width (A) = Linear Loading Rate/ Sand Fill Loading Rate

c. Dispersal Bed Length—The length of the infiltration area (the infiltrative surface area of the dispersal bed) is determined by applying the following formula

i. Dispersal Bed length (B) =Required Infiltrative Surface Area/Dispersal Bed Width (A)
d. Dispersal Bed Depth (F)—A minimum of six (6) inches of aggregate for residential and nine (9) inches for commercial systems is placed beneath the distribution pipe and two (2) inches of aggregate is placed above the pipe.

i. Dispersal Bed Grade—The bottom of the dispersal bed must be level.

ii. Filter Media Depth—The depth of filter media shall be at least twelve (12) inches under all parts of the dispersal bed.

iii. The depth of filter media below the dispersal bed varies with ground slope according to the following formulas

iv. Filter media depth below upslope edge of dispersal bed (D) = one (1) foot.

v. Filter media depth below downslope edge of dispersal bed (E) = one (1) foot + [%

natural slope as a decimal x width of dispersal bed (A)]

e. Filter Media Length and Width—The length and width of the filter media are dependent upon the length and width of the dispersal bed, filter media depth and side slopes of the filter media.

f. Side slopes must be no steeper than three-to-one (3:1) (i.e. three (3) feet of run to every one (1) foot of rise).

g. The filter media length consists of the end slopes (K) and the dispersal bed length (B).

h. The filter media width consists of the upslope width (J), the dispersal bed width (A), and the downslope width (I). On sloping sites, the downslope width (I) will be greater than on a level site if a three-to-one (3:1) side slope is maintained. Table 13.2b gives the slope correction factor (multiplier) for slopes from zero (0) up to twenty (20) percent with a three-to-one (31) side slope.

i. The sand fill shall be level and extend a minimum of twenty-four (24) inches horizontally beyond the dispersal bed on all sides, and then uniformly slope as determined by the mound dimensions. On slopes greater than two (2) percent, the twenty-four (24) inch dimension may be reduced to twelve (12) inches on the uphill side of the distribution bed.

j. Slope Width and Length of the Mound System

i. For sloping sites the downslope width (I) and upslope width (J) are a function of the depth of the sand fill below the respective downhill or uphill side of the dispersal bed, the desired side slope, three-to-one (31), and the slope correction factor. See Table 13.2b.

ii. For level sites and end slope length (K), no slope correction factor is used.

iii. Upslope width (J) = (D+ F)(3) (slope correction factor)

iv. Downslope width (I) = (E+ F)(3) (slope correction factor)

v. End slope length (K) = \[(D+E) + F\](3)

\[
\frac{2}{2}\]
Table 13.2b Mound Slope Correction Factors

<table>
<thead>
<tr>
<th>SLOPE %</th>
<th>DOWNSLP E (I) correction factor</th>
<th>UPSLOP E (J) correction factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1.06</td>
<td>0.94</td>
</tr>
<tr>
<td>4</td>
<td>1.14</td>
<td>0.89</td>
</tr>
<tr>
<td>6</td>
<td>1.22</td>
<td>0.86</td>
</tr>
<tr>
<td>8</td>
<td>1.32</td>
<td>0.80</td>
</tr>
<tr>
<td>10</td>
<td>1.44</td>
<td>0.77</td>
</tr>
<tr>
<td>12</td>
<td>1.57</td>
<td>0.73</td>
</tr>
<tr>
<td>14</td>
<td>1.72</td>
<td>0.71</td>
</tr>
<tr>
<td>16</td>
<td>1.92</td>
<td>0.68</td>
</tr>
<tr>
<td>18</td>
<td>2.17</td>
<td>0.65</td>
</tr>
<tr>
<td>20</td>
<td>2.50</td>
<td>0.62</td>
</tr>
</tbody>
</table>

k. Basal Area Calculation—The amount of sand basal area required is dependent upon the permeability of the original soil.

i. For level sites, the total basal area [length of filter media (L) x width of filter media (W)] beneath the filter media is available for effluent absorption into the soil.

ii. For sloping sites, the only available basal area is the area beneath the dispersal bed (A x B) and the area immediately downslope from the dispersal bed [bed length (B) x downslope width (I)]. It includes the area enclosed by [B x (A + I)]. The upslope and end slopes will transmit very little of the effluent on sloping sites, and are therefore disregarded.

iii. The available basal area must equal or exceed the required basal area

(aa) Basal area required = Daily flow / Soil Infiltration rate

(bb) Basal area available = B x (A + I + J) on sloping site or B x (A + I) on level site.

5. Configuration

a. Only single distribution beds are acceptable. Dual beds are not allowed.
b. The maximum width of any gravel bed is 10 feet.
c. The depth of the gravel bed shall be 6 inches below the pipe for residential systems and 9 inches for commercial systems and include 2 inches of gravel cover over the pipe.

6. Aggregate

a. 3/8 inch double washed pea gravel size to 2.0 inch double washed drain rock.
b. The percentage of fines (<0.035 mm) of washed gravel shall not exceed 1% by weight.
7. Natural Contour
   a. The distribution bed shall explicitly follow the natural contour of the ground. The bed must be installed within a tolerance of 0.25 feet (3 inches) vertically per 100 feet horizontally.
   b. Distribution beds shall be angled or curved to meet this requirement.
   c. The distribution bed shall not be placed in a concave landscape position.

8. Reserve Expansion Area
   a. On parcels created before October 1971, a 100% reserve area is required.
   b. For commercial systems and parcels created after October 1971, a 200% reserve area is required.

9. Sand Fill (Basal) Area
   a. The sand-fill (basal) area, shall, at a minimum, provide adequate basal (absorption area). The sand area size is based upon the average percolation rate and the sewage application rate chart. See Table 7.2a.
   b. Sand fill media shall conform to the ASTM C-33 sand with less than 5% fines less than 0.53 mm sand specification to Wisconsin mound criteria (see Table 13.2d and Figure 13.2e).

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3/8</td>
<td>100%</td>
</tr>
<tr>
<td>#4</td>
<td>95-100%</td>
</tr>
<tr>
<td>#8</td>
<td>80-100%</td>
</tr>
<tr>
<td>#16</td>
<td>50-85%</td>
</tr>
<tr>
<td>#30</td>
<td>25-60%</td>
</tr>
<tr>
<td>#50</td>
<td>10-30%</td>
</tr>
<tr>
<td>#100</td>
<td>2-10%</td>
</tr>
<tr>
<td>#200</td>
<td>0-5%</td>
</tr>
</tbody>
</table>
Figure 13.2c: Mound Sand Criteria

Sand Fill Specifications:

- < 20% greater than 2 mm
- < 5% smaller than 0.053 mm

plus

1. total sample sieve analysis fits preferably between the solid lines. Permissible to dashed line.

plus

2. ASTM C-33 specification including

3. Effective diameter

\[ D_{10} = 0.15 - 0.30 \text{ mm} \]

Coefficient of Uniformity

\[ D_{60}/D_{10} = 4 - 6 \]
c. the ground slopes greater than 1%, the area uphill from the edge of the gravel distribution bed shall not be included in the calculations for the required basal area.
d. Areas beyond the distal end of the gravel bed shall not be included in the calculations for the required basal area for systems exceeding 1% slope.

10. Configuration

a. The toe of the sand fill shall follow contour, and shall not deviate more than 0.25 feet (3 inches) in elevation per 100 foot run.

![Figure 13.2d Contour Conformance](image)

b. The sand fill configuration shall extend a minimum of 24 inches level from the edge of the distribution bed on all sides, then uniformly slope as determined by the mound dimensions. On the slopes greater than 2%, the 24 inch dimension may be reduced to 12 inches (minimum) on the uphill side of the distribution bed only.

11. Soil Cover

a. A minimum of 6 inches in depth after settling over the gravel bed portion of the mound and over the remainder of the sand portion.
b. Mounded to a height of 12 inches after settling at the midsection of the gravel bed.
c. The distal ends and uphill sides soil cover width requirements are 4 feet
d. Downslope soil cover shall conform to Table 13.2d.
Table 13.2d Mound Downhill Soil Cover Requirements

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>COVER (lineal feet beyond gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2%</td>
<td>4</td>
</tr>
<tr>
<td>2-4%</td>
<td>6</td>
</tr>
<tr>
<td>4-6%</td>
<td>8</td>
</tr>
<tr>
<td>6-8%</td>
<td>10</td>
</tr>
<tr>
<td>8-12%</td>
<td>12</td>
</tr>
<tr>
<td>12-16%</td>
<td>16</td>
</tr>
<tr>
<td>&gt;16%</td>
<td>20</td>
</tr>
</tbody>
</table>

e. The quality of the soil structure and texture (USDA Classification) shall be at least equal to that of the topsoil existing on the site.

12. Distribution System

a. Designers shall calculate the total dynamic head loss of the entire distribution systems.

   i. Vertical differences.
   ii. Length of entire piping system.
   iii. Loss of all valves, tees, elbows, and appurtenances.
   iv. Head Loss shall be referenced as feet of elevation.
   v. Hydraulic orifice discharge shall be a minimum of 60 inches for upward discharge. Orifices shall have a protective shield.
   vi. Orifice spacing shall be a maximum of 36 inches on center. (Closer spacing is preferred.)
   vii. Size of orifice shall be 1/8" – 3/16".

b. System distribution manifolds shall have a balancing valve at the beginning of each perforated pressurized line and a purge valve at the end.

   i. All valves shall be protected and encased within plastic, concrete or other approved type box to provide easy access and maintenance. Metallic valves are prohibited.
   ii. Box size shall be 10 inches across or larger, round or square, and must allow enough room for maintenance and/or to install stand pipes onto the ends of the purge valves.
   iii. Balancing valves shall be PVC Schedule 80 (or higher) gate valves.
   iv. Purge valves shall be PVC Schedule 80 gate or ball type valves.
   v. Valve boxes shall be placed on screen blocks or equivalent and shall be designed, installed, and maintained so as to prevent soil and rodent intrusion into the box. See Figures 13.2f and g.
Figure 13.2e Balancing Valve

Figure 13.2f Purge Valve
c. Spacing of pressurized lines shall be based on gravel bed width.

<table>
<thead>
<tr>
<th>Width of Gravel Bed</th>
<th>No. of Pressurized Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 4 feet</td>
<td>1</td>
</tr>
<tr>
<td>4 - 6 feet</td>
<td>2</td>
</tr>
<tr>
<td>6 - 8 feet</td>
<td>3 - 4</td>
</tr>
<tr>
<td>8 - 10 feet</td>
<td>4 – 5</td>
</tr>
</tbody>
</table>

d. Distribution piping shall be Schedule 40 PVC or greater of at least three-quarter (3/4) inch diameter.
e. Maximum length of pressurized lines shall be 75 feet.
f. Maximum distance between perforations shall be 36 inches.
g. Perforations shall be directed upward and must be protected with a shield.

13. Sump and Pump

a. Refer to Sections 8.3 and 8.4 for required sump and pump features.
   i. Automatic dosing siphons are not allowed in mound sewage dispersal systems.

D. The construction criteria for Mounds includes the following

1. These specifications must be included in the system plans submitted with the PRMD Permit Application. The use of wheel type vehicles is prohibited.

   a. For the purpose of ripping.
   b. When driving on any areas that have been ripped.
   c. When driving on the sand fill.
   d. When placing or moving the soil cover.
   e. At anytime that the soil conditions are wet, moist, or saturated.

2. Placement of the pressurized transmission line from the sump tank to the mound manifold shall be a minimum of 24 inches below the surface of the ground.

3. Site preparation of soil surface to a depth of 8 to 12 inches.

   a. Mow excessive vegetation.
   b. Remove trees.
   c. Cut and grind stumps to a depth of 12 inches.

4. Perform initial ripping parallel to the contours of the ground within the limits of the sand base; rippers set 8 to 10 inches apart.

5. After all the sand has been placed and prior to mound soil cover placement, rip the native soil that will interface with the mound soil.

6. Prohibit all traffic on any ripped surfaces until the full depth of fill or cover material has been placed.

7. Uniformly place and compress the sand fill by track rolling to a neat line to the grade determined by the mound dimensions. A tolerance of no more than 0.25 feet (3 inches)
vertically to 100 feet horizontally is allowed. Add additional sand as the sand fill area is compressed.

8. Construct gravel bed with special attention to proper elevation

a. Temporary form boards are required for placement of the distribution bed gravel.
b. Form boards shall be fully enveloped by the sand bed and shall be removed prior to cover placement.

9. Perform hydraulic test after the distribution has been completed.

a. Hydraulic orifice discharge shall be a minimum of 60 inches for upward discharge.
b. Orifices shall have a protective shield.
c. Distribution to all laterals shall be equal.
d. This test shall be inspected by the consultant and PRMD staff

10. Condition soil cover material with sufficient moisture to permit track rolling to a firm cohesive surface.

11. Establish the finished grade of the mound by track rolling and grooming by hand.

12. Complete proper drainage work and erosion control measures before final inspection.

13. Install monitoring wells and details as shown on the plans.

14. Prior to septic system final approval, acceptable erosion control must be completed.

E. The performance wells criteria for Mounds includes the following

1. A minimum of seven performance wells shall be installed within and around the mound system. Well screen is required for the perforated sections of the performance wells. See Figure 11.6.

a. Two performance wells extending to the bottom of the gravel bed shall be installed within the distribution gravel bed in proportionate locations.
b. Two performance wells shall be installed at the down slope sand toe of the mound at proportionate locations from centerline at a depth of 24 inches.
c. Two performance wells shall be installed at a depth of 24 inches 25 feet down slope of the sand toe mound at proportionate locations from the centerline.
d. One performance well shall be installed at a depth of 24 inches 10 feet upslope of the edge of the upslope sand bed at mound centerline for sloping sites and 25 feet upslope of for level terrain.
e. Performance wells shall be protected and encased within plastic, concrete or an approved equivalent to provide easy access.
f. All performance wells shall have concrete seals for the upper 12 inches
13.3 Shallow Trench Pressure Distribution (STPD) OWTS

A. Pressure distribution systems are designed for sites that typically have shallow top soils over slowly permeable or fractured subsoils on slopes up to 30%.

B. The site criteria for STPD OWTS includes the following

1. Percolation rate of 1-120 mpi for STPD systems on slopes up to 30%.
2. Rates faster than 1 mpi are not acceptable.
3. Percolation depth measured from native grade
   a. 24 inches minimum on slopes up to 20%.
   b. 30 inches minimum on slopes from 20 to 25%.
   c. 36 inches minimum on slopes from 25 to 30%.
   d. 60 inches maximum on slopes up to 30%.
4. Systems shall have a minimum depth of 24 inches of suitable soil beneath proposed trench bottom as established by
   a. Visual field observations and soil texturing to identify a limiting condition.
   b. The rock content (as retained on the #10 sieve) shall not exceed 50% by volume within the first 24 inches of soil below trench bottom.
   c. Soil hydro and bulk density tests (Zone 1 or Zone 2 soils).
   d. Plasticity Index tests as measured by ASTM D-4318-84 Atterburg Series, with results of <20 for Zone 3 or 4 soils.
   e. Soil percolation testing with rates of 120 mpi or better
5. Systems shall have a minimum depth of 24 inches below trench bottom to groundwater, fractured rock, consolidated rock, bed rock, or impermeable soils.
6. The addition of an approved pretreatment unit to a STPD does not mitigate one foot of the required minimum 24 inches of suitable soil beneath proposed trench bottom. Two feet of acceptable native soil beneath the proposed trench bottom is required.
7. A minimum of 24 inches below trench bottom of permeable soil shall extend a horizontal distance of no less than 25 feet down gradient from the edge of the last proposed trench.
8. To maximize evapotranspiration, pressure distribution systems may not be installed below non-permeable type soils such as high shrink well clays, highly compacted soils, highly cemented soils, and/or massive or platy soil structures.

C. The design criteria for STPD OWTS includes the following

1. The minimum trench spacing shall be 6 feet, center to center, on slopes less than 20%.
   a. Greater trench spacing is recommended on steeper slopes.
2. Distribution trenches shall follow the natural contour of the ground; trench bottoms shall be level.

   a. The maximum deviation along the downhill side of the trench shall not vary more than 0.25 feet (three inches) vertically per a 100 foot run. Distribution trenches shall be angled or curved to meet this requirement. The distribution field should not be placed on concave land forms.

3. Approved distribution trench design. See Figure 13.3.

   a. Distribution piping shall be Schedule 40 PVC or greater of at least three-quarter (3/4) inch diameter.
   b. Approved aggregate below the pipe

      i. Perk rate of 5 - 120 mpi-- 3/8 to 3/4 double washed gravel with less than 1% fines passing the 200 Sieve.
      ii. Perk rate faster than 5 mpi--Pretreatment required before dispersal field.

c. Two inches of aggregate is required over the perforated sections of the pressurized line.

d. Minimum requirement of backfill is 12 inches over the pipe.

e. Maximum trench depth shall be 60 inches.

**Figure 13.3 STPD Trench Detail**

Note: The allowable width of STPD dispersal trench 18-24"
4. Absorption Area. Shall be calculated as the sidewall beneath the distribution pipe. The bottom area of the trench is not included as absorption area for sizing purposes.
   a. The maximum sidewall area allowed for any system design is 3 square feet per lineal foot of trench.
   b. Center trench spacing shall be increased by 1 foot for every 6 inch increase in gravel depth.

5. Soil Cover. The quality of the back fill shall be consistent in structure and texture as the topsoil already existing on the site. A minimum depth of 12 inches is required.
   a. Soil structure and texture above the trench is extremely important to maximize evapotranspiration.
   b. Trenches shall not be installed below non-permeable types of soils (high shrink-swell clays, soils with massive structure, or highly compacted soils).

6. Designers shall calculate the total dynamic head loss of the entire distribution System, taking into account
   a. Vertical differences.
   b. Length of entire piping system.
   c. Loss of all valves, tees, elbows, and appurtenances.
   d. Head loss shall be referenced as feet of elevation
   e. Hydraulic orifice discharge shall be a minimum of 60 inches for upward discharge. Orifices shall have a protective shield.
   f. The recommended orifice spacing is 24 inches on center; however the maximum spacing is 36 inches. The first and last orifice shall be located one half orifice space from the ends of the distribution lines.

7. Balancing Valves and Purge Valves. System shall have a balancing valve at the beginning of each perforated pressurized line and a purge valve at the end. See Figures 13.2f and g.
   a. All valves shall be encased in plastic or concrete boxes. Metallic valves are prohibited.
      i. All balancing valves shall be PVC Schedule 80 (or equivalent) gate valves.
      ii. All purge valves shall be ball or gate PVC Schedule 80.
   b. All boxes shall allow enough room for maintenance and adequate room to install stand pipes onto the end of the purge valves.

8. There shall be a minimum of 3 foot separation from the transmission line to the beginning of the aggregate portion of the trench or gravel bed.

9. The cross section of the transmission line and the beginning of the gravel portion of the trench shall be stepped so as to prevent seepage of effluent from trench to trench.

10. Maximum length of run for a perforated pressurized line shall be 75 lineal feet.

11. In the distribution network, orifices shall be placed in upward position with an orifice shield.

12. The sump and pump installation shall be as specified in Section 8.3 and 8.4

13. Dosing siphons are prohibited in all pressure distribution type systems.
D. The following construction criteria for STPD OWTS and specifications must be included with the system plans submitted with the permit application

1. Placement of the pressurized transmission line from the sump tank to the first manifold must be a minimum of 24 inches below the surface of the ground.
2. Construct trench beds with special attention to proper elevation and strict attention to contour.
   a. Trenches shall not be installed when the soils are wet or excessively damp state.
   b. Sidewall of trenches shall be scarified to remove all smears.
   c. Place aggregate into the trench.
   d. Install perforated piping, placing orifices upwards for the hydraulic test. Benching is strictly prohibited for the installation shallow trench pressure distribution systems regardless of the slope.

3. Perform hydraulic test after the distribution system has been completed.
   a. Pump must be adequate to deliver the required orifice discharge minimum of 60 inches for upward discharge to the lateral.
   b. Distribution to all laterals shall be balanced.
   c. This test shall be inspected by the designer/consultant and the PRMD Environmental Health Specialist.

4. Establish the finished grade of the STPD system by track rolling and grooming by hand. Complete required drainage work and erosion control measures before final inspection.
5. Install performance wells and complete all details as shown on the plans.
6. Prior to septic system final approval, acceptable erosion control must be completed.

E. The performance wells criteria for STPD OWTS includes the following. A minimum of six performance wells shall be installed within and around the system to a depth of 24 inches below proposed trench bottom. See Figure 11.6.

1. One or more performance wells shall be installed between trenches in the middle of the leach field.
2. One or more performance wells shall be installed 10 feet down slope of the lowest trench line.
3. Two performance wells shall be installed 25 feet down slope of the lowest trench line.
4. One or more performance well shall be installed at 10 feet upslope of the highest trench line.
5. Additional performance wells may be required for systems longer than 75 feet.
6. Permit & Resource Management Department may require that performance well locations be changed in special situations.
7. Performance wells shall be properly installed to provide easy access. See Figure 11.6 Performance Well Detail
8. Performance wells shall be a minimum of 24 inches below trench bottom.

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13.4 At-Grade OWTS

A. The Wisconsin At-Grade soil absorption system accepts septic tank effluent and treats and disperses it in an environmentally acceptable manner. At-grade systems are designed to allow for reduced soil permeability and/or depth to groundwater conditions below the bottom of the system. It serves the same function as in-ground soil absorption trenches and mound systems. The At-grade component contains pressure distribution laterals installed on top of a gravel distribution media, which is installed directly on top of a plowed native soil. The system is then covered with a loam or a similar soil. Figure 13.4a is for illustration purposes only. Note that the diagram for the Shallow In-Ground would require the addition of an approved pretreatment unit to meet the three feet of soil below trench bottom requirement.

Figure 13.4a SIG (requires pretreatment), At-Grade, Mound Soil Below Trench Bottom Requirements

B. The minimum site criteria for At-grade OWTS. Permeable soil is required to a depth of 36 inches. Percolation testing done at 24 or 36 inches must meet the following criteria:

1. Percolation testing may also be required at 12 inches if this is the worst soil horizon encountered.
2. 1 - 120 mpi for At-Grade systems on slopes up to 25%. Note A sand filter or other approved pretreatment unit is required when percolation rates are faster than 5 mpi or slower than 90 mpi.
   a. Rates faster than 1(one) mpi are not acceptable.
3. Separation from native grade to elevated groundwater is 36 inches, but may be reduced to 24 inches with the use of a sand filter or other acceptable pretreatment unit.
4. Minimum separation is 36 inches from fractured rock, rock exceeding 50% by volume, or bedrock as measured from native grade.

5. Placement of the At-Grade system in areas that require the removal of large trees, boulders, or rock outcroppings is not permitted.

C. The following **design criteria** shall be used for At-Grades in addition to the most current edition of the Wisconsin At-Grade Component Using Pressure Distribution Manual for Private On-Site Wastewater Treatment Systems.

1. Linear Loading Rate (LLR)
   
a. Designers shall estimate the LLR for all proposed At-Grade systems and shall design the width dimensions and gravel dimensions accordingly, so that the distribution bed is long and narrow and on contour (Refer to Figure 13.4b).
   
b. When the depth to a limiting condition (e.g. impermeable soil layer or rock is only 36 inches (or 24 inches with pretreatment) the LLR shall not exceed 4 gallons/linear foot/day [refer to Table 13.2a and Figure 13.2d.]
   
c. If it can be demonstrated that the wastewater flow will be vertical as well as horizontal, a higher LLR may be proposed.

**Figure 13.4b At-Grade**

![Diagram of At-Grade System](image-url)
2. Soil Loading Rate

   a. The soil loading rate is to be based on the most restrictive soil horizon in contact with the distribution area. Use the percolation rate of the most restrictive soil horizon(s) and apply the corresponding sewage application rate (SAR) from Table 6.1.

3. Configuration (Refer to Figure 13.4b)

   a. The length of the gravel bed (B) shall be ≥ the design wastewater flow ÷ the LLR.
   b. The basal area shall be ≥ the design wastewater flow ÷ the SAR.
   c. The effective width of the gravel bed (A) shall be ≥ the design wastewater flow ÷ basal area length (B). In no instance shall the width of the distribution bed below and downslope of the lateral exceed 15 feet.
   d. Absorption bed depth

      i. There shall be a minimum of 6 inches of gravel below the distribution pile for residential systems with 2 inches of gravel cover over the pipe.
      ii. There shall be a minimum of 9 inches of gravel below the distribution pile for commercial systems with 3 inches of gravel cover over the pipe.

   e. Only single distribution beds are acceptable. Dual beds are not allowed.
   f. The gravel bed shall extend at least 2 feet above the uppermost distribution pipe lateral.

4. Aggregate

   a. 3/8 double washed pea gravel size to 2 inch double washed drain rock
   b. The percentage of fines of washed gravel shall not exceed 1% by weight.

5. Natural Contour

   a. The distribution bed shall explicitly follow the natural contour of the ground. The bed must be installed within a tolerance of 0.25 feet (3 inches) vertically per 100 feet horizontally.
   b. Distribution beds shall be angled or curved to meet this requirement.
   c. The distribution bed shall not be placed in a concave landscape position. See Figure 13.4b.

6. Reserve Expansion Area

   a. On parcels created before October 1971, a 100% reserve area is required.
   b. For commercial systems and parcels created after October 1971, a 200% reserve area is required.

7. Soil Cover

   a. A geo-textile synthetic fabric (Mirafi 140 N or equivalent) is to be placed over the aggregate bed.
b. 12 inches of soil covering after settling is to be placed over all aggregate. Additional depth of topsoil must be placed during the time of construction to assure that the minimum depth is achieved following natural settling of the soil.

c. Soil cover shall extend a minimum of 5 feet uphill and on both side of the gravel bed. Downslope soil cover shall conform to Table 13.4a.

**Table 13.4a At Grade Downhill Soil Cover Requirements**

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>COVER (lineal feet beyond gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2%</td>
<td>4</td>
</tr>
<tr>
<td>2-4%</td>
<td>6</td>
</tr>
<tr>
<td>4-6%</td>
<td>8</td>
</tr>
<tr>
<td>6-8%</td>
<td>10</td>
</tr>
<tr>
<td>8-12%</td>
<td>12</td>
</tr>
<tr>
<td>12-16%</td>
<td>16</td>
</tr>
<tr>
<td>&gt;16%</td>
<td>20</td>
</tr>
</tbody>
</table>

8. Distribution System

a. Total Dynamic Head Loss. Designers shall calculate the total dynamic head loss of the entire distribution system.

i. Vertical differences

ii. Length of entire piping system

iii. Loss of all valves, tees, elbows and appurtenances

iv. Head loss shall be referenced in feet of elevation

v. Distribution piping shall be Schedule 40 PVC or greater of at least three-quarter (3/4) inch diameter

vi. Hydraulic orifice discharge shall be a minimum of 60 inches for upward discharge. Orifices shall have a protective shield.

vii. Orifice spacing shall be a maximum of 36 inches on center (Closer spacing is preferred)/

viii. Size of orifices shall be 1/8"-3/16".

b. Balancing Valves and Purge Valves. System distribution manifolds shall have a balancing valve at the beginning of each pressurized line and a purge valve at the end.

i. All valves shall be protected and encased within plastic, concrete or other approved type box to provide easy access and maintenance. Metallic valves are prohibited.

ii. Box size shall be 10 inches across or larger, round or square, and must allow room for maintenance and/or to install stand pipes onto the ends of the purge valves.

iii. Balancing and purge valves shall be PVC Schedule 80 gate or ball type valves.
c. Perforated Pressurized Lines.

   i. One or two pressurized lines may be used in the At-Grade bed with the goal being to provide maximum distribution of wastewater along the length of the At-Grade. Where 2 lines are used, the distance between the lines shall be 24 inches.
   ii. The maximum length of pressurized lines shall be 75 feet.
   iii. The maximum distance between perforations shall be 36 inches. Where 2 pressurized lines are used the holes shall be staggered between the 2 lines.
   iv. Hydraulic orifice discharge shall be a minimum of 60 inches for upward discharge. Orifices shall have a protective shield.

9. Sump and Pump. Refer to Sections 8.3 and 8.4 for required sump and pump features. Note Automatic dosing siphons are NOT allowed in At-Grade sewage dispersal systems.

10. Sizing formulas for At-Grade systems. Sizing calculations for all At-Grade dimensions shall be provided with all proposals.

D. The **construction criteria** for At-Grade OWTS includes the following

1. The use of wheel type vehicles is prohibited.

   a. For the purpose of ripping
   b. When driving on any areas that have been ripped.
   c. When placing or moving the soil cover.
   d. At any time that the soil conditions are wet, moist, or saturated.

2. Placement of the pressurized transmission line from the sump tank to the At-Grade manifold shall be a minimum of 24 inches below the surface of the ground.

3. Site preparation of soil surface to a depth of 8 to 12 inches.

   a. Mow excessive vegetation

      i. Remove tress
      ii. Cut and grind stumps to a depth of 12 inches.
      iii. Perform initial ripping parallel to the contours of the ground and only within the limits of the gravel base; rippers set 8 to 10 inches apart. The interface of the native soil and the At Grade soil shall be ripped after the gravel has been placed and just prior to placement of the At-Grade soil cover.
      iv. Prohibit all traffic on any ripped surfaces until the full depth of gravel bed or cover material has been placed.

4. Gravel bed

   a. Temporary form boards are required to hold aggregate in place to construct the gravel bed.
   b. The temporary form boards shall be removed prior to placement of the soil cover.
   c. Place performance wells as specified in Section 13.4E
   d. Place aggregate in the designated tilled area to the appropriate depth as specified in D2 (3) above. Work from the upslope side and avoid compaction along the downslope side.
5. Construct distribution network prior to cover placement
6. Perform hydraulic test after the distribution has been completed.
   a. Pump must be adequate to provide hydraulic orifice discharge of a minimum of 60 inches upward discharge. Orifices shall have a protective shield.
   b. Distribution to all laterals shall be equal.
   c. This test shall be inspected by the consultant and the PRMD representative.

7. Place soil cover
   a. Place 2 inches (residential) or 3 inches (commercial) aggregate over the distribution network.
   b. Place geo-textile fabric over the aggregate. Extend only to the edge of the aggregate.
   c. Condition soil cover with sufficient moisture to permit track rolling to a firm cohesive surface.
   d. Rip area to be covered with cover soil.
   e. Place soil against the form boards by track rolling only. Remove the form boards.
   f. Place soil over entire gravel bed by track rolling and grooming by hand. Complete proper drainage work and erosion control measures before final inspection. Seed and mulch.

8. Establish the final grade of the At-Grade by track rolling and grooming by hand.
9. Install performance wells and details as shown on the plans.

E. The performance well criteria for at-grade OWTS include the following

1. A minimum of five performance wells shall be installed within and around the system.
   a. One performance well shall be installed 10 feet upslope of the upslope gravel bed at the system centerline for sloping sites. The well depth shall be 36 inches below original grade. If the system was designed for 24 inches of soil and utilizing a pretreatment unit, the well depths shall be 24 inches below original grade.
   b. Two performance wells shall be installed 25 feet down slope of the gravel toe at-grade at proportionate locations from the centerline. The well depths shall be 36 inches below original grade. If the system was designed for 24 inches of soil and utilizing a pretreatment unit, the well depths shall be 24 inches below original grade.
   c. If the hydraulic gradient cannot be determined on flat sites, two performance wells will be required on each side of the system installed 25 feet from the gravel toe at proportionate locations from centerline. The well depths shall be 36 inches below original grade or 24 inches below original grade if a pretreatment unit was utilized.
   d. Two performance wells shall be installed at the down slope toe of the gravel bed at proportionate locations from centerline at a depth of 24 inches. The depth of these performance wells shall extend to the gravel soil interface. The slotted/screen casing of the well shall extend through the entire depth of the gravel and the gravel (instead of sand) shall be placed in the annulus between the casing and the borehole. For long systems, at least one performance well shall be installed in each 75 feet of lateral. See Figure 11.6.
13.5 Shallow in Ground (SIG) OWTS

A. Shallow In-Ground Systems (SIG) utilize shallow depth trenches and pressure distribution methods of disbursal of effluent.

1. SIG systems are designed with the acceptable fill material as soil cover.
2. The fill or soil cover is placed in a manner similar to the PRMD requirements for Filled Land systems.
3. SIG systems are designed for sites that typically have shallow top-soils over slowly permeable or fractured subsoils on slopes up to 25%.

B. The site criteria for SIG OWTS includes the following

1. Percolation rate of 1 - 120 mpi for systems on slopes up to 25%.
2. Percolation rates faster than 1 mpi are unacceptable.
3. Percolation tests shall be at trench depth and at two and three feet below the trench depth, if necessary after soil profile review.
4. Visual field observations and soil texturing to identify any limiting conditions.
   a. Systems shall have a minimum depth of 36 inches of suitable soil beneath trench bottom and 36 inches from trench bottom to groundwater. These may be reduced to 24 inches if an approved pretreatment is used.
   b. The rock content (as retained in the #10 Sieve) shall not exceed 50% by volume within the first 24 inches of soil below trench bottom.
   c. Soils hydrometer and bulk density tests (Zone 1 or Zone 2 soils).
   d. Plasticity Index test results <20 for Zone 3 or 4 soils (ASTM D-4318-84 Atterburg Series).
5. System sizing shall be based upon soil morphology and average percolation rate, if that results in larger system. Refer to Sonoma County Percolation Test and Sizing Chart for non-standard systems recommended sizing.
6. Systems shall have a minimum separation of 36 inches to groundwater, fractured or impermeable soils beneath trench bottom and 48 inches to bedrock as measured beneath proposed trench bottom. Note that minimum separation may be reduced to 24 inches below trench bottom if acceptable pretreatment is used.
7. To maximize evapotranspiration pressure distribution systems as the SIG may not be installed below non-permeable soils such as high shrink-swell clays, highly compacted soils, and/or soils with massive or platy structures.
8. See Sections 12.1 and 12.2 and Table 7.2c for restrictions on use and other required setbacks.
9. Soil cover of 12 inches minimum is required.
C. The design criteria for SIG OWTS includes the following

1. See Section 13.3C Design Criteria for Pressure Distribution Systems.
   a. Refer also to the following standards.
      i. PRMD regulations for Filled Land Systems.
      ii. PRMD Mound Construction Regulations.

2. Trench Spacing
   a. Minimum of 8 feet on center for 0 to 12 ½% slope.
   b. Minimum of 10 feet on center for 12 ½ to 20 % slope.

3. Sand filter or other approved Pre-treatment units are required on sites with percolation rates faster than 5 mpi or slower than 90 mpi.
4. A dual system with an approved diversion valve shall be designed and installed for SIG systems.

D. The construction criteria for SIG OWTS includes the following

1. See Section 13.3D Construction Requirements for Pressure Distribution Systems.

E. The performance well criteria for SIG OWTS includes the following

1. See Section 13.3E Performance wells for Pressure Distribution Systems

13.6 Bottomless Sand Filter OWTS (Geographic Waiver)

A. A bottomless sand filter is a special case of an above grade gravel and sand-lined drain field. The process requires intermittent application of wastewater that allows an unsaturated downward flow through a filter media of an ASTM C-33 sand. The purpose of the sand filter is to pretreat the effluent and improve wastewater quality. The use of bottomless sand filters are adequate to allow substantial repairs and renovations to existing residences, provided there is no increase in the volume of sewage discharged.

B. The site criteria for bottomless sand filter OWTS includes the following

1. The sand filter will serve an existing structure located on the 100 year flood plain; and
2. The sand filter will be located at least 100 feet from the summertime banks of the waterway; and
3. The sand filter will be located on deep, well drained soils without elevated winter time water table levels and will meet all other setback requirements.
4. Under these conditions, a reduction or elimination of replacement area may be permissible.
C. The design criteria for bottomless sand filter OWTS includes the following

1. The design of bottomless sand filters is based on the April, 1999 Washington State Department of Health publication “Sand Lined Trench Systems.”

2. A support structure shall
   a. be designed and built so that the top of the liner is at least six inches above natural grade.
   b. on sloping sites a surface water diversion must be excavated upslope of the sand filter at the top of the sand filter backfill material.
   c. the containment vessel must be designed by a qualified engineer and have a support foundation to prevent vertical and horizontal movement of the vessel.

3. The bottomless sand filter must be installed into a minimum of 6 inches of native undisturbed soils and consist of the following components
   a. 24 inches of ASTM C-33 sand filter media, as determined by ASTM D-136 and C-177.
   b. A distribution bed consisting of 6 to 12 inches of gravel bed with pipe.
   c. An approved geo-textile followed by 6-12 inches of earth backfill.

4. Effluent distribution from the sump to the sand filter shall be
   a. Pressure transport. Manifold, lateral piping and fittings must be at minimum Schedule 40 PVC.
   b. Pressure transport piping shall be solvent welded. All joints in the manifold piping, lateral piping, and fittings must be solvent welded and watertight.
   c. A gate valve and check valve must be placed on the pressure transport pipe, in or near the sump tank, as appropriate.
   d. Pressure lateral distribution piping and fittings must be a minimum of 1 inch in diameter.
   e. Pressure manifold and transport piping must be a minimum of 2 inches in diameter.
   f. Hydraulic orifice discharge shall be a minimum of 60 inches for upward discharge. Orifices shall have a protective shield.
   g. Orifices must have a minimum 1/8 inch diameter and be placed a maximum distance of 30 inches apart.
   h. Ends of the lateral distribution piping must be connected with a blow off riser for cleaning and inspecting. The riser shall extend to the ground surface and have a threaded cap.
   i. The distribution lateral shall have 6”-12” of gravel beneath the pipe (residential and commercial respectively), 2 inches of gravel above the pipe and be covered with an approved geo-textile filter prior to placement of 6-12 inches of soil cover.
   j. The Sand Filter maximum dosage is 90 gallons per cycle. Electronic timed meters are preferred over float (on demand) type controls.
   k. The minimum setback requirements for bottomless sand filters are the same as those required for septic tanks.
D. The construction criteria for bottomless sand filter OWTS includes the following

1. Wooden containment vessels shall be constructed of pressure treated or redwood heart grade materials.
2. The sides of the above ground containment vessels shall be lined with a minimum thickness 30 mil PVC membrane liner.
3. The liner must extend up the sides of the support structure with enough excess to allow the liner to be firmly anchored.
4. All seams shall be factory heated or solvent welded.
5. A factory fabricated boot where the pressure line passes through the liner is required. The boot must extend into the box. All fittings must extend into the liner and be watertight.
6. Use of a non-woven needle punched synthetic geo-textile fabric in a thickness appropriate to protect the liner is required.
7. Both the filter media surface and the sand-original soil interface must be level.

E. The performance well criteria for bottomless sand filter OWTS includes the following

1. One or more performance well(s) shall be installed 10 feet upslope of the sand filter to a depth of 24 inches below grade.
2. One or more performance well(s) shall be installed 10 feet down slope of the sand filter to a depth of 24 inches below grade.
3. If the hydraulic gradient cannot be determined on flat sites, performance wells will be required on each side of the sand filter. One well shall be installed 25 feet upslope and one well installed 25 feet down slope of the sand filter. The depths of the wells shall be a minimum of 24 inches below grade.
4. On sloping sites, one or more performance wells shall be installed 25 feet down slope of the sand filter to a depth of 24 inches below grade.
5. One or more performance well(s) shall be installed in the sand filter to a depth of the upper gravel and sand interface.
6. One or more performance well(s) shall be installed in the sand filter to a depth of the lower sand and gravel interface. See Figure 11.6.

13.7 Subsurface Drip Dispersal OWTS

A. A subsurface drip dispersal OWTS is a pressurized wastewater distribution system that delivers small, precise doses of effluent to shallow subsurface dispersal/reuse fields. The distribution piping is small diameter flexible polyethylene tubing (dripline) with small in-line emitters that discharge effluent at slow controlled rates. A typical subsurface drip dispersal system installation includes a septic tank, supplemental treatment, a dosing chamber, pump(s), control panel, timed dosing and supply and return flow monitoring, particulate filter, filter backwashing and drip line flushing, driplines, and monitoring wells. A supplemental treatment system that reduces effluent strength to the Section 13.1 Pretreatment Units quality standards is required.
B. The site criteria for subsurface drip dispersal OWTS includes the following

1. Depth to a limiting condition and permeable soils (1-120 mpi) below the drip line bottom shall be a minimum of 24 inches.
2. The soil above the drip line proposed depth shall be permeable (1-120 mpi). This excludes massive or platy structured soils. Soils subject to flooding, excessive irrigation, farming practices, grading, ripping or roto-tilling are also not acceptable. The quality of acceptable soils above the dripline shall be equal to those below the dripline.
3. A minimum of 24 inches of permeable soil below emitter depth shall extend a horizontal distance of no less than 25 feet down gradient from the edge of the last proposed drip line, including expansion areas.
4. Subsurface drip irrigation system sites shall not exceed thirty (30) percent slope without an approved variance and a geotechnical study required for slope stability and suitability.
5. Subsurface drip irrigation system sites shall not exceed twenty (20%) percent slope when fill is placed over the drip system without an approved variance and a geotechnical study required for slope stability and suitability.

C. The design criteria for subsurface drip dispersal OWTS includes the following

1. Separation between emitter line laterals shall be a minimum of two (2) feet.
2. Dripline installations generally have emitters spaced 24 inches apart maximum and 12 inches minimum.
3. A standard drip system is typically installed 12 inches into native soil. A minimum native soil depth of 6 inches may be allowed with disinfection. The maximum soil cover allowed is 18 inches. (See Figure 13.7a).

![Figure 13.7a Drip Trench Cross-Section](image)
4. Soil application rates generally assume each emitter will wet an area of four square feet. However, this assumption is not valid in all soil types because the size of the wetted volume depends on soil characteristics and dosing cycles. Sizing of the subsurface drip dispersal system shall be based on both soil morphology and the percolation rate at the most restrictive horizon (See Table 7.2a for percolation rates). Designers shall clearly demonstrate the minimal square footage required as determined by the soil morphology and percolation rate. Perc tests may be waived for developed parcels in some circumstances.

5. The designer shall also determine the number of zones, the number of doses, the quantity of the dose, the head losses, spacing of drip lines, spacing of drip emitters, diameter of the drip tubing (typically 0.55” ID), pump size, location of air relief valves and the “frequency of flushes.”

6. Distribution zones shall be designed to be consistent with dripline manufacturer requirements. The length of each distribution line shall not exceed manufacturer’s specifications to insure equal distribution to each emitter. If multiple zones are designed, dosing must be automatically alternated between each zone.

7. All subsurface drip dispersal systems require an approved supplemental treatment unit for treating septic effluent and mechanical filtration with Vortex/Spin Filters or Disk Filters. The level of supplemental treatment must comply with NSF Standard 40 or to the satisfaction of the administrative authority, Section 13.1 (Pretreatment Units) or as specified by the manufacturer, whichever results in most improved effluent quality. Different subsurface drip dispersal products may require different levels of supplemental treatment.

8. Drip systems are “closed loop” networks with control valves and supply/return manifolds to allow for periodic line flushing (See Figure 13.7b). Required flushing velocity shall be a minimum of 1 foot/second.

Figure 13.7b Single Zone Schematic
9. Designer shall employ measures to prevent uneven distribution of the dispersal field due to drain down following a pump cycle. Per California Plumbing Code, spring check valves are not allowed for wastewater applications. (See Figure 13.7c for example of a top feed manifold.)
10. Provide 2 feet of solid tubing/pipe between the manifold and the drip tubing (See Figure 12.7d).

11. Air/vacuum release helps prevent soil particles from being sucked into emitters and is required on all drip systems. Air/vacuum release valve(s) must be installed at the high point of each distribution sector of the supply and return manifold. The air relief valves shall be equipped with Schrader valves in order to check pressure. These valves must be located in valve boxes with adequate room to attach a pressure gauge (See Figure 12.7e).
12. All system components (filters, control valves, air-vacuum relief valves, pressure regulators and controllers) shall be appropriately sized for the system dosing and flushing flow rates, and shall meet specifications of the drip line manufacturer (See Figure 13.7f for example of headworks). All transport piping, supply and return manifolds and fittings must be Schedule 40 PVC or Schedule 80 PVC if threaded fittings are utilized. All filters must be sized to operate at a flow rate greater than or equal to the maximum design discharge rate of the system including the field flush cycle.

Figure 13.7f Headworks
13. Filter backwash and line flushing debris must be returned to the septic tank or into the sump chamber.

14. Totalizing flow meters (in gallons) are required on the supply and return distribution lines. Flow meters must be installed in a readily accessible location for reading and servicing.

15. A controller capable of timed dosing and automatic line/filter flushing is required.

16. Disinfection of the treated wastewater shall be incorporated in cases of well-drained soils (<1 mpi or faster) or where drip dispersal systems only have a minimum of 6 inches of native soil cover above the drip line (see Figure 13.7g). If 6 inches of approved fill is added above the 6 inches of native soil cover, disinfection will not be required.

**Figure 13.7g Disinfection Unit**

17. On parcels created before October 1971, a 100% reserve area is required. For commercial systems and parcels created after October 1971, a 200% reserve area is required.

18. For aerobic treatment unit (ATU) systems that function with external blowers, a cutoff switch or interlock that disables the pump must be built into the control panel so the blower may not be disconnected.

D. The construction criteria for subsurface drip dispersal OWTS includes the following

1. Dripline can be trenched (by hand or with a trenching machine) into narrow, shallow trenches or plowed directly into the soil (with a vibratory plow or other insertion tool) and backfilled without gravel or geotextile.

2. To the extent possible, systems should be designed for the dripline lateral to follow the contour. However, whenever drip lines cannot follow the contour, distribution network
driplines with Pressure Compensating (PC) emitters shall be installed in grid patterns to accommodate irregularly shaped sites or landscape irrigation applications.

3. Valves must be readily accessible for service and/or inspection. All valve boxes must be protected from gopher soil movement. A detail of the valve box must be included on the plans. Specify concrete, hardware wire or similar bottom.

4. A ground cover (turf, fruit trees or other appropriate landscaping) must be planted over the dripfield after installation to provide additional treatment, prevent erosion and increase wastewater reuse through plant evapotranspiration.

5. Fill material may only be placed above native soil for soil cover, and shall not be used to meet required soil depth minimums. The system designer shall describe the type of fill to be placed in terms of texture and structure, the depth and method of ripping before placement. No part of the subsurface drip dispersal field may be located where the site slope exceeds twenty (20) percent when fill is used.

6. Owners should avoid activities that might damage the drip tubing or compact the soil.

7. After the #189 septic electrical inspection has been completed by the Building Inspector, a startup inspection must be scheduled with the system designer, installer, service provider and PRMD Well & Septic staff.

E. The performance well criteria for subsurface drip dispersal OWTS includes the following

1. A minimum of four performance wells shall be installed around the drip dispersal field.
   a. One performance well shall be located 10 feet upslope of the system to a minimum depth of 24 inches below the drip line depths.
   b. One of more performance wells shall be located 10 feet down slope of the system to a minimum depth of 24 inches below the drip line depths.
   c. Two performance wells shall be located 25 feet down slope of the system to a minimum depth of 24 inches below the drip line depths. See Figure 11.6.

Section 14 Non Standard and/or Commercial OWTS Operational Permit and Monitoring

A. All non-standard OWTS and commercial OWTS that meet applicable criteria of Sections 11 (Commercial), 12 (Experimental) or 13 (Alternative) OWTS criteria require the issuance and possession of valid Operational Permits pursuant to Sonoma County Code Sections 24-33 and 34 (see Appendix C).

1. Applications to construct non-standard OWTS must be accompanied by applications and fees for operational permits.
2. Operational permits are transferable subject to an ownership transfer fee.
3. An Operational Permit Easement Deed and Agreement is needed for the Easement property serving the residence or business.
4. A separate Easement Agreement to an Operational Permit OWTS Easement Agreement is required whenever a portion of the non-standard OWTS is located on a different parcel.
   a. If a property changes ownership within sixty (60) days of the issuance of the original Operational Permit, the permit may be transferred without additional fees. The anniversary date shall remain as per permit originally issued.
B. A recorded easement agreement is required for all OWTS subject to this Section. The purpose of easement agreements is to allow the associates and employees of PRMD and/or the RWQCB onto the properties to monitor and test the non-standard OWTS.

1. Primary and reserve test areas for non-standard OWTS are required to have the standard easement agreement recorded against the parcel before issuance of the sewage dispersal permit.
2. Easement agreements may not be removed from the title of the property unless authorized in writing by PRMD.

C. Monitoring forms will be provided by the PRMD to the property owner two times per year for recording information regarding OWTS operation.

1. Property owners shall complete the monitoring reports and submit them to PRMD within thirty days of receipt.
2. Failure to perform the self-monitoring program is cause for suspension of the Operational Permit.
3. Failure to provide access to the system area when requests for access have been communicated to the property owner is cause for revocation.

D. All Experimental or Alternative Non-Standard OWTS that include an approved Pretreatment Unit, permitted on or after the effective date of this OWTS manual are subject to inspection, maintenance and monitoring by an approved Service Provider for the life of the system. An approved Service Provider means a Registered Civil Engineer, Registered Environmental Health Specialist, or any person who is licensed as a certified on-site wastewater system inspector or other equivalent license by passing a state or nationally accredited test.

1. All Non-Standard OWTS permitted prior to the effective date of this OWTS manual will have the option of being permitted with an approved Service Provider, or remain as they are currently permitted.
2. A copy of a signed contract with the approved Service Provider, if applicable, a completed maintenance and monitoring inspection report shall be submitted to the Department with any application for a change of ownership.
3. Once a Service Provider is hired or upon change of ownership, the Non-Standard OWTS with a Pretreatment Unit will be required to have a Service Provider for the remaining life of the system.
4. All non-standard systems with TCOM/VCOM panels must have a qualified Service Provider for the life of the system.

E. All non-standard OWTS must be designed with a series of performance wells to sample for potential subsurface groundwater degradation. Performance wells are strategically placed up gradient, laterally, down gradient and within most non-standard OWTS.

F. PRMD may occasionally sample performance wells for total coliform bacteria, fecal coliform bacteria, and nitrates as indicators of the degree of sewage treatment and function of non-standard OWTS. The following are limits of maximum contaminant levels to analyze degree and function of nonstandard sewage dispersal systems.
G. Any non-standard OWTS that causes sewage to surface or discharge at ground level or any tank exfiltrating wastewater or infiltrating groundwater is deemed to have an adverse effect on surface water and is considered a public health hazard. It is defined as a failing OWTS. Such a system shall be immediately corrected or abated.

1. Sample results greater than 240,000 M.P.N. (most probable number) total coliform bacteria and/or a fecal coliform count greater than 2.2 M.P.N. exceeds the maximum contaminant levels and is deemed to have an adverse effect on subsurface water.
   
a. Such level of contamination as sampled from any purged performance well located 25 feet or greater down gradient from the dispersal field indicates a failing system.
   
b. Failing systems shall be corrected or abated.

2. Sample results exceeding 3,000 M.P.N. but less than 240,000 M.P.N. total coliform and/or less than 2.2 M.P.N. fecal coliform, do not exceed the maximum contaminant levels. However, these results define a non-standard OWTS as operating marginally.
   
a. The contaminant levels are results of samples that have been taken from any purged monitoring well located 25 feet down gradient from the dispersal field.
   
b. For the purpose of the Annual Monitoring Report, OWTS that show ponding of effluent within 12 inches of trench bottom (but do not exceed M.C.L.’s mentioned above) are defined as operating marginally.

H. PRMD is required by the RWQCB to monitor the operation and maintenance of all non-standard OWTS.

1. Inspection frequency may vary but is generally based upon a frequency of one inspection per year.
   
a. PRMD shall submit results of the monitoring inspections to the RWQCB in the form of an annual report for each calendar year.
   
b. PRMD shall notify the RWQCB in writing whenever the monitoring program is inadequately staffed.
Section 15 Vesting Certificates

15.1 General

A. The issuance of vesting certificates for approved OWTS plans and/or installed OWTS are intended to protect property owners from any potential future changes in OWTS regulations, during the effective term of the vesting certificate. Pursuant to Sonoma County Code Chapters 24-56 & 57 and 7-12 (Appendix C), the design and/or installed system must be in conformance with current codes and standards in effect at the time of vesting certificate approval, including proof of water in water scarce and marginal water areas (second dwelling units only).

15.2 Limitations

A. Vesting certificates for approved OWTS designs are valid for three (3) years from the date the vesting certificate is signed. Upon submission of a complete OWTS permit application within the three years, an OWTS permit shall be issued in accordance with the approved plans. Prior to permit issuance, a site visit shall be made to determine that no changes have occurred which may cause revocation of the vesting certificate.

B. Vesting certificates for installed OWTS are valid for two (2) years from the date the vesting certificate is signed.

C. Upon proper application for a Well & Septic Clearance for the residence within that time period, the clearance will be approved, provided the proposed dwelling does not exceed the design capacity of the OWTS and does not conflict with required setbacks to any feature of the OWTS.

15.3 Restrictions

A. Experimental systems and/or those systems subject to Waste Discharge Requirements (WDRs) from the Regional Water Quality Control Board are not eligible for vesting certification. Vesting certificates for OWTS subject to WDRs may be eligible if WDRs are waived by the Regional Water Quality Control Board.

15.4 Revocation

A. Vesting Certificates can be revoked in the following cases

1. It is found to have been based upon false or erroneous data.
2. Excavation, grading, or compaction of soils has occurred which would render the approved leach field area or expansion area unsuitable for a septic system.
3. The Regional Water Quality Control Board adopts a prohibition against waste discharges.
4. Further information shows that the proposed installation would create a gross public health hazard.
B. Alteration of Ambient Conditions

1. Construction of wells, waterways, cut banks, or roads have occurred that would affect the area's use for the leach field or reserve expansion area.
2. The County cannot deny a permit for a well within 100 feet of a vested area unless the septic system has actually been installed or a septic system permit issued.

Section 16 Subdivisions and Lot Line Adjustment Requirements

A. No approval of an application for a minor subdivision or lot line adjustment which necessitates use of sewage easements shall be granted. Each proposed lot must be demonstrated to have a site suitable for installation and expansion of an OWTS contained entirely within the proposed property lines of the lot.

B. Sewage easements for major subdivisions may be considered under the following circumstances

1. A homeowner’s association or other entity of dischargers empowered to conduct a program of regular sewage system monitoring, maintenance, and repair is created.
2. Easements are contained only within common lands of the subdivision.
3. Common areas are owned and controlled by the entity.
4. The easement for each lot is entirely separate and distinct from the easement for any other lot.
5. Use of easements is not used as a basis to allow lot sizes smaller than those specified in the County Subdivision Ordinance for lots with OWTS.
6. New applications for construction or repair of an OWTS shall be in accordance with these requirements.
7. The Project Review Specialist - Health shall be responsible for implementing regulations relative to subdivisions and lot line adjustments.

Section 17 Variance Requirements

A. Requests for variances of State and/or County regulations may be granted only when the Director of PRMD, or his/her designee, determines that the requested variance is consistent with the minimum standards for public health and water quality protection. Any variance request must provide a corresponding mitigation measure(s) or justification to assure that public health and water quality protection at least equal to that established by the rules, is provided.

B. Variances shall be considered only if no other reasonable alternative exists on the property. For undeveloped parcels, if suitable area exists to construct a system without variance, then no variance shall be granted.

C. PRMD shall review the variance request(s) for a site development, evaluating the proposed variance mitigation measure(s) for consistency with the public health/water quality protection intent of the OWTS standards.

D. The following are not allowed to be authorized in a Local Agency Management Program:
1. Cesspools of any kind or size.
2. OWTS receiving a projected flow over 10,000 gallons per day.
3. OWTS that utilize any form of effluent disposal that discharges on or above the post-installation ground surface such as sprinklers, exposed drip lines, free-surface wetlands, or a pond.
4. Slopes greater than 30 percent without a slope stability report approved by a registered professional.
5. Decreased leaching area for IAPMO certified dispersal systems using a multiplier less than 0.70.
6. OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections.
7. OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks.
8. Separation of the bottom of dispersal system to groundwater less than two (2) feet, except for seepage pits, which shall not be less than 10 feet.
9. Installation of new or replacement OWTS where public sewer is available. The public sewer may be considered as not available when such public sewer or any building or exterior drainage facility connected thereto is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises that abuts and is served by such public sewer. This provision does not apply to replacement OWTS where the connection fees and construction cost are greater than twice the total cost of the replacement OWTS and the local agency determines that the discharge from the OWTS will not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses.

E. There are two types of variances: Administrative and Formal.

1. Administrative Variances may be granted as part of an OWTS permit issued that meets the requirements of a Repair Permit or Upgrade Permit (see Sections 5 and 6) on a developed parcel and there is no increase in flow or change in use and the upgrade OWTS is no closer to the subject setback requirement than the existing OWTS.
2. Formal Variances are allowed on undeveloped parcels and developed parcels that propose an increase in flow (e.g. additional bedroom) that are subject to an Upgrade Permit and/or require the installation of an approved pretreatment unit to a standard OWTS or installation of an approved non-standard OWTS.

a. Only one Formal Variance of OWTS standards shall be allowed on an undeveloped parcel. Depth to groundwater and/or depth of soil beyond the one foot mitigation in lieu of soil allowed with an approved Alternative non-standard OWTS, is not allowed. The site must be able to meet all other standards set forth in the OWTS Manual.

b. A new OWTS on an undeveloped parcel shall meet the current sizing standards.

c. Multiple variances may be allowed on a developed parcel.

d. Justification for approval of a Formal Variance must demonstrate a clear and positive improvement over the existing OWTS (upgrade OWTS) and provide the most effective measure available to protect groundwater and/or surface water.
3. County approved pretreatment units are considered a Non-Standard Alternative OWTS (Section 13.1), either as an essential component of a Non-Standard OWTS or as an approved mitigation measure to a Non-Standard or Standard OWTS. A Variance request is not required for the addition of a pretreatment unit solely to mitigate one foot of soil to comply with the minimum 3 feet depth of soil and/or the depth to groundwater requirement. However, all Non-Standard OWTS and all Standard OWTS that require a pretreatment unit, to justify a reduced setback to a sensitive receptor are subject to this section.

4. Formal variance requests and subsequent OWTS plans shall be prepared by a Qualified Consultant (i.e. RCE or REHS).

5. The variance justification shall include the following
   a. soil type, according to the USDA Sonoma County Soil Survey
   b. Soil profile logs
   c. Preliminary OWTS design
   d. Floor plans, including existing bedrooms and number of bedrooms to be served

6. The acceptance of Formal Variance conditions shall be certified by notarized signature(s) of the property owner(s).

7. The accepted variance and conditions shall be recorded against the property in a form acceptable to the County Recorder Office.

8. The variance will be valid for a period of three (3) years from the date of approval.

9. If the approved OWTS has not been installed and the property is sold, the variance is not automatically transferable to the new owner.
   a. If the new owner can demonstrate that all conditions under which the variance was granted remain unchanged, the variance may be transferred, upon application by the new owner. In this case reinspection fee(s) will be charged, and the variance will expire on the date of the three (3) year anniversary of the reinspection approval.

10. The variance will become null and void if terminated by an act of law.

F. Typical variance items and approved mitigation measures approved are shown in Table 17.

G. Variance requests for undeveloped parcels and upgrades to existing OWTS that would result in a potential increase in flow are prohibited in areas identified in Section 18.

<table>
<thead>
<tr>
<th>Table 17 Minimum Requirements for Variance Requests</th>
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<td>Variance Specific Item</td>
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<td>Slopes &gt;30%</td>
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<td>Variance Specific Item</td>
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| 100 ft setback from leachfield to perennial watercourse    | 1. For developed parcels with no increase in flow, reduction to no less than 50 ft (setback will be the greatest possible and no closer than existing OWTS) with PRMD approved pretreatment unit  
2. For developed parcels with a proposed increase in flow, reduction to no less than 50 ft (setback will be the greatest possible and no closer than existing OWTS) with PRMD approved pretreatment unit and disinfection unit. |
| 50 ft setback from leachfield to ephemeral watercourse      | 1. For developed parcels, reduction to no less than 25 ft (setback will be the greatest possible) with PRMD approved pretreatment unit  
2. For undeveloped parcels, reduction to no less than 40 ft (setback will be the greatest possible) with PRMD approved pretreatment unit  
3. Or, existing piped watercourse to be encased in a watertight pipe with water tight joints  
4. Or, adequate protective site specific conditions existing, such as physical settings with low hydrogeologic susceptibility from contaminant infiltration (e.g. evidence of confining layer(s), watercourse upgradient) |
| 50 ft setback from septic tank or sump to perennial stream, ocean, lake or reservoir | 1. Waterproof surface barrier applied to concrete tank consistent with Manual of Concrete Practice ACI 515.1R  
2. Flexible rubber boots or compression seals meeting ASTM C 1173 used for inlet and outlet connections to provide flexibility in case of tank settlement while still maintaining watertight seal.  
3. An approved double wall fiberglass tank may be used in lieu of a concrete tank.  
4. Tank leakage test |
| 100 ft setback from well to leachfield                      | 1. Reduction of setback to 50 ft for existing wells on same parcel.  
2. New leachfield shall be no closer to the well than the leachfield that is being replaced (50 ft is a minimum, the setback will be the greatest possible).  
3. Provide an approved non-standard OWTS or an approved pretreatment unit on a standard OWTS. |
| Installation of OWTS in fill material                      | 1. Evaluation of structure and texture of fill material |
| Property line setback reductions                            | 1. Consultant and property owner clearly state in writing and on the approved OWTS plan that the location of the OWTS is clearly on his/her property.  
2. If there is disagreement and the location is no clear, a survey of the property line is required. |
| Structure(s) setbacks                                       | 1. A reduction to a setback to a non-structural cement slab, path, patio, pool deck can be approved provided the setback reduction will not interfere with the performance of the OWTS.  
2. Structural engineer certification that the tank or dispersal field will not impact the integrity of the structures foundation or cause pollution of the structure (e.g. pool, spa, pond) and that the access to the tank and dispersal field will not be impeded. |
| Installation of a Non-Standard OWTS in permeable soil below an impermeable soil lens | 1. Provide an approved pretreatment unit. |
Section 18 Variance Prohibition and Special Standards Areas

A. There are several areas in Sonoma County that are subject to variance prohibitions and/or special standard requirements. These areas include the following:

1. Camp Meeker
   a. Variance requests for new construction of structures on vacant lots and construction on existing structures that would result in an increase of flow prohibited.
   b. All applications approved by PRMD are subject to a condition that the structures involved will be connected to a community system when it becomes available.

2. Canon Manor Subdivision
   a. Permits/clearances for new construction of structures on vacant lots and/or construction on existing structures on OWTS that would result in an increase of flow prohibited.

3. Coastal Subdivisions of Carmet, Rancho del Paradiso, Salmon Creek, Sereno del Mar and the Community of Jenner
   a. Variance requests for new construction of structures on vacant lots and construction on existing structures that would result in an increase of flow prohibited.

4. Happy Acres Subdivision
   a. Lots of less than 30,000 sq ft unbuildable unless connected to the Happy Acres Water System.
   b. All standard OWTS with intercept drains shall be designed by a Qualified Consultant.
   c. If wet weather percolation testing required, no variances allowed.

5. Larkfield-Wikiup Area
   a. Septic system prohibition area Mayfield Dr., Ascot Dr., Fairly Dr., Eton Ct., Devon Ct.

6. Monte Rio
   a. Variance requests for new construction of structures on vacant lots and construction on existing structures that would result in an increase of flow prohibited.

7. Penngrove/South Cotati
   a. Variance requests of wet weather percolation requirements prohibited.

8. West Petaluma Area
   a. All lots subject to 7.5 and 7.11 wet weather percolation testing and groundwater determination requirements.
b. An interceptor drain shall be provided on all lots that have not had wet weather groundwater determinations (e.g. lots with slope > 5%).

c. Lack of a confining layer in which to bed an interceptor drain will result in the need for wet weather groundwater determinations.

d. Areas which exhibit spring activity or potential wintertime seepage shall be subject to wet weather groundwater determinations.

9. Russian River Meadows Subdivision Units 1 & 2 (aka Rein’s Beach)

a. Wet weather testing may be conducted when observed water levels ranges from 0”-12” below ground surface in the groundwater monitoring wells located on APN096-211-017 (22800 Conifer).

b. Except for the above noted provision, variance requests for new construction of structures on vacant lots and construction on existing structures that would result in an increase of flow prohibited.

10. South Wright Area

a. Variance requests for new construction of structures on vacant lots and construction on existing structures that would result in an increase of flow prohibited.

b. No permits and/or clearances for property improvement, land division or change in use. in the “septic tank ban area” shall be granted unless connection to sewer is included in the proposed application

11. Thomas Larkin Woods Subdivision Unit 1

a. Variance requests for new construction of structures on vacant lots and construction on existing structures that would result in an increase of flow prohibited.

12. Westvue Meadows Subdivision

a. Compliance with depth to groundwater requirements (without variance), required on all lots, regardless of slope.

B. Sonoma Creek is subject to the approved 2010 Pathogen TMDL Implementation Plan.

C. RWQCB Impaired Water Bodies for Pathogens subject to Tier 3 Impaired Areas

1. TMDL Completion Date 2016

a. Mainstem Russian River from Fife Creek to Dutch Bill Creek, Green Valley Creek watershed, Russian River at Healdsburg Memorial Beach and unnamed tributary at Fitch Mountain, mainstem Laguna de Santa Rosa, mainstem Santa Rosa Creek. (See LAMP Part 1, Appendix C and Part 3 Advanced Protection Management Plan).

2. TMDL Completion Date 2017

a. Petaluma River, Petaluma River (tidal portion).
D. Refer to Maps18.1-13 for areas subject to this Section.
Map 18.1 Camp Meeker
Map 18.2 Canon Manor
Map 18.3a Carmet
Map 18.3b Rancho del Paradiso
Map 18.3d Sereno del Mar/Gleason's Beach
Map 18.3e Jenner
Map 18.4 Happy Acres
Map 18.6 Penngrove/South Cotati
Map 18.7 West Petaluma
Map 18.8 Russian River Meadows
Map 18.9 South Wright Road
Map 18.10 Thomas Larkin Woods
Map 18.11 Westvue Meadows
Section 19 Dispute Resolution

A. In those instances when the findings and/or documents submitted by an Applicant are not approved by PRMD staff and differences cannot be resolved at the staff level, applicant may appeal the staff’s decision to the Division Supervisor. Appeal of the Supervisor’s decision shall be made to the Division Manager.

B. Pursuant to BOS Resolution 97-1098, if a resolution cannot be accomplished at the administrative level, the Applicant may have staff’s decision reviewed by a Dispute Resolution Panel (DRP). The Applicant shall prepare and submit appropriate documents, including the Dispute Resolution processing fee, to the PRMD Director. The Director will set a date for the review within five (5) days of the request.

C. The DRP shall be appointed by the Land Use Advisory Panel (LUAP) and consist of six (6) persons familiar with County policies and regulations one (1) RCE, one (1) REHS, one (1) licensed real estate individual, one (1) Class A General Engineering or C-42 Sanitation System licensed contractor, one (1) C-57 water well licensed contractor and one (1) citizen at large. A quorum of four panel members is necessary to convene a meeting and to vote on a recommendation.

D. The DRP is to review the materials submitted, offer an impartial analysis, and recommend approval or denial of the Applicant’s appeal. The DPR does not have the authority to modify or alter adopted standards. The PRMD Director will review the DPR’s recommendation before making a determination. The Director’s decision is final. The PRMD Director shall notify the Applicant and DRP members of his/her decision and the basis for the decision, within 10 working days of the hearing.

Section 20 Tier 3 Treatment, Monitoring, Inspection and Sampling for Supplement Treatment Units

This section addresses the treatment, monitoring, inspection and sampling requirements for supplemental treatment units subject to the OWTS Policy, section 10, that are located outside of the geographical area defined by either a TMDL implementation plan or an Advanced Protection Management Program.

A. Supplemental treatment units for pathogens shall be capable of producing effluent that meets the following effluent quality parameters:
   1. Less than or equal to 30 mg/L Total Suspended Solids as a 30 -day average.
   2. Less than or equal to 200 Most Probable Number per 100 milliliters for fecal coliform bacteria.

B. Supplemental Supplemental treatment units for nitrogen shall be capable of producing effluent that reduces the nitrogen levels 50% or more when comparing the 30-day average influent nitrogen levels t o the 30-day average effluent nitrogen levels.
C. Supplemental treatment units shall be monitored in accordance with the operation and maintenance manual for the treatment unit.

D. Supplemental treatment components shall be equipped with a visual or audible alarm as well as a telemetric alarm that alerts the owner and service provider in the event of a system malfunction. Where telemetry is not possible, the owner or owner’s agent shall inspect the system at least monthly while the system is in use.

E. Disinfection systems shall be inspected quarterly by a service provider for proper operation while the system is in use unless a telemetric monitoring system is capable of continuously assessing the operation of the disinfection system.

F. Sampling and analytical testing of disinfected effluent shall be conducted quarterly. The analytical testing shall be performed by a laboratory certified by the California Department of Public Health. The analytical test shall have a minimum detection level of 2.2 MPN. The effluent shall be tested for fecal coliform bacteria and total suspended solids. The location of the effluent sampling point shall be documented with geographic coordinates.
Appendix A Forms

Request for Well and Septic Service
WLS-006

PURPOSE: This form is used to request a paid service from the Well & Septic Division of the Permit and Resource Management Department (PRMD) related to an existing or proposed septic system. A permit application may be required following the requested service.

Date of Request ____________________ SEV Number ____________________
Site Address ____________________ Cross Street ____________________
City/Town ____________________ Zip ____________________
Applicant Name ____________________ Property Owner’s Name ____________________
Mailing Address ____________________ State/Zip ____________________
Day Phone ____________________ Day Phone ____________________
Service Requested:

________________________________________________________

DO NOT WRITE BELOW THIS LINE - To Be Completed by PRMD Staff

Code Enforcement Violation: Yes ☐ No ☐ Violation # ____________________

Status ____________________

Staff Comments/Notations

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

Staff Signature ____________________ Date Completed ____________________

Sonomas County Permit and Resource Management Department
2560 Venture Avenue ◆ Santa Rosa, CA ◆ 95403-3829 ◆ (707) 585-1100 ◆ Fax (707) 585-3999
sue.warren@sandco.wa.wa.us WLS-006 Request for Well and Septic Service.wpd 03/09/08
Application is hereby made to the Permit & Resource Management Department for a permit to construct or repair a sewage disposal system as described, in compliance with code of Sonoma County, for or clearance for other construction.

APPLICANT: PLEASE PRESS HARD (USE BLACK INK), FILL IN BETWEEN HEAVY LINES ONLY, SEE BACK SIDE FOR TERMS OF PERMIT

Building PERMIT #
SEP PERMIT #
EXISTING USE(S) ON SITE:

OWNERS NAME
MAILING ADDRESS  
CITY STATE ZIP
PHONE

INSTALLATION WILL SERVE:
EXISTING RESIDENCE
NEW RESIDENCE
REPLACEMENT RESIDENCE
SECOND UNIT
COMMERCIAL
REPAIR

SEWAGE DISPOSAL SYSTEM CONTRACTOR
ADDRESS
PHONE NO.

GENERAL CONTRACTOR

OWNER-BUILDER DECLARATION
I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7600) of Division 3 of the Business and Professions Code or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7601.1 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).

LICENSED CONTRACTOR'S DECLARATION
I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7600) of Division 3 of the Business and Professions Code, and my licenses are in full force and effect.

A SEPTIC PERMIT SHALL EXPIRE IN THREE (3) YEARS FROM DATE OF ISSUANCE UNLESS OTHERWISE NOTED BY CODE ENFORCEMENT.

THIS PERMIT IS LIMITED TO __________ DAYS.

CODE ENFORCEMENT

I certify that I have read the application and affirm under penalty of perjury that the above information is correct. I agree to comply with all local Ordinances and State laws relating to building construction. I hereby authorize representatives of the County of Sonoma to enter upon the above-mentioned property for inspection purposes. If, after making the Certificate of Exemption for the Worker's Compensation provision of the Labor Code is issued, violations of the law are found, then the permit shall be revoked.

SIGNATURE OF APPLICANT

WATER SUPPLY:
PUBLIC
PRIVATE

Worker’s Compensation Declaration
I certify that in the performance of the work for which this permit is issued, my worker's compensation insurance carrier and policy number are:

Center
code
policy

WARNING: FAILURE TO SECURE WORKER’S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE THOUSAND DOLLARS ($1,000). IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3700 OF THE LABOR CODE, INTEREST, AND ATTORNEYS’ FEES.

APPLICANT SIGNATURE

4 part NCR - all yellow
TERMS OF PERMIT

APPLICANT AGREES THAT:

1. PRMD ENVIRONMENTAL HEALTH SPECIALIST WILL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO COMMENCING WORK.

2. PRMD ENVIRONMENTAL HEALTH SPECIALIST AND ENGINEER’S OR CONSULTING ENVIRONMENTAL HEALTH SPECIALIST’S INSPECTION, WHEN INDICATED, WILL BE OBTAINED PRIOR TO COVERING THE SYSTEM.

3. A COPY OF THE APPROVED SEWAGE DISPERAL SYSTEM PLAN SHALL BE AVAILABLE AT THE JOB SITE AT ALL TIMES.

4. ANY DEVIATION FROM APPROVED PLAN WITHOUT PRIOR PRMD APPROVAL WILL BE CAUSE FOR STOPPING WORK UNTIL THE CHANGES ARE FULLY JUSTIFIED AND APPROVED.

5. THE SEPTIC TANK MUST BE I.A.P

6. M.O. APPROVED.

7. PRIOR TO AUTHORIZING OCCUPANCY OF ANY BUILDING WITH AN ENGINEER OR CONSULTING ENVIRONMENTAL HEALTH SPECIALIST DESIGNED SYSTEM, A SIGNED STATEMENT BY THE DESIGNER CERTIFYING THAT THE SYSTEM WAS INSTALLED IN COMPLIANCE WITH THE APPROVED PLAN MUST BE SUBMITTED TO PRKMD.

8. THIS PERMIT IS SUBJECT TO REVOCATION IF FOUND TO BE IN NONCONFORMANCE WITH THE SONOMA COUNTY CODE OR STANDARDS OF PRMD.

IT IS UNDERSTOOD THAT THE ISSUANCE OF A PERMIT IN NO WAY INDICATES A GUARANTEE BY THE COUNTY OF SONOMEA THAT THE SYSTEM WILL FUNCTION WITHOUT THE NEED FOR REPAIRS. THE OWNER IS REQUIRED TO MAKE ANY REPAIRS NECESSARY TO CONFINE SEWAGE BELOW THE SURFACE OF THE GROUND. APPROVAL OF THIS PERMIT IS BASED UPON INFORMATION SUBMITTED BY THE APPLICANT. FIELD CONDITIONS THAT VARY WITH THE INFORMATION SUBMITTED BY THE APPLICANT MAY CAUSE THE PERMIT TO BE VOID.
**Condition of Class II Private Sewage Disposal Repair Permit**  
**WLS-027**

**Purpose:** This form is to notify the applicant of the conditions under which a permit can be issued to repair an existing nonconforming sewage disposal system. Before a repair permit can be issued, the property owner is required to sign this form in the presence of a notary accepting the conditions applied to the permit.

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The proposed septic system repair meets the current Well & Septic Division Remodel and Repair Policy requirements for a Class II System (Best Available System, given site conditions & constraints). It does not meet all current code requirements that would apply to an undeveloped parcel or an increase in flow (e.g. bedroom addition). The repair has been authorized to allow continued occupancy of and improvements to the existing structure and in no way implies any guarantee of the work proposed or of the function, effectiveness or longevity of this repair. Inspection of the repair by this department will be to check proper installation only. The proposed repair permit will be issued upon acceptance of the conditions listed below.

The sewage disposal system is considered Conditional Class II and not code compliant due to the following reasons. There may be other site limitations that are not apparent at this time.

| Soil and groundwater conditions may impact proper septic system operation particularly during wet-weather conditions. |
| The size of the leachfield appears smaller than typical for this size house or for soil types in the area. |
| The installation does not conform to present code setbacks, specifically ______________________________. |
| Other: |

The issuance of this permit does not constitute recognition by the County of the legality of any structures on the parcel. Bedroom additions to structures served by this septic system cannot be approved unless the septic system can be brought into compliance with present Well & Septic Division Reutilization Policy criteria.

The use of low-flow toilets and other water conservation measures are strongly recommended to decrease the sewage flow to the septic system.

**Dated: ____________________________**  
**Conditions accepted by Property Owner(s):**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

**STATE OF CALIFORNIA, COUNTY OF___________________________  On this day __________________________ before me, ________________________________________________________________________________, Notary Public, personally appeared, _______________________________________________________, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

**I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.**

**WITNESS** my hand and official seal.

Signature ____________________________________________________________________________  (SEAL)
Condition of Class III Private Sewage Disposal Repair Permit
WLS-029

Purpose: This form is to notify the applicant of the conditions under which a permit can be issued to repair an existing nonconforming sewage disposal system. Before a repair permit can be issued, the property owner is required to sign this form in the presence of a notary accepting the conditions applied to the permit.

Permit Number

Site Address

City/Town State/Zip

Applicant

Property Owner (mail courtesy copy)

Assessor's Parcel Number(s)

The proposed septic system repair meets the current Well & Septic Division Remodel and Repair Policy requirements for a Class III System. It does not meet all current Well & Septic Division code requirements that would apply to an undeveloped parcel, an increase in flow (e.g. bedroom addition), a Rebuild or a Major Addition. The repair has been authorized to allow continued occupancy of the existing structure and in no way implies any guarantee of the work proposed or of the function, effectiveness or longevity of this repair. Inspection of the repair by this department will be to check proper installation only. The proposed repair permit will be issued upon acceptance of the conditions listed below.

The sewage disposal system is considered non-conforming due to the following reasons. There may be other site limitations that are not apparent at this time.

[ ] Soils evaluations and/or groundwater determinations have not been conducted. Soil and groundwater conditions may impact proper septic system operation particularly during wet-weather conditions.

[ ] The size of the leachfield appears smaller than typical for this size house or for soil types in the area.

[ ] A standard septic system design appears poorly suited for the site. An alternative design would be preferable.

[ ] The installation does not conform to present code setbacks, specifically______________________________

[ ] Other: ________________________________

The issuance of this permit does not constitute a recognition by the County of the legality of any structures on the parcel. Bedroom additions, substantial remodeling or reconstruction to structures served by this septic system cannot be approved unless the septic system can be brought into compliance with present Well & Septic Division Reutilization Policy and/or Remodel Policy criteria. The use of low-flow toilets and other water conservation measures are strongly recommended to decrease the sewage flow to the septic system.

Dated: ________________________________ Conditions accepted by Property Owner(s):

STATE OF CALIFORNIA, COUNTY OF ________________________________ On this day__________________ before me, ________________________________, Notary Public, personally appeared, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature ________________________________ (SEAL)

Sonoma County Permit and Resource Management Department
2550 Ventura Avenue • Santa Rosa, CA • 95403-2829 • (707) 565-1900 • Fax (707) 565-1399

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COUNTY OF SONOMA,
PERMIT AND RESOURCE MANAGEMENT DEPARTMENT
2550 Ventura Avenue, Santa Rosa, CA 95403-2829
(707) 565-1900 FAX (707) 565-1103

CONDITIONAL PRIVATE SEWAGE DISPOSAL PERMIT

Property Owner ____________________________
Property Address ____________________________
Parcel Number ____________________________
Permit Number ____________________________

On this date ________________, a permit was applied for at the Permit and Resource
Management Department for ____________________________, as a condition of issuance,
______________________________
______________________________
______________________________
______________________________
______________________________

Dated: ____________________________ Conditions accepted by Property Owner(s):

STATE OF CALIFORNIA  ss
COUNTY OF ____________________________

On ________________, before me,

Notary Public, personally appeared
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the
within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies),
and that by his/her/their signature(s) on the instrument the person(s), or the entity upon

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph
is true and correct.

WITNESS my hand and official seal.

Signature ____________________________ (SEAL)

Form B
(Attachment to Policy 1-4-1)
PERMIT CONDITIONS FOR NONSTANDARD SEWAGE DISPOSAL SYSTEM

Name: ____________________________________________________________

Mailing Address: __________________________________________________

City: ___________________________ State: ______ Zip Code: ____________

Site Address: ________________________________________________ ID No.: ____________

Please mark the appropriate box:

☐ Nonstandard Septic System
☐ Subsurface Drip Disposal System
☐ Septic System with Pretreatment Device
☐ Other: ________________________________________________________

NOTICE: The installation permit for the above nonstandard sewage disposal system is issued subject to the following conditions.

1. That the property owner(s) acknowledges the fact that the onsite wastewater disposal system serving the above property is nonstandard, that it is required to be operated under an Operational Permit, and that the County of Sonoma Permit and Resource Management Department (Department) makes no guarantee of satisfactory performance or warranty of the system.

2. That the nonstandard system for the above property is designed to serve a residential/commercial use (circle one) and, that the maximum peak daily wastewater flow is not to exceed _____ gallons per day, operating the system in excess of its maximum capacity in gallons per day is a violation of the terms and conditions of the Operational Permit which can be cause for the suspension and/or revocation of the permit.

3. That the system is designed to be constructed and operated with water saving devices and, that all such devices shall be properly maintained or replaced with equivalent types of water saving devices in the event that repair becomes necessary.

4. That, after installation and final approval of the nonstandard system, the owner agrees to monitor the system at the frequency required by the Department and/or the Regional Water Quality Control Board (RW QCB) on the self-monitoring forms provided by the Department. The forms require measurement of the depth to water in the monitoring wells, observance of the site and soil conditions, as well as indicating the close counter readings and volume of wastewater discharged to the nonstandard system. All required self-monitoring reports are to be submitted to the Department in a timely manner.

5. At a minimum of once a year, a sample from the sump tank will be tested for biochemical oxygen demand (BOD), total suspended solids (TSS), dissolved oxygen (DO), nitrate and total coliform, and fecal coliform, at the owner’s expense, on the County’s monitoring schedule. Test results must be submitted, with monitoring reports, at least once a year. This item to apply only when a subsurface drip disposal system or septic system with a pretreatment device is being installed.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

Recording fees waived pursuant to Government Code 6103
6. During the first 2 years of operation the property owner shall allow approved service providers onto the property for the purpose of performing routine maintenance on the septic system’s pretreatment unit. The service provider shall provide a semi-annual report to the county detailing the maintenance performed and any problems encountered. In order for the pretreatment unit to maintain the NSF 40 Standard a 2 year initial service policy is to be furnished to the owner by the manufacturer. The 2 years shall commence from the date the pretreatment unit goes into continuous operation. This item only pertains to septic systems with pretreatment units.

7. That the area shall not be planted with unacceptable plants, shrubs, trees, ornamentals, vegetative cover, and irrigation system over or too close to a Subsurface Drip (SD) system. All landscaping plans shall be reviewed by the Department. This item to apply only when a subsurface drip disposal system is being installed.

8. That the owners agree to inspect the SD system regularly as part of the monitoring program, especially checking for gopher strikes, damaged or torn SD lines and equipment. Only licensed and experienced professionals, C-36, C-42, or a licensed general engineering contractor shall install and/or repair damaged SD lines and equipment. This item to apply only when a subsurface drip disposal system is being installed.

9. That, in the event of malfunction of the nonstandard system, action will be taken by the Department to abate the failing operation as a public health hazard and nuisance. The cost of repair and/or replacement of the nonstandard system could be significantly more expensive than a standard system repair and is the responsibility of the property owner.

10. That all areas of the parcel held for reserve in which to replace the nonstandard system be protected from development, which would have an adverse effect or impact on the function of the system and/or the reserve area.

11. That the owner agrees to renew the required Operational Permit and pay fees annually as required by the Department as long as ownership of the site is retained or until such time the Department notifies the current owner that renewal is no longer necessary. Also, the current owner agrees to notify subsequent owners of this property of the above requirements to monitor and maintain the nonstandard system as well as the necessity to obtain and renew the Operational Permit.

Dated: ___________________________ Property Owner(s):

__________________________________________

STATE OF CALIFORNIA
COUNTY OF ________________________

On _______________ before me, ____________________________, Notary Public, personally appeared,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

__________________________________________

(SEAL)
RECORDED AT THE REQUEST OF,
AND WHEN RECORDED, RETURN TO:

County of Sonoma
Permit and Resource
Management Department
2550 Ventura Avenue
Santa Rosa, CA 95403

Recording fees waived pursuant to Government Code 6103

NO TRANSFER TAX DUE PURSUANT TO R&T SEC. 11922

EASEMENT DEED AND AGREEMENT

Preamble

This Agreement made this ______ day of __________, 20____, by and between

hereinafter referred to as "Grantor" and County of Sonoma, hereinafter referred to as "Grantee".

Recitals

WHEREAS, Grantor is the owner of certain real property commonly known as

in an unincorporated area of Sonoma County, State of California, hereinafter referred to as the "Servient
Tenement" and described as Exhibit "A" attached: (include full legal description and the Assessor's Parcel
Number).

Exhibit "A"
WHEREAS, Grantee desires to acquire certain rights in the Servient Tenement:

NOW, THEREFORE, it is agreed as follows:

Grant of Easement

1. For valuable considerations, grantor hereby grants to Grantee an easement as hereinafter described.

Character of Easement

2. The easement granted herein is an easement in gross, for purposes of ingress and egress pertaining to the use described below.

Description of Easement

3. The easement granted herein is a right to come onto the property of Grantor and to bring associates and employees of the County of Sonoma Permit and Resource Management Department and/or the Regional Water Quality Control Board onto the property more fully described in Exhibit "A" attached hereto and incorporated herein by reference.

Location

4. The easement granted herein is located as follows:

The entire Servient Tenement as described in Exhibit "A".

Use by Grantee

5. The easement granted herein includes the following use of the Servient Tenement: To come onto the property or accompanied as herein above set forth for the purpose of observing, testing, sampling, placing and removing of test devices and evaluating and monitoring Grantor's nonstandard individual sewage disposal system. Said activity shall be permitted on Servient Tenement only during normal business hours.

Exclusiveness of Easement

6. The easement granted herein is not exclusive.

Entire Agreement

7. This instrument contains the entire agreement between the parties relating to the rights herein granted and the obligations herein assumed. Any oral representations or modifications concerning this instrument shall be of no force and affect excepting a subsequent modification in writing, signed by the party to be charged.

Attorney's Fees

8. In the event of any controversy, claim, or dispute relating to this instrument or the breach thereof, the prevailing party shall be entitled to recover from the losing party reasonable expenses, attorney's fees, and costs.
Binding Effect

9. This instrument shall bind and inure to the benefit of the respective heirs, personal representatives, successors, and assigns of the parties hereto.

Operational Permit

10. The instrument shall bind and inure to the benefit of the respective heirs, personal representatives, successors, and assigns of the parties hereto.

The instrument shall include the issuance of an operational permit for a nonstandard sewage disposal system to be issued to the Grantor at the time of installation of said sewage system and subsequent use.

This operational permit shall be renewed on an annual basis by the current owners of the property, who shall be bound by all requirements and restrictions as set forth in Chapter 24 of the Sonoma County Code.

IN WITNESS WHEREOF, the parties hereto have executed this instrument the day and year first above written.

GRANTOR

Dated:__________________________  Property Owner(s):

______________________________

STATE OF CALIFORNIA  ) ss
COUNTY OF__________________ )

On ________________ before me, ____________________________, Notary Public,

personally appeared, ____________________________, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

______________________________  (SEAL)

Signature

S:\WELL\SEPTIC\Septic\Septic\Deed & Agreement\ASSEMENTAGREEMENT.wpd Updated 10/26/06

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Sec 4.10 (OWTS Site and Design Plan Requirements)

Sec 9.7 (Standard STPD OWTS), Sec 8.7 (Alternating Leachfields), Sec 10.6 (Performance Wells), Sec 8.1 (Septic Tank Requirements)

Sec 6 (OWTS Requirements for Approval of Building Permits)

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Sec 18 (Waiver Prohibition and Special Standards Areas)

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<td>Sec 56</td>
<td>Thomas Larkin Woods Subdivision</td>
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<td>Sec 57</td>
<td>Westvue Meadows Subdivision</td>
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Sec 18 (Waiver Prohibition and Special Standards Areas)
Appendix C Sonoma County Code References

Sec. 7-5. - Building permit required.

(a) No person, firm or corporation shall erect, construct, enlarge, alter, repair, move, improve, convert or demolish any building or structure in the unincorporated area of this county, or cause the same to be done, without first obtaining a separate building permit for each such building or structure as required by this chapter. Permits shall be issued and fees shall be collected by the permit and resource management department. The building standards for the work authorized by the new permit shall be governed by the codes in force at the time of the new permit application as described in Chapter 1, Division I, of the California Building Code as to the erection and construction of dwellings and appurtenant structures for which construction was lawfully commenced, commenced to legalize a violation, or approved prior to the effective date of this ordinance.

(b) Permits shall not be issued by the permit and resource management department for work which includes any of the following, unless and until written approval has been received:

(1) The construction, alteration or modification of:
   (i) Any on-site dispersal system (approval required from the well and septic section of permit and resource management department),
   (ii) Any water supply system which under state law or county ordinance is required to have a permit to operate (approval required from the health officer or the state health services department),
   (iii) Any establishment selling or preparing food or food products, any public or semi-public swimming pool as defined in the 2013 California Administrative Code (approval required from the health officer);

(2) The construction, alteration or modification of any structure which will result in the structure being connected to an on-site wastewater dispersal system or water system; (approval required from the well and septic section of permit and resource management department),

(3) The alteration or modification of any existing structure which is connected to an on-site wastewater dispersal system or water system requiring a permit, where the alteration or modification may impose additional burdens upon the existing system,
such as, but not limited to, the addition of rooms or the modification of floor plans for potential additional occupancy. This section shall not apply to repairs, such as replacement of roofing or siding. Where the permit is for modification or alteration of an existing structure, no permit will be issued where, in the determination of the chief building official, such modification is likely to result in exceeding the capacity of the system;

(4) The construction, alteration or modification of any structure which may result in the property being improved in excess of its capacity to absorb sewage effluent. This section is intended to cover any change in the property which might adversely affect sewage dispersal such as, but not limited to, grading or the construction of a barn or swimming pool which might infringe on the leach field (approval required from the well and septic section of permit and resource management department);

(5) For the purposes of this section, approval by the well and septic section of permit and resource management department shall mean either an office clearance, field clearance, or issued well and septic permit for on-site wastewater dispersal system.

(c) Whenever approval of the on-site wastewater dispersal system is required, it shall be based upon the requirements imposed by this chapter and any other state or local law or regulation which may be applicable, including basin plans and other standards promulgated by the North Coast Water Quality Control Board and the San Francisco Bay Regional Water Quality Control Board.

- Sec. 7-12. - Building permits in water scarce areas and second dwelling units in marginal water areas.

1. No building permit for new or replacement residential dwelling units shall be issued within the water scarce area four (4) or for new or replacement second dwelling units within the marginal water availability area three (3) where the water supply is from individual wells, public water wells, or springs unless the following requirements are met:

(a) That the well or wells yield a minimum of one (1) gallon per minute per dwelling unit by a sustained yield, metered pump test of the following duration:

   (1) Each dwelling unit is a connection to the well. Wells with one (1) to two (2) connections: test of twelve (12) hours or eight (8) hours in accordance with the Sonoma County Permit and Resource Management Department's well pump test guidelines,
Wells with three (3) to four (4) connections: test of twenty-four (24) hours or sixteen (16) hours in accordance with the Sonoma County permit and resource management department's well pump test guidelines,

(3)

Wells with five (5) to fourteen (14) connections: test of at least seventy-two (72) hours after the dynamic pumping level has been established. A reduction of the seventy-two (72) hour metered pumping test may be granted by the administrative authority if it is indicated that the sustained yield well production is two (2) or more times greater than required. Under no circumstances shall the test be less than forty-eight (48) hours.

(4)

Wells with fifteen or more connections and an operating permit from the California Department of Public Health shall comply with the applicable state water yield requirements.

(b)

That a minimum storage capacity shall be provided as follows:

(1)

Single-family dwelling (one (1) connection) — one thousand (1,000) gallons shall be provided in a storage tank, provided, however, that only five hundred (500) gallon storage shall be required if the yield is three (3) gallons per minute; provided further, however, that no storage is required if the well yield is five (5) gallons per minute, or greater,

(2)

Two (2) to fourteen (14) connections — one thousand (1,000) gallons shall be provided per connection, in a storage tank, or as required by the county of Sonoma water system standards, whichever is greater,

(3)

Wells with fifteen or more connections and an operating permit from the California Department of Public Health shall comply with the applicable state water storage requirements.

(4)

Note: These volumes are for domestic water storage. Additional storage volume is required for fire control.

(c)

The tests shall be conducted from July 15 to October 1. The test period may be extended by the director of the Permit and Resource Management Department. Pump tests shall be performed by or under the direction of a licensed water well drilling contractor (C57), pumping contractor (C61/D21), a registered civil engineer or a registered geologist who shall report test results to the director of permit and resource management department. The director of permit and resource management department shall be notified a minimum of twenty-four (24) hours prior to the pump testing of wells or springs;

(d)
That, if spring(s) are to be used as the primary domestic water source, yields and required storage capacity shall meet the same minimum requirements as for wells. Springs shall be perennial;

2. Notwithstanding Section 1., a building permit for new or replacement residential dwelling units may be issued within the water scarce area four (4) or for new or replacement second dwelling units within the marginal water available area three (3) if the permittee obtains an easement for water supply on a parcel that is entirely within a Groundwater Availability Area 1, major groundwater basin (Zone 1); or Area 2, major natural recharge area (Zone 2), in format approved by the permit and resource management department.

(Ord. No. 6048, § I(c), 11-5-2013; Ord. No. 5754 § 1(k), 2007; Ord. No. 5489 § 1, 2004; Ord. No. 5167 § 1(h), 1999; Ord. No. 4906 § 3, 1995.)

- Sec. 24-31.5. - Standards for on-site waste water dispersal systems.

The director of permit and resource management department may from time to time adopt and promulgate standards for on-site septic dispersal systems. Every proposed standard, proposed revised standard, or standard proposed to be rescinded shall be posted in the office of the Sonoma county clerk and in a public area of the permit and resource management department's offices for at least fifteen (15) days, together with a notice that the public may submit written comments for the director's consideration not later than the thirtieth day following posting of notice. The director of permit and resource management department shall consider comments submitted and may withdraw, adopt or rescind the standard or revised standard as proposed or as revised following the comment period. Adoption or rescission shall take place not less than fifteen (15) nor more than one hundred eighty (180) days following the close of the comment period, and each standard or revised standard adopted or rescinded shall be effective upon such posting. Such standards shall be periodically compiled and a copy thereof made available to the public at cost. Copies of such standards shall be available for review free of charge at the permit and resource management department. This section shall not be construed to impose any new or additional notice requirements for standards adopted by the director of permit and resource management department by any other procedure prior to the effective date of the ordinance codified in this section.


- Article II. - Private Sewage Dispersal.

FOOTNOTE(S):

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Former Sec. 24-31 through 24-42 repealed by Ord. 1563. As to building regulations generally, see Ch. 7 of this Code.
Sec. 24-32. - Nonstandard on-site wastewater dispersal systems—Definitions.

For purposes of this article, the following definitions shall apply:

(a) "Standard system" means a method of on-site sewage dispersal which includes a septic tank (with or without a sump and pump) by which method subsurface effluent is disposed of through leach lines which are constructed in accordance with Uniform Plumbing Code.

(b) "Nonstandard system" means any method of on-site sewage dispersal which does not use a septic tank or does not use standard leach lines for effluent dispersal.

(c) "Use" or "utilization" includes connecting or allowing a system to remain connected to a dwelling or other structure containing plumbing fixtures.

(Ord. No. 4330 § 1, 1991: Ord. No. 3293 § 1.)

Sec. 24-33. - Operational permit required.

(a) No person, firm, corporation or other entity shall use, or cause or allow the use of, any nonstandard system or a standard system for which monitoring is required as a condition of a permit or other grant of approval (hereinafter referred to as monitored system) within the unincorporated area of Sonoma County unless a valid operational permit is in effect for such use. Use of a nonstandard system without a permit or with a revoked permit is a public nuisance per se.

(b) The board of supervisors shall establish a fee or schedule of fees for operational permits, to be collected by the director of permit and resource management department. Where the system is of such design that inspection is not required by the health officer or by the regional water quality control board, the fee may be waived by the director of permit and resource management department.

(c) Upon payment of all fees and submission of an application which demonstrates to the director of permit and resource management department's satisfaction that the system will not have an adverse effect on ground or surface waters, or upon the public health, and no significant effect upon the environment, an operational permit may be issued for a period of one (1), two (2) or three (3) years. The director of permit and resource management department or his/her duly authorized representative shall determine the length of time an operational permit may be valid for each individual sewage dispersal system in accordance with departmental guidelines. The same standard shall govern both initial issuance of a permit and annual renewal. The director of permit and resource management department shall issue regulations governing application of the above
criteria to nonstandard systems. The term "adverse effect" shall be defined by the director of permit and resource management department, but shall include cumulative effects.

(d) The director of permit and resource management department or his duly authorized representatives shall be granted a right to come on to the property of grantor and to bring associates and employees of the regional water quality control board to inspect and to monitor the standard or nonstandard on-site wastewater system when needed. The right of access to the property to inspect and to monitor the standard or nonstandard system shall be conveyed to the county of Sonoma in the form of a recorded easement. The director of permit and resource management department or his duly authorized representative may release the easement upon determination that connection to public sewer is made or when determined the easement is no longer required as per Streets and Highways Code Sections 8300 et seq.

(Ord. No. 4906 § 5 (A) (part), 1995; Ord. No. 4330 § 2, 1991; Ord. No. 3293 § 2.)

- Sec. 24-34. - Revocation.

(a) If the director of permit and resource management department determines that a nonstandard system or monitored system for which a permit has been granted may have an adverse effect upon the ground or surface waters, or upon the public health, or may have a significant effect upon the environment, the permit shall be subject to a revocation fact-finding hearing. Notice of the time and place of the revocation fact-finding hearing shall be mailed to the permittee (i.e., the permit holder-of-record) setting forth the perceived public health hazard/environmental problem, possible causes, and possible county action in the absence of rectifying the health hazard/environmental problem. The hearing shall be conducted no later than two (2) weeks after the mailing of a notice of possible revocation of operational permit for nonstandard/monitored wastewater dispersal system. The notice shall provide the permittee an opportunity to attend a fact-finding hearing and indicate that failure to attend the hearing may be presumed to be an admission that the conditions believed to exist are true and correct as stated. The hearing shall be held no later than thirty (30) days from the date the notice is mailed. The permittee may request that the hearing be held at an earlier time than scheduled, as may be reasonable and convenient to the public director of permit and resource management department or his representative. Upon the dispatch of written findings that the nonstandard or monitored system poses a threat to public health and/or safety, and notice of revocation, the continued use of said system shall be unlawful and subject to abatement.

(b) Upon a reasonable suspicion by the director of permit and resource management department that the conditions in or around a nonstandard or monitored wastewater dispersal system may pose a serious and imminent threat to public health and safety, a temporary suspension of the operational permit may be ordered. Such summary revocation shall be followed within three (3) days by written notice of the action mailed to the permittee, setting a time for a written response within ten (10) days of the date of
mailing. This temporary suspension is in addition to the procedures set forth in subsection (a) and shall only be in effect until such time as the fact-finding hearing described above in subsection (a) is scheduled. At that time, the director of permit and resource management department shall determine whether there is good cause to revoke the operational permit. Failure to permit further inquiry into the condition of the nonstandard or monitored system, including access to the system site, shall be sufficient good cause to permit revocation of the operational permit.

(c)

A revoked permit may be reinstated if the director of permit and resource management department determines that a plan has been established for adequate repair, alteration and/or maintenance of the system, and all costs of enforcement, including attorney fees, violation reinspeccion fees and any of the costs described in Error! Hyperlink reference not valid. have been paid.


- Sec. 24-35. - Abatement.

In any action, judicial or administrative, to enforce any provision of this code relating to on-site sewage dispersal, the county may recover all of its costs of enforcement, including, but not limited to, any administrative overhead, salaries and expenses incurred by the following departments: public health, planning, county counsel, district attorney, building and/or public works. All such costs shall be a lien upon the property upon which the system is located.


- Sec. 24-36. - Provisions cumulative.

The provisions of this article are in addition to any other requirement for a permit for construction, alteration or repair of a septic system.

(Ord. No. 4330 § 5, 1991: Ord. No. 3293 § 5.)

- Sec. 24-37. - IAPMO listing and UPC certification mark required.

(a)

No person, firm, corporation or other entity shall sell for use in Sonoma County, install, or cause or allow such sale or installation of any septic tank (or container amenable for use as a septic tank but used as a sump, water tank or other water-tight receptacle) in Sonoma County after July 1st, 1989, that is not listed with the International Association of Plumbing and Mechanical Officials (hereinafter "IAPMO") as meeting the PS-1 design standard (or its successor) for septic tanks. Each septic tank sold for use in or installed in Sonoma County after July 1st, 1989 must bear the Uniform Plumbing Code certification mark which is provided by IAPMO to septic tank manufacturers in good standing. If an IAPMO listing is revoked, septic tanks of the revoked design manufactured on or
subsequent to the revocation date shall not be sold for use in or installed in Sonoma County until the IAPMO listing for the revoked design is reinstated. A UPC certification mark upon a septic tank will be regarded as conferring IAPMO approval of the design if the IAPMO listing was revoked after the septic tank's manufacture. Such tanks shall be presumed to meet the PS-1 design standard (or its successor).

(b) For purposes of this and succeeding sections, a septic tank is a water-tight receptacle which receives the discharge of a drainage system or part thereof, designed and constructed so as to retain solids, digest organic matter through a period of detention and allow the liquids to discharge into the soil outside of the tank through a system of open joint piping or a seepage pit meeting the requirements of the Uniform Plumbing Code.

Sec. 24-38. - Prohibited activities directly above a septic tank site.

No person, firm, corporation or other entity shall use or cause or allow the use of property above any septic tank (or container amenable for use as a septic tank but used as a sump, water tank or other water-tight underground receptacle) to support the weight of any object, including, but not limited to, motor vehicles, trailers, boats, improvements upon the property, construction materials, construction equipment, or any combination thereof, with a gross weight exceeding one thousand (1,000) pounds. Temporary weight loads in excess of what is permitted herein may be authorized by the Sonoma County permit and resource management department to the extent that adequate mitigating measures distributing the weight load upon the septic tank may be feasible and given prior approval by said agency.

Article III. - Cleaning Septic Tanks, etc.

Sec. 24-43. - Permit required.

No person shall engage in the business of cleaning cesspools, septic tanks, privies and vaults and the removal of the contents thereof within the unincorporated areas of the county without first having obtained from the health department of the county a permit to do so as herein provided by this article.

The term "engaging in the business of cleaning cesspools, septic tanks, privies and vaults and the removal of the contents thereof" as used in this article shall include but is not limited to any person who goes about from place to place with apparatus or equipment designed for cleaning cesspools, septic tanks, privies and vaults or who shall have an established place of business for such purpose and who shall make a charge for such services.
Sec. 24-44. - Same—Application.

All persons who desire to engage in the business of cleaning cesspools, septic tanks, privies and vaults and the removal of the contents thereof within the unincorporated areas of the county will make and file with the health department of the county a written application for a permit to do so.

(Ord. No. 219, § 4.)

Sec. 24-45. - Same—Investigation—Issuance—Fee—Bond generally.

It shall be the duty of the health department of the county, upon receiving an application for a permit as provided for by Section 24-43 to investigate the character of the applicant, the kind and type of apparatus and equipment he intends to use in cleaning cesspools, septic tanks, privies and vaults, the method of cleaning cesspools, septic tanks, privies and vaults and the place or places to which the contents of any cesspool, septic tank, privy or vault may be removed. If the health department is satisfied from such investigation, it shall issue a permit to the applicant upon the payment of a fee as established by resolution of the board of supervisors, and the giving of a personal or surety bond in the sum of one thousand dollars ($1,000.00) conditioned for the faithful performance of all duties enjoined by this article or the health department of the county.

(Ord. No. 2159 § 5; Ord. No. 219 § 5.)

Sec. 24-46. - Same—Term; renewal.

Any permit issued pursuant to this article shall be valid for a period of one year from the date of issuance unless thereafter revoked by order of the health department of the county as specified by this article, and any permit issued pursuant to this article may be renewed from year to year upon the filing of a written application, the payment of the fee and the giving of the faithful performance bond as provided for in Error! Hyperlink reference not valid..

(Ord. No. 219, § 7.)

Sec. 24-47. - Same—Permittees subject to rules and orders of health department; grounds for revocation.

Every person who obtains a permit as provided for in this article shall be subject to the rules and orders of the health department of the county in the following matters:

(a) The manner of cleaning any cesspool, septic tank, privy or vault.
(b) The removal of the contents thereof and the place to which such contents are moved.

If any person shall refuse to obey and carry out the rules and orders of the health department in the manner herein specified, such refusal to obey and carry out such orders and
rules shall be grounds for the revocation of the permit referred to and provided for in this article.

(Ord. No. 219, § 6.)

Sec. 24-48. - Action on bond upon violation of article, etc.

In the event that the holder of a permit issued pursuant to the provisions of this article violates any of the provisions of this article or any rules or orders of the health department of the county, such violation shall permit the county at its option to resort to the faithful performance bond for the payment of a penalty in the sum of one thousand dollars.

(Ord. No. 219, § 8.)

Article V. - Vesting Certificates.

Sec. 24-56. - General provisions.

Upon application by the owner of record, and upon payment of such fees as set by resolution of the board of supervisors, the director of permit and resource management department (“director”) shall review the application and may issue a transferable certificate vesting certain rights to run with the land subject to the conditions listed below.

The issuance of a vesting certificate is solely a right to construct a septic system and its issuance does not obligate any other department to issue a permit. The purpose of this article is to protect the certificate holder from subsequent changes in the law, thereby providing some degree of certainty for a limited period of time.

(a) Term of Vested Right to Construct System. Upon the director's approval of a private sewage design, a vesting certificate upholding the design shall be issued and remain void for a period of three years from the date the certificate is issued, or until the system is constructed, whichever is sooner. The certificate shall be valid only for the approved site, designated system type, and stated capacity.

(b) Term of Vested Right to Obtain Building Permit. A vesting certificate for a constructed system shall guarantee well and septic section of permit and resource department clearance of the subject parcel for issuance of a building construction permit for a term of two (2) years from date of final approval of the constructed system.

(c) Prohibition of Experimental and Innovative Systems. No site shall be vested for a system currently classified by the department's innovative systems regulations as experimental or innovative. Only sites suited for systems classified as alternative or standard may be vested.
(d) Recording. The permit and resource management department shall provide a certified copy of the vesting certificate to the property owner so that the property owner may record the document if desired.

(e) Prohibition of Systems Requiring Waste Discharge Requirements. No site shall be vested if the proposed septic system installation would require waste discharge requirements from the Regional Water Quality Control Board unless discharge requirements are specifically waived in writing by the Regional Board.


Sec. 24-57. - Revocation of vesting certificate.

The certificate may be revoked by written notice from the director explaining the reason(s) for revocation upon determination that:

(a) The application for the certificate or its issuance was based upon erroneous or false data;

(b) Excavation, grading or compaction of soils has occurred which affect the soil depth, ground slopes or soil percolation rate, whether on the subject or adjoining parcels;

(c) Construction or alteration of wells, water impoundments, water channels, roads, cutbacks or fills has occurred within setbacks that were established by rules in effect as of the date of the original certificate, whether on the subject or adjoining parcels; or

(d) It is necessary, based on the discretion of the director, to protect the health and safety of the people of Sonoma County, and/or is necessary to prevent a significant adverse impact on the environment;

(e) There has been an adoption of an area wide prohibition of waste discharge or adoption of a prohibition of specific types of discharges by the Regional Water Quality Control Board.

(Ord. No. 5004 § 1, 1997: Ord. No. 4629 § 1, 1993.)

Sec. 24-58. - Procedure to appeal revocation.

(a) The owner may appeal the revocation of a certificate by setting forth the reason(s) in writing, why such revocation is unjust. The appeal must be submitted to and received by the field operations manager of permit and resource management department within fifteen (15) days from the notice of revocation.
(b) The field operations manager of permit and resource management shall respond, in writing, within fifteen (15) days after receipt of the appeal, either by upholding the revocation or granting the appeal.

(c) If the field operations manager of permit and resources management department upholds the revocation, then the owner may appeal to the director of permit and resource management department, pursuant to the procedures set forth in subsections (a) and (b) of this section. The decision of the director of permit and resources management department shall be final, subject to the provision of California Code of Civil Procedure Section 1094.5.


Sec. 25-17. - Standards for approval.

(f) (1) Minimum lot size shall be one and one-half acres where individual sewage disperal and water supply systems are necessary, unless the size and shape of the site and surrounding parcels allow for a lesser lot size. Minimum lot size shall be one (1) acre where individual sewage disperal systems are necessary but water is available from an approved public water system. These lot sizes are exclusive of rights-of-way and/or easements. In either case, there shall be sufficient area on the parcel to accommodate a private sewage disperal system for a typical three (3) bedroom house plus unencumbered area to expand or replace this system by two hundred percent (200%);

(2) Evidence shall be provided of suitable soil percolation characteristics to meet current criteria of the Sonoma County public health service and the basin plan of the appropriate Regional Water Quality Control Board. Some parcels require testing during the official "wet-weather" season;

(3) Leachfield areas must be located a minimum of one hundred feet (100’) horizontally from the contour of the ten (10) year flood elevation of perennial waterways and fifty feet (50’) horizontally from the top of bank of ephemeral waterways or drainage courses;

(4) Leachfield areas shall be a minimum of one hundred feet (100’) from existing or proposed well sites, springs, seepage areas, oceans, lakes, or reservoirs. The presence of springs, seepage areas, or shallow water tables may necessitate approval of the proposal by a registered geologist or certified engineer geologist;

(5) On parcels where drainage may adversely affect septic field function, an approval by a registered civil engineer and/or provision of drainage easements may be required;

(6) Leachfields shall be located to avoid areas of land slippage or instability and shall not be placed in areas where land slippage or instability could be induced or accelerated
by leachfield discharge. In areas designated potentially unstable, an analysis by a registered or engineering geologist will be required;

(7) Additional conditions necessary to supplement those established for the tentative map to ensure compliance with sewage dispersal regulations prior to filing the final map may be required by the project review and advisory committee;

(8) Preliminary percolation testing and soil profile analysis will be required on major subdivisions prior to filing the tentative map in order to determine whether the proposed density and lot design are feasible. Reports on at least one (1) percolation test hole per lot and one soil profile hole per five (5) lots must be submitted. Soil profile holes may be reduced in conformity to a given soil type can be established. Additional testing will be required prior to filing the final map to substantiate suitable dispersal areas;

(9) Location of leachfields shall not be on slopes of greater than thirty percent (30%).
Appendix D Sonoma County Policies and Procedures

Permit and Resource Management Department
POLICY AND PROCEDURE

Number 1-4-1

Definition of Bedroom

PURPOSE

This policy is intended to provide guidance to PRMD staff when reviewing permit applications, checking plans, investigating complaints and inspecting buildings as to the approved intended use of a room. These guidelines will be used by all staff in determining whether a room will be considered a bedroom (sleeping room).

GENERAL

The Zoning Ordinance, the California Building Code and PRMD regulations relating to septic systems contain various definitions of bedrooms. This policy will provide a uniform interpretation for all of these codes.

AUTHORITY

Chapter 7. Sonoma County Code
California Building Code

FORMS

A. Conditional Statement Acknowledgment
B. Notice of Use Restrictions

PROCEDURE

A. Definitions

1. Attached room: Rooms will be considered to be attached to and part of a dwelling unit if they are connected by a common wall, or by a common roof, covered walkway, carport or garage, not more than twenty feet (20’) wide.

2. Bathroom (full bathroom): A room equipped with a toilet, sink and shower or bathtub.

3. Half bath: a bathroom which contains a toilet and sink but does not contain a bath tub or shower.

4. Bedroom: any space in a dwelling unit or accessory structure which is 70 square feet or greater in size and which is located along an exterior wall, but not including the following: hall, bathroom, kitchen, living room (maximum of one per dwelling unit), dining room (in proximity to kitchen, maximum of one per dwelling unit), family room (maximum of one per dwelling unit), laundry room, closet/dressing room opening off of a bedroom.

The Director of PRMD or his/her designee may grant exceptions if a room, by its design, cannot function as a bedroom. Sewing rooms, dens, studios, lofts, game rooms, and any other conditioned room along an exterior wall which is 70 square feet or greater in size will be considered to be bedrooms unless the room is specifically exempted. If a home office, library

Effective: 8/15/14
or similar room is proposed, it may be exempted from being considered a bedroom if there is no closet and at least one of the following is present: a) permanently built-in bookcases, desks and other features that encumber the room in a way that it cannot be used as a bedroom; b) a minimum 4 foot opening, without doors, into another room; or c) a half-wall (4 foot maximum height) between the room and another room. A detached building which contains only a half bath will not routinely be considered as having a bedroom unless it is specifically identified and permitted as a guest house.

When an exception is made per the above, it shall be documented in Permits Plus in the comments section so that all staff are aware of the determination. A conditional statement may be required to be signed by the property owner if the permit is for an outbuilding which has been determined to be a use other than a bedroom or other living space. This statement may be recorded as necessary to inform future property owners of restrictions on use of the building.

5. Conditioned space: An area, room or space normally occupied and being heated or cooled by any equipment for human habitation.

B. Applicability

1. All PRMD staff shall use the above guidelines in the course of their work. Any differences in interpretation shall be brought to the attention of the Director or designated supervisory staff, who will render a decision as to interpretation.

2. If an applicant desires to convert a structure from one use to another, the above guidelines shall be used as appropriate. Any modifications needed to the structure to effect a change of use shall be permanent and shall effectively remove any infrastructure associated with the original use of the structure.

3. In most cases, an accessory structure with a full bathroom will be considered as having a bedroom or bedrooms. The Director of PRMD or his/her designee may approve a full bath if necessary for agricultural or other purposes. Sufficient sewage disposal capacity must be available for the bathroom. If a full bath is approved, a conditional statement will be required to be signed by the property owner stating that the accessory structure is not approved as a dwelling unit and any use other than the approved use may constitute a violation of County Code. The conditional statement shall be recorded with the property deed.

ATTACHMENTS: None

Approved by:

/s/ Tennis Wick
Tennis Wick, Director

Lead Author: Rich Holmer, Ben Neuman, Patrick Mullin
Package Treatment Plant Policy and Procedure

PURPOSE

There has been increased interest in the use of package treatment plants for new development proposals in the County. Current review procedures are not presently clearly defined.

This policy is intended to provide guidance to all staff when an application is submitted for a commercial, agricultural or industrial use which proposes the use of a package sewage treatment plant for domestic sewage disposal in cases where such plants are consistent with the General Plan. This policy will guide the environmental (CEQA) and technical review of projects which involve the use of a package treatment plant for sewage disposal.

GENERAL

A. Definition

A package treatment plant is a method of sewage treatment which uses a process involving energy and mechanical, biological, chemical or physical treatment of the wastewater to reduce Biological Oxygen Demand (BOD), suspended solids (SS), nitrogen (N), bacteria and other sewage constituents and which is of a degree of complexity that a certified wastewater treatment plant operator is required. It includes any proposal to use wastewater in a manner subject to Title 22 wastewater reclamation standards. It also includes any treatment unit other than a septic tank which processes more than 1500 gallons of wastewater per day. It does not include systems which process wastewater originating solely from agricultural uses, retail food facilities or storm water if these systems do not include any domestic wastewater component.

B. Restrictions on use

Package treatment plants cannot serve multiple uses on separate parcels under separate ownership unless the Board of Supervisors approves specific findings for multiple ownership of sewage disposal systems. (General Plan Policy PF-11) Package treatment plants can serve multiple uses on a single parcel.

AUTHORITY

1. Policy PF-11 of the Sonoma County General Plan which states:
   "Consider approval of new wastewater management systems in unincorporated areas..."
only when it is necessary to resolve an existing public health hazard. Avoid new small wastewater treatment systems which serve multiple uses under separate ownership on separate parcels.”

2. California Plumbing Code Section 305.2 and 713.1
3. Sonoma County Code, Chapter 7

PROCEDURES

A. Submittal requirements for permit applications (generally in conjunction with a discretionary permit application)

Note: If a discretionary project proposes the use of a package treatment plant, it must be clearly stated as part of the application and must include the following information:

1. The submittal request for a package treatment plant must be prepared by a Registered Civil Engineer with documented experience in the design of treatment plants (minimum of 5 years of experience in sewage treatment plant design or resume with 5 similar projects).

2. A full description of the collection and treatment shall be provided. This shall include a discussion of the proposed method of treatment, disinfection, filtration, and other treatment process components. A description shall be provided of the level of treatment to be obtained and shall include, without limitation, projected levels for BOD, SS, N, total and fecal coliform, phosphorous, oils and grease and other characteristics both before and after treatment of the wastewater as well as any other information required by Permit and Resource Management Department (PRMD). The description shall include the need for sludge removal (frequency and quantity of sludge removal, method of storage, method of transport and method of disposal), energy use and a detailed discussion of compliance with Title 22 standards.

3. A full description of the proposed wastewater disposal method shall be provided. This shall include an evaluation of soil conditions, groundwater conditions, groundwater movement, proximity to beneficial water uses such as wells, streams and drainage courses and consideration of contaminant travel in both ground water and surface water. The person performing this evaluation shall calculate the needed amount of wastewater storage and shall include a water balance that addresses proposed sewage volumes, rainfall, evaporation, acceptable discharge times and maintenance of freeboard in storage units. The land area necessary for the disposal system shall be calculated and identified on a site plan of the proposed development. If cut and fill is necessary, these shall be indicated on the plot plan together with identification of any off-site spoil disposal areas.
This plan shall identify routine monitoring of the structural integrity of the pond, monitoring of freeboard, control of weeds and algae and control of vectors.

B. Environmental Review of Package Plants for CEQA Compliance or for Review of Referrals from Other Agencies. Compliance with CEQA will require either an Initial Study/Negative Declaration or an Environmental Impact Report. The environmental document for the project must address all of the impacts of the project and must include any information necessary for PRMD to complete a review of the proposed package treatment plant. The following impacts are especially relevant to package treatment plants and analysis of these impacts shall be included in the environmental document:

1. Projected treatment levels need to be substantiated by an independent testing authority and documented experience under conditions similar to Sonoma County (including climate).

2. Noise. Operational noise impacts to neighboring residences with specific decibel readings submitted for equipment to be used, projections of noise levels to be expected at the property line(s) and at residences which may be impacted by increased noise levels, measurements of current night and day ambient sound levels at impacted residences and analysis of the project’s compliance with the General Plan noise standards.

3. Odors and other air quality issues—including a description of wind directions, inversion conditions, likely impacts on nearby receptors and odor control methods.


5. Visual. An analysis of potential visual impacts of the treatment plant, ponds and irrigation areas particularly with respect to scenic corridors.


7. Geological and seismic stability of the treatment and disposal areas.

8. Potential health effects including a determination of source water protection areas for public water systems.

9. Groundwater protection including contaminant movement, changes in volume or quality of groundwater and analysis of potential discharge points for treated wastewater.
10. Alternative methods of sewage disposal. Complete description of all alternatives for the project including development of an on-site septic system, other types of treatment methods, development of off-site sewage disposal systems and connection to a public sewer system.

11. The size of the proposed package treatment plant must be considered in relation to potential growth inducing impacts.

12. Aerosols. Droplet sizes that will be generated, distance of travel of droplets, wind speed and wind direction.

13. Hazardous materials. Materials to be used in the treatment process and cleaning of treatment equipment including proper handling, storage and disposal.

14. Sludge disposal. Volume of sludge generated, location of on-site storage, frequency of removal, haul routes and volume to be hauled off-site.

15. Cumulative impacts.


17. Biological impacts including bird attraction.

18. Consultation with other affected agencies including Regional Water Quality Control Boards, Fish and Game, Coastal Commission, and nearby cities shall be described in the environmental document. The environmental document shall include sufficient analysis of impacts and mitigation measures to allow the other agencies to use it for CEQA compliance when they issue their permits for the project.

C. Typical Conditions of Approval for a Package Treatment Plant.

1. Plans for the treatment and disposal facilities shall be prepared by a Civil Engineer registered in the State of California. An independent engineering consultant acceptable to PRMD shall perform peer review of the plans at the applicant’s expense. The design engineer shall inspect the construction and shall verify that construction was completed according to plans. Prior to any use of the treatment plant, a final letter shall be submitted to the County from the design engineer approving use of the treatment plant and verifying that it is in compliance with all State and local requirements.
2. The wastewater collection system shall be constructed in accordance with Sonoma County requirements for public sewage collection systems (County of Sonoma Sewage System Standards as adopted by Chapter 24, Sonoma County Code). A permit to construct the collection system shall be obtained from PRMD prior to the start of any construction of the collection system.

3. All applicable county permits shall be obtained for the treatment and disposal facilities including grading, electrical, and plumbing permits.

4. Prior to obtaining building permits for any portion of the project, Waste Discharge Requirements shall be obtained from the appropriate Regional Water Quality Control Board.

5. The long term managerial and financial needs for the package treatment plant shall be fully determined. This shall include characterizing the persons responsible for maintenance and monitoring, their qualifications, training requirements and the expected costs of these activities. A 10-year financial plan for operation, maintenance and repair of the treatment plant shall be prepared and submitted to PRMD which includes depreciation of equipment, expected replacement times for equipment components and the financial reserves necessary to meet these operational issues.

Prior to issuance of building permits, deed restrictions shall be recorded specifying the conditions under which the package treatment plant was approved including the maintenance, management and financial obligations outlined in the 10-year financial plan.

6. No permanent occupancy of any phase of the project shall occur until all of the wastewater treatment plant and disposal facilities have been constructed, approved by the design engineer, accepted by the Regional Water Quality Control Board, approved by Sonoma County PRMD and properly trained and licensed staff are available for operation.

7. The package treatment plant shall be operated under a valid Sonoma County Operational Permit in accordance with an approved monitoring plan.

8. Use of the facility shall cease if either the Waste Discharge Requirements or the Sonoma County Operational Permit is revoked.

9. Prior to issuance of building permits, an emergency plan shall be developed that addresses the availability of back-up personnel and actions to be taken in the event of treatment plant failure, pond rupture or overflow, effects of seismic events, unusual
permit and resource management department

policy and procedure

climatic conditions, and other similar events.

10. A pond maintenance plan shall be submitted, if ponds are provided.

11. All mitigation measures specified in the environmental study shall be implemented as conditions of the project.

12. A covenant shall be recorded with the deed to the property stating the conditions of approval of the package treatment plant and the long-term technical, managerial, and financial requirements for operation of the plant.

13. Connection shall be made to public sewer if and when it becomes available. Public sewer will be considered as being available if: (1) the parcel is in a sewer service area or the connection to the sewer is otherwise determined to be consistent with the General Plan and (2) public sewer collection facilities have been constructed in a right of way or thoroughfare abutting the premises and (3) the collection system is located within 200 feet of any building served by the package treatment plant or within 200 feet of any part of the sewage treatment/disposal system, and (4) the public sewer system has capacity for the discharge from the premises.

14. Any other conditions determined by staff or the decision making body as being appropriate to the specific project.

attachments

none

approved by:

/s/ Pete Parkinson

Pete Parkinson, Director

lead author: Rich Holmer

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Detached Residential Accessory Structures

PURPOSE

Detached structures accessory to single family dwellings can contribute to the use and enjoyment of residential properties. These structures come in many variations ranging from one story detached garages, workshops, art studios, pool house, to barns, two story structures with a garage on the bottom floor, large vehicle storage buildings, etc. This wide variety of proposed uses can raise many questions in the review and approval process in terms of use and occupancy. The purpose of this policy and procedure is to clarify the applicable building, zoning and septic requirements based on the physical features of the structure and its highest and best use, regardless of the labeling or intended use of the structure when applying for a permit for such structures.

GENERAL

1. It is critical to be aware that building, zoning and septic regulations classify uses and structures using similar nomenclature, but not always with the same exact meaning. This policy references building occupancy classifications as defined in the California Building Code, zoning terms as defined in the Zoning Code and septic terms as defined in PRMD Septic Policies.

2. The type and occupancy classification of residential accessory structure shall be determined by staff based on the physical features of the structure and highest and best use of the building as described in the attached Table Types of Detached Residential Accessory Structures. The Type of accessory structure as determined by staff shall be properly labeled on the plans and in any permit issued by PRMD. Staff shall take into consideration any zoning or use permit issued to a property that allows for public uses when determining the highest and best use of a building.

3. Building codes require that all habitable spaces within a dwelling be conditioned (heated and/or cooled). Accessory structures may contain living space, but conditioning is not required for these structures except for second dwelling units and guest houses. Conditioning of accessory structures may be included at the option of the owner. All conditioned and unconditioned spaces are required to meet the requirements of the California Energy Code. All plans shall indicate whether or not the structure is conditioned. Whether an accessory structure is conditioned or not does not determine the occupancy of the structure.

4. Separate electric meter service is not allowed for residential accessory structures with exceptions for second dwelling units, and garages with a dedicated service for electric vehicle charging stations (max. 100 amps).

5. Zoning Code regulations include limitations on the number, type and size of accessory structures both conditioned and unconditioned.
Permit and Resource Management Department
ADMINISTRATIVE MANUAL

a. Any accessory structure with a kitchen, as defined in Policy 1-4-5, is considered a dwelling unit and must either be classified as a second unit limited to 840 sq. ft. in size or meet the allowable density under zoning for another dwelling.

b. Any accessory structure with a bedroom and no kitchen is considered a guest house limited to 640 sq. ft. and must meet the zoning requirements for a guest house. (See definition below)
   i. A detached structure with a full bathroom that is accessible from the interior is considered a bedroom/guest house, unless specifically exempted under Policy 1-4-1.
   ii. A detached structure with a ½ bath and more than one other room (2 or more) will be considered a bedroom/guest house, unless specifically exempted under Policy 1-4-1.
   iii. A detached structure with a ½ bath and an open floor area (1 room) will not generally be considered a bedroom/guest house and will be classified by the criteria below and the accompanying Table 1.

6. Required upgrades or expansion of septic systems may be required for any proposed residential accessory structure. (See PRMD Policy 9-2-12 Guidelines for Remodeling and Additions)

7. Rough-in for future improvements include wood stoves, mechanical ducts, electrical circuits, gas lines, and water and waste lines. (See definition of rough-in below.)
   a. Rough-ins shall only be allowed if the type of structure, inclusive of any future appliance or fixture supported by such rough-in, is allowed under zoning regulations.
   b. When an appliance or a fixture supported by the rough-in is installed, a permit shall be required.
   c. Rough-ins shall not be permitted if the installation will trigger another building use which is not allowed on the property under review. For example, a rough-in for a kitchen in a guest house would not be permitted when the property under review does not qualify for a second dwelling unit.
   d. Plans submitted for permits that include rough-ins shall label the rough-ins on the floor plan. Staff must note approval of any rough-ins in the approval section for the permit.

DEFINITIONS

Accessory structure is a structure not greater than 3,000 square feet (sq. ft.) in floor area, and not over two stories in height, the use of which is customarily accessory to and incidental to that of the dwelling(s) and which is located on the same lot (Cal Res Code Section R.202). Accessory structures containing a full bathroom accessible from the interior of the structure will be considered as having a bedroom(s). Further size limitations are detailed by this policy on some types of structures (see below).
Bathroom, Full bath A full bath contains a toilet, sink and shower and/or bathtub.

Bathroom, Half bath A half bath contains a toilet and a sink (See PRMD Policy 1-4-1, Definition of a Bedroom) Note: Half baths that are designed with enough floor area (greater than 45 sq. ft.) to easily accommodate a bathtub and/or shower is considered as having a “Rough-in” for a full bath. Half baths, accessed from the interior with an exterior door leading to a shower, are considered a full bath.

Bedroom is any room in a dwelling or accessory structure that can be used for sleeping purposes. For purposes of sizing the on-site sewage disposal system, habitable rooms with a floor area equal to or greater than 70 square feet and designed to provide privacy to the occupant will typically be considered bedrooms. Such rooms include, but are not limited to, those designated on plans as bedrooms, lofts, sewing rooms, dens, offices, recreation rooms, hobby rooms, gym, and game rooms. A closet, or lack thereof, shall not determine whether a room is considered a bedroom. Kitchens, bathrooms, laundry rooms, rooms with large entry ways lacking doors and designed such that the installation of a door would require a building permit and rooms not meeting the Uniform Housing Code are not bedrooms (See PRMD Policy 1-4-1, Definition of a Bedroom)

Class III System is a non-conforming system that does not meet all of the current standards, but is the best available system that is most effective, economically achievable and state of the art technology currently in use for controlling the pollution that will result in reasonable progress toward improving the discharge to the environment given the site conditions. (See PRMD Policy 9-2-12 Guidelines for Remodeling and Additions)

Class III Septic System is a non-conforming system that does not meet current standards, but is functioning properly with a concrete or fiberglass septic tank and some leaching field or seepage pit. (See PRMD Policy 9-2-12 Guidelines for Remodeling and Additions)

Conditioned space is any area, room or space in a building being heated exceeding 10 Btuh/ft² or cooled exceeding 5 Btuh/ft² directly or indirectly by any equipment or passive design feature for the comfort of occupants or for other reasons such as preserving temperature-sensitive goods. (Building Science)

Guest house is an accessory building which consists of a detached living area of a permanent type of construction with no provisions for appliances or fixtures for the storage and/or preparation of food, including, but not limited to; wet bars, refrigeration, dishwashers or cooking facilities. The building shall not be leased, subleased, rented or sub-rented separately from the primary dwelling. The floor area of a guest house shall be a maximum of six hundred forty (640) square feet. Floor area shall be calculated by measuring the exterior perimeter of the guest house and the length of any common walls. In the case of straw bale or similar construction, floor area may be calculated using interior dimensions. For the purpose of calculating the maximum size of a guest house, any storage area attached to the guest house, excluding garage, shall be included. A guest house shall be located closer to the primary dwelling on the subject lot than to a primary dwelling on any adjacent lot. The guest house shall not be located more than one hundred feet (100’) from the primary dwelling on the subject
lot, except where the planning director determines that a greater setback is appropriate in light of
topography, vegetation or unique physical characteristics. (See Section 26-02-140 of Sonoma County
Code)

**Living Area**—living area, for the purpose of this policy, includes all areas of residential dwellings and
residential accessory structures including: bathrooms, kitchens, closets, utility rooms, hallways and
any other area in a building that is designed for human use. New residential rooms above garages
and/or other new residential accessory structures on the property will be considered living area. Areas
such as unfinished attic space, unfinished basements, and garages are not considered living area.

**Kitchen** is any area designed or used for preparation or cooking of food, with either cooking
appliances/rough-ins; OR sink and refrigerator > 5 cu ft or space w/ outlet (See PRMD Policy 1-4-5,
*Definition of a Kitchen*)

**Occupancy** is the classification of a structure as defined in the California Building Code (CBC), which
is given based on the intended use and/or designed use of such structure. See CBC chp 3.

**Residential** is any structure or room labeled “R-” occupancy as defined by the California Building
Code.

**Rough-in** means to install the preliminary (rough) plumbing, electrical and/or mechanical building
materials without making the final connections.

**Unfinished** is any structure, or any part of a structure, with exposed studs, and no insulation or sheet
rock covering the walls. Unfinished rooms in a primary dwelling and/or residential accessory
structure shall have exterior access doors only with no direct access to the interior of a primary
dwelling and/or residential accessory structure.

**Wet bar** is limited to 2 sq. ft. sink with a drain ≤ 1.5 in diameter, 5 cu ft under counter refrigerator;
and, ≤ 6 linal ft of counter and cabinets (See PRMD Policy 1-4-5, *Definition of a Kitchen*)

**TYPES OF STRUCTURES AND ALLOWED FEATURES**

The following summarizes the building classifications, septic and zoning requirements for various
types of accessory structures based on their physical features as shown in the attached Table.
Accessory structures must meet all code requirements for the type of structure including but not
limited to the California Building Codes (CBC & CRC) and Chapter 26 Zoning of the Sonoma County
Code. Refer to the relevant code sections for the detailed requirements.

1. **Second Dwelling Unit**
   a. A second dwelling unit shall be classified as R-3 Occupancy.
   b. A second dwelling unit is an accessory structure with a kitchen and full bathroom.
c. A second dwelling unit must be conditioned to meet state Energy Code.

d. A second dwelling unit is limited to 840 sq. ft. in size.

e. A second dwelling unit must meet zoning setbacks per Chapter 26, section 88-060.

f. A code compliant septic system is required. However, a bedroom swap with the primary dwelling is allowed with a Class I Best Available septic system. A second dwelling unit is considered a rental unit per Chapter 26, Article 89 of the Sonoma County Code if a waiver of affordable housing fees is granted and a covenant is recorded requiring that the unit be made available for rent to another household.


2. Guest house

a. A guest house shall be classified as an R-3 Occupancy per the CBC.

b. A guest house is a detached accessory structure with living/bedroom area.

c. A guest house shall have no provisions for appliances, cabinets, counters, sinks, or fixtures for the storage and/or preparation of food.

d. A guest house may or may not have a full or half bathroom.

e. A guest house is considered a bedroom for septic purposes and a Class I (Best Available) septic system for the primary dwelling is required. However, a bedroom swap with the primary dwelling is allowed with a Class III septic system. Septic reserve area is required.

f. A guest house is limited to 640 sq. ft. in size.

g. A guest house must be located within 100-feet of the primary dwelling (exceptions for unique characteristics or topography are allowed) and must be closer to the primary dwelling than to a primary dwelling on any adjacent lot.

h. A guest house shall not be considered an affordable housing unit per Chapter 26, Article 89 of the Sonoma County Code and may not be rented separate from the primary dwelling.

i. Affordable Housing Fees do not apply unless constructed as part of a larger addition with total combined floor area greater than 1,000 sq. ft.


3. Miscellaneous Residential Occupancies (i.e. Gym, Office, Dance, Hobby or Art Studio, Recreation or Media Room etc.)

a. Miscellaneous residential occupancies or any other accessory structure with Living Space shall be classified as a Group R Occupancy per the CBC. If a zoning or use permit has been issued that allows events and public use, then the accessory building shall be classified for highest possible use, regardless of the building size.

b. Miscellaneous residential occupancies have no bedroom, kitchen or full bathroom as defined by Policy 1-4-1 or 1-4-5, unless permitted as a second unit or guest house as defined above.

c. Miscellaneous residential occupancies structures must be secondary and incidental to the primary residence and shall have an open floor plan with no partitions other than a ½ bath.

d. Miscellaneous residential occupancies shall not exceed 3,000 sf.
c. Miscellaneous residential occupancies < 640 sq. ft. require a class 3 septic system for the primary dwelling; > 640 sq. ft. require a class 1 septic system for the primary dwelling. Septic reserve area is required.

f. Miscellaneous residential occupancies may have either one of the following: 1) a ½ bath only accessible from interior, optional shower with exterior access only or 2) a full bath with exterior access only.

4. Room Above a Garage
These rooms come in various configurations, from a typical attic to a finished room indistinguishable from the interior of a dwelling. For purposes of this policy a room above a garage refers to a detached garage with a room above. A room above a garage will be classified by the physical features as described in this policy and shown in the attached Table Summary of requirements for Detached Residential Accessory Structures.

a. A room above a garage that contains both a floor and a ceiling with a height of at least 7 feet or with sloped ceilings in compliance with §1208.2 of the California Building Code it shall be classified as an accessory to Group R Occupancy.

b. If a room above a detached garage contains only one of the provisions in “a” above, and is unfinished it may be considered an attic and shall be classified as a Group U occupancy.

c. A room above a garage classified as Group R occupancy, or as a mezzanine, must have a code compliant exit to grade level.

d. A partial floor (less than 33% of the lower floor area) which meets the CBC definition of an enclosed mezzanine is not considered a story and may be classified as part of the Group U Occupancy.

e. Some areas which meet the definition of a mezzanine are quite small in area. Such areas may be classified as a shelf when the floor is less than 3 feet wide in one dimension. If the floor has more than one level, the levels must be separated by at least 2 feet vertically to be considered different levels.

f. A room above a garage may have ½ bath only, unless permitted as a second dwelling unit or guest house in which a full bath is allowed.

g. A room above a garage shall have no kitchen, bedroom or full bathroom as defined by Policy 1-4-1 or 1-4-5 unless permitted as a second unit or guest house as defined above with a Code Compliant septic system.

h. A room above a garage shall have an open floor plan with no partitions other than a ½ bath.

i. A room above a garage, along with the garage below shall not exceed 3,000 sq.ft.

j. A room above a garage ≤640 sq. ft must have a Class III septic system for the primary dwelling; a room above a garage >640 sq. ft. must have a Class I system for the primary dwelling. Septic reserve area is required.

k. A room above a garage may be conditioned to meet state Energy Code.

5. Pool House

a. A pool house shall be classified as a Group R-3 Occupancy per the CBC.

b. A pool house shall not have a kitchen, but may have a wet bar or an outdoor kitchen area.
c. A pool house must be secondary and incidental to the primary residence and shall have an open floor plan with no partitions other than a ½ bath. An equipment room is allowed with exterior access only.

d. A pool house shall not exceed 3,000 sq.ft.

e. A pool house may have either one of the following: 1) a ½ bath only accessible from interior, optional shower with exterior access only, or 2) a full bath with exterior access only.

f. A pool house less than or equal to 640 sq. ft. requires a Class III septic system for the primary dwelling; a pool house greater than 640 sq. ft. requires a Class I septic system for the primary dwelling per Policy 9-2-12. Septic reserve area is required.

6. Detached Private Garage

a. A detached private garage shall be classified as a Group U Occupancy.

b. A detached private garage is an unconditioned accessory structure.

c. A detached private garage shall not have a kitchen, bedroom or full bathroom as defined by Policy 1-4-1 and 1-4-5.

d. A detached private garage may have either one of the following: 1) a ½ bath only accessible from the interior and a shower with exterior access only or 2) a full bath with exterior access only provided that the on-site septic system meets Class III (septic tank and disposal field) as defined in Policy 9-2-12. Septic reserve area is required.

e. A detached private garage has a minimum 8-foot wide nominal exterior door or opening through which a motor vehicle can be driven and a way of approaching the door with a motor vehicle from the public way.

f. A detached private garage shall have a vehicle parking area at least 10 feet wide by 20 feet long is provided within the structure.

g. A detached private garage greater than 1000 sq. ft. shall be for the parking of vehicles only.

h. A garage must have a solid non-absorbent floor in compliance with CBC Section 406.

i. A detached garage is limited to 3000 sq. ft. per CBC 406.3 and CRC definition of accessory structure.

7. Workshops

a. A workshop accessory to a residence shall be classified as a group U occupancy.

b. A workshop has an open floor plan with no partitions and is limited to 1000 sq. ft.

c. A workshop shall have no provisions for appliances, cabinets, counters, sinks, or fixtures for the storage and/or preparation of food. No bedroom or full bathroom as defined by Policy 1-4-1 or 1-4-5 is allowed.

d. A workshop may have either one of the following: 1) a ½ bath only accessible from interior, optional shower with exterior access only or; 2) a full bath with exterior access only provided that the on-site septic system meets Class III (septic tank and disposal field) as defined in Policy 9-2-12. Septic reserve area is required.

e. Provision for a kiln, welder or other heat producing appliance is allowed.

f. A workshop shall not be allowed to fulfill covered off street parking in compliance with Article 26-86 of the Sonoma County Code.
8. Storage Building
   a. A storage building accessory to a residence shall be classified as Group U occupancy.
   b. A storage building has no exterior door through which a motor vehicle can be driven.
   c. A storage building has an essentially open floor plan with no more than two rooms, minimum partitions and no waste plumbing.
   d. A storage building shall have no more than 40 amp electrical sub-panel
   e. A storage building has no bedroom, no provisions for appliances, cabinets, counters, sinks, or fixtures for the storage and/or preparation of food, or a bathroom as defined by Policy 1-4-1 or 1-4-5.

9. Agricultural Structure
   a. An agricultural structure accessory to a residence shall be classified as a Group U Occupancy.
   b. An agricultural structure is an unconditioned accessory structure for agricultural use commonly referred to as a barn.
   c. An agricultural structure shall have no provisions for appliances, cabinets, counters, sinks, or fixtures for the storage and/or preparation of food. No bedroom and no full bathroom as defined by PRMD policy 1-4-5 and 1-4-1.
   d. An agricultural structure may have either one of the following: 1) a ½ bath accessible from the interior, optional shower with exterior access only or; 2) a full bath with exterior access only provided that the on-site septic system meets Class III (septic tank and disposal field) as defined in Policy 9-2-12. Septic reserve area is required.
   e. An agricultural structure must have a minimum 8-foot wide exterior barn/garage door or an opening (no door) through which a motor vehicle can be driven and a way of approaching the door/opening with a vehicle.
   f. An agricultural structure must have stalls or other provisions for animal care OR is essentially an open floor plan (maximum partitioned areas totaling 25% of the floor area) intended and designed for storage of farm machinery, tack, hay, feed, etc.
   g. Agricultural structures are not subject to the 3000 sq. ft. maximum of U occupancy when accessory to an agricultural operation in the zones which allow for agricultural uses (DA, LEA, LIA, RB, AR and RRD). An agricultural building permit exemption is only allowed for an agricultural structure in zones on parcels 5 acres or larger with an existing agricultural use. Refer to public handout CNI-030.
   h. Barns or other similarly labeled structures that are accessory to a residence are subject to the 3000 sq. ft. maximum limit.

PROCEDURE

1. Permit Technicians shall make the initial determination of the type of structure at the time of application based on the Detailed Requirements noted above and the attached Table Summary of Requirements for Detached Residential Accessory Structures. Planning, Building and Septic staff shall be responsible to verify that permit applications and construction complies with the Detailed Requirements noted above and the attached Table Summary of Requirements for Detached Residential Accessory Structures. In cases where...
the determination of the type of structure is appealed due to difficulty in making a determination on staff’s part, the director of PRMD shall make the final determination.

2. Staff shall be diligent in the issuance of the minor improvement permits and have authority to require departmental approvals and reviews not normally associated with such permits if the improvement may change the use or character of the structure.

3. Inspection staff shall require plan revision or permit description revision of issued building permits if rough-ins are installed and not noted on the approved plans or permit description.

4. Staff shall have the authority to deny minor improvement permits if the permit changes the use or building character to a use that is not allowed.

5. Where a detached residential accessory structure is approved subject to limitations on the use, the restrictions shall be clearly stated on Conditions. Covenants and Restrictions in the form provided as Attachment B. The CCR’s shall be executed by the owner and recorded by the owner at the County Clerk’s office prior to issuance of building or zoning permits. The owner shall provide a certified copy of the fully executed and recorded form to PRMD prior to permit issuance.

6. Valuations for permit fees shall be based on the features, occupancies and uses determined by this policy.

ATTACHMENTS

1. TABLE 1: Summary of Requirements for Detached Residential Accessory Structures
2. Sample Form Conditions, Covenants and Restrictions Form

AUTHORITY

1. California Building Code, Section 113.4b
2. California Building Code, Section 106.3
3. Section 26-92-210 Sonoma County Code

Approved by:

Tennis Wick, Director

Lead Authors: Ben Neuman, Patrick Mullin, Dean Parsons, Jennifer Barrett, Nathan Quarles
07/01/15
07/22/15
08/03/15
A-BLD Permits

PURPOSE

This policy is intended to provide guidance when a permit may be issued as an A-BLD permit. A-BLD permits are issued without plans and without formal plan review, although in some cases supporting documents (such as a floor plan, or manufacturers listing documents) may be required. It is not intended that an A-BLD permit be issued for any change of occupancy. Any work done in conjunction with a change of occupancy shall require a B-BLD permit.

TYPES OF A-BLD PERMITS FOR RESIDENTIAL STRUCTURES

The following types of permits can be issued as A-BLD permits for residential structures and/or associated accessory structures:

1. Water heater replacement or installation including associated water piping, gas piping, and vents.
2. Plumbing work other than the above.
3. Electrical services upgrade maximum 400 amps including associated wiring.
4. Electrical work other than the above.
5. Heating and/or cooling equipment repair or replacement, including associated water piping, gas piping, and vents.
6. Mechanical work other than the above.
7. Re-roofing, for the purposes of this policy, roof sheathing, fascia boards and rafter tails that are replaced as a matter of required maintenance shall be considered included in the scope of re-roofing. (See item 10 below).
8. Installation or replacement of siding.
9. Dry rot repair and/or replacement in kind to not more than 40 linear feet of wall, provided the work meets the requirements for conventional construction in the building code. “Wall” includes bottom plate to top plate and may include rim joists, rafter tails and fascia (foundation repair/replace and re-framing of room rafters requires plans).
10. Repairs to deck or guardrails of decks.
11. Repair or replacement of interior or exterior stairs, including handrails and guardrails.

Because there are no plans, it is important that the permit description include enough information so that the building inspector can determine the extent of the work.

All work authorized by an A-BLD permit must conform to present codes. For instance, guardrails which are replaced must meet current spacing and height requirements. Stairs must comply with current rise and run requirements.

TYPES OF A-BLD PERMITS FOR NON-RESIDENTIAL STRUCTURES
The types of A-BLD permits which can be issued for non-residential structures are severely limited because, with some exceptions, when alterations or structural repairs are made to existing non-residential buildings, accessibility requirements must be made as well.

The following types of permits can be issued as A-BLD permits for non-residential structures:

1. Replacement heating, water heating, ventilation, and air conditioning equipment with the same type of unit in the same location. New roof mounted equipment or equipment in a new location requires plans.
2. Re-roofing (reframing the roof requires plans).
3. Service upgrade maximum 400 amps including associated wiring.
4. Electrical work not involving the placement or replacement of switches or receptacles.
5. Plumbing work not involving the placement or replacement of plumbing fixtures.

All work to a non-residential structure other than that shown above requires plans.

PERMITS FOR ABATING VIOLATIONS

Refer to Permit and Resource Management Department (PRMD) Policy & Procedure 7-0-8, Abatement Demolition Permits, if an applicant elects to legalize a violation by removing unpermitted construction. This policy requires:

- A site plan and floor plans be provided, and the floor plan must show the current and final floor plan.
- Form CDE-005 Demolition Permit Checklist filled out by Code Enforcement staff.

All other applications to legalize construction without permit shall be treated as new construction subject to inspection per PRMD Policy & Procedure 1-4-2, Concealed Construction Verification Guidelines.

FEES

Fees for residential A-BLD permits should be charged as follows:

- For Electrical Service Panel Upgrades, see current fee schedule.
- If there is electrical work included, select the minimum electrical fee.
- If there is plumbing work included, select the minimum plumbing fee.
- For water heaters select the minimum plumbing fee only.
- If there is mechanical work included, select the minimum mechanical fee.
- For furnace, select the minimum mechanical fee only.
- If there is work which is part of a minor remodel on the walls, ceilings, roofs or floors, the fee is calculated using four value ranges. This results in the fee ranging from the minimum building fee up to 2.5 hours inspection time.
- For re-roofs the fee is calculated using four value ranges. This results in the fee ranging from the minimum building fee up to 2.5 hours inspection time.
Fees for commercial A-BLD permits should be charged using our existing fee schedule.

INSPECTIONS

When an A-BLD permit is issued, the permit holder should be informed that if the building inspector finds during the course of inspection that the work authorized by an A-BLD permit with no plans exceeds the scope of work described above, or if the work does not meet the requirements of conventional construction in the building code, plans will be required and a B-BLD permit issued after the appropriate reviews and approvals.

The following procedures should be followed:

- The building inspector shall issue a correction notice stating that plans and a B-BLD permit are required, and giving the reasons for this requirement. If the limits of an A-BLD permit have been exceeded, the correction notice should explain the details; such as, more than 40 l.f. of wall reframed or lateral bracing of structure compromised, engineering required.
  - The correction notice shall specify what, if any, work can continue (such as weatherproofing the structure).
  - A stop work notice shall be issued when necessary.
- When the customer comes to PRMD with plans for the work, customer service staff shall review the plans and initiate a B-BLD permit for all the work on the project, including any work previously described on the A-BLD permit, in accordance with our current procedures.
  - A site review is required if required by our current procedures.
  - Fees paid for the B-BLD permit should be adjusted to exclude fees previously paid for work on the A-BLD permit.
  - Review is required by other sections of the department in accordance with our current procedures.
  - As a general rule the B-BLD does not receive priority processing. The Building Official may authorize priority processing when necessary to protect health and safety.
- Customer service staff shall change the status of the A-BLD permit to CANCELLED.
- Customer service staff shall add the following notice to the A-BLD permit: “WORK INCLUDED IN B####.”

Approved by:

/s/ Pete Parkinson

Pete Parkinson, Director

Lead Author: John deCourcy
Investigation Fees and Penalties for Septic Violations

PURPOSE

To provide consistent determination of investigation and penalty fees as they apply to septic system violations. The scope of this policy is limited to the application of penalties in conjunction with the issuance of permits. This policy supersedes the memo dated September 26, 1995, authored by Rich Holmer.

GENERAL

There are two classes of septic work to which penalty fees may apply, construction without permit or repair of a failing septic system. New systems are divided into Standard and Non-Standard systems.

It is assumed that all septic systems will fail at some point. Therefore once PRMD determines a system is failing, adequate notification to the property owner is required. For the purpose of this policy, a Notice of Violation or Notice and Order is adequate notification. However, a written notice or letter produced by PRMD and provided to the property owner may be considered adequate notification as determined by PRMD supervisory or management staff. A reasonable period shall be given to allow the property owner to obtain a repair permit and complete repair work. Enforcement staff shall treat failing septic systems in the same manner as sub-standard housing regarding the imposition of penalties. If a repair permit is submitted within 30 days of sending a Notice of Violation or Notice and Order, only investigation fees apply. If the owner delays response beyond 30 days, both investigation and penalties will apply. The imposition of penalties may be extended if the applicant can demonstrate a reasonable justification why a permit application could not be submitted within 30 days in accordance with Section 1-7.1 (d) Sonoma County Code. Reasonable justifications include, but are not limited, to ground water studies or delay to accommodate the schedule of a licensed professional.

For residential properties, the owner shall be allowed to pump the failing system until a repair system is installed. For commercial properties, the property owner or tenant may be allowed to pump the failing system at the discretion of PRMD. Issues such as the availability of public restrooms, hand washing facilities, and use as a food facility must be taken into consideration for commercial properties.

AUTHORITY

Section 1-7.1 Sonoma County Code
Section 103.4.4 California Building Code

ATTACHMENTS

Penalty Calculation Sheet
Penalty Schedule

Effective: 10/17/11
PROCEDURE

Investigation fees as outlined in the latest adoption of the California Plumbing Code shall be applied when a Notice of Violation has been sent. Penalties shall be calculated by determining a permit fee multiplier using the Penalty Calculation Sheet multiplied by the following permit or review fees:

A. Construction without permit.

1. For standard septic systems constructed without permit, penalties shall be computed using Permits Plus Fee Item 0371 for a Standard System Septic permit.

2. For non-standard septic systems constructed without permit, penalties shall be computed using Permits Plus Fee Item 0556 for a Non-Standard Septic System permit.

B. Repair permits for failing septic systems.

1. For septic system repair or tank destruction permits where the property owner has voluntarily submitted a repair permit and no investigation has been conducted, the permit may be issued without investigation fee or penalty.

2. For septic system repair or tank destruction permits where a Notice of Violation has been sent and the owner has submitted a septic repair permit within 30 days, penalties shall not be imposed.

3. For septic system repair or tank destruction permits where PRMD has received a complaint, a Notice of Violation has been sent and the owner has not submitted for a permit within 30 days, penalties shall be calculated using Permits Plus Fee Item 0371 for a Standard System Septic permit, Fee Item 0359 for a Non-Standard System or Fee Item 0375 for a Tank Destruct permit.

C. If the responsible party (owner or tenant) fails to correct the violation resulting in an administrative abatement hearing, any penalty as allowed under Section 1-7.1 of the Sonoma County Code may be imposed.

Approved by:

/s/ Pete Parkinson

Pete Parkinson, Director

Lead Author: Ben Neuman

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Sizing of Onsite Wastewater Disposal Systems for Special Events Authorized by Use Permits and the use of Portable Toilets

PURPOSE

To instruct staff and the designers of on-site wastewater disposal systems of the criteria to be used in calculating wastewater flows from Special Events (or Cultural Events) granted in Use Permits and the use of Portable Toilets for Special Events.

INTENT

The intent of this policy is to provide sizing criteria for onsite disposal systems that are commensurate with the number and size of special events approved under the facility's permit. Generally, this policy requires larger disposal systems as the number and size of permitted events increases. The policy also seeks to avoid over-sizing disposal systems based on a relatively small number of large events; therefore, this policy allows the four largest approved events to be serviced completely with portable toilets. As the number of approved events increases, the onsite waste water system disposal capacity requirements increase based upon a percentage of the size of the fifth largest special event flow. See Table A.

Example 1

A facility is approved for six (6) events per year. Specifically, four (4) events of up to one hundred people and two (2) events up to two thousand people.

In this case the facility may choose to service the (2) two thousand person events and (2) of the one hundred people events solely with portable toilets. Since the next event would be the fifth event which in this case is one hundred people, the onsite sewage disposal system would have to be expanded by 25% of the one hundred person event (fifth event).

Example 2

A facility is approved for (22) one hundred person events and (1) one thousand person event

In this case the facility may choose to service the (1) one thousand person event and (3) of the one hundred person events with portable toilets. Since the fifth largest event would be one hundred people the onsite disposal system would have to be expanded to accommodate 50% of the fifth one hundred person event waste flow. The percent increase to the onsite system is required because the facility is becoming more of an event center rather than a facility having an occasional or minimal number of events.
Example 3

A facility is approved for (20) one hundred person events and (6) one thousand person events.

In this case the facility may choose to service (4) of the one thousand person events with portable toilets and since the fifth largest event is a one thousand person event the onsite disposal system would be required to be expanded to accommodate 100% of the additional wastewater flow from the fifth one thousand person event.

GENERAL

Board of Supervisors Minute Order 65472 of February 26, 1980, and the North Coast Regional Water Quality Control Board Basin Plan both place restrictions upon the use of holding tanks (including portable toilets) to provide wastewater disposal for new development. Special Events or Cultural Events are defined in Sonoma County Code section 26-02-140 and have been interpreted for staff by the Board of Zoning Adjustments in a Resolution 08-003BZA, of February 28, 2008. These events cover the spectrum from one time events with no permanent right to repeat that event granted by a Zoning Permit, to dozens of events per year, to be allowed every year, authorized by a Use Permit. The goal is to provide criteria that requires a greater integration of Special Events into the permanent building infrastructure as the Special Events become more frequent or commonplace at a given site.

DEFINITIONS

A. "Event" means any special event authorized under a Use Permit or an "Occasional Cultural Event" as defined in the zoning ordinance and as interpreted by the Board of Zoning Adjustments. "Event" includes industry-wide events.

B. "Visitors per day" means the peak number of visitors estimated for the entire busiest single day of one event, and not the combined number of visitors of both days of a weekend event, and not just the maximum number of visitors at one time during the busiest day.

PROCEDURE

A. On-site Wastewater Treatment Systems (OWTS) shall be sized for the peak wastewater flow from all sources, except where the site is connected to public sewer, or where allowances are made in the Building Code and in the Regional Water Quality Control Board Basin Plan, or in this policy for Special Events. The wastewater system consultant shall justify the sizing of the OWTS for Special Events based upon the specific circumstances of the site and the proposed event, i.e., food prepared on an outdoor barbeque typically generates less wastewater than a meal prepared in a kitchen, and a sit-down three course meal typically generates more wastewater than a meal served on disposable utensils at outdoor picnic tables. Wineries with a larger amount of things to
see or a larger selection of wines to try may cause wine tasters to linger longer or to taste more wine, etc.

1. Special Events involving wine tasting without food service shall size the on-site wastewater disposal system as large as needed, but in no case at less than two and one half (2 and 1/2) gallons per visitor per day.

2. Special events involving food service shall size the on-site wastewater disposal system as large as needed, but in no case at less than five (5) gallons per visitor per day.

3. Sizing of the OWTS for Special Event wastewater flows shall comply with the following requirements when mitigation is provided by an adequate number of portable toilets as specified in this policy:

**TABLE A**

<table>
<thead>
<tr>
<th>Number of special events approved per year</th>
<th>Percent increase in the design and capacity of the facilities waste water treatment system due to special event waste water flows.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4</td>
<td>The additional special event waste water flow may be accommodated by portable toilets. No increase in the facility waste water system required.</td>
</tr>
<tr>
<td>5 to 10</td>
<td>The design and capacity of the facilities waste water treatment system must be increased by 25% of the fifth largest single special event flow.</td>
</tr>
<tr>
<td>11 to 25</td>
<td>The design and capacity of the facilities waste water treatment system must be increased by 50% of the fifth largest single special event flow.</td>
</tr>
<tr>
<td>26 or more</td>
<td>The design and capacity of the facilities waste water treatment system must be increased by 100% of the fifth largest single special event flow.</td>
</tr>
</tbody>
</table>

*The Special Event Waste Water Flow is the additional sewage flow expected from the largest single special event that is in excess of the normal waste water flow from the...
facilities.

B. The use of portable toilets shall meet the following minimum requirements:

1. An adequate number of portable toilets shall be provided, but in no case shall the number of portable toilets be less than one toilet per one hundred (100) visitors per day for day use, and six toilets per one hundred (100) visitors per day if overnight use is included.

2. Portable hand washing facilities shall be provided with all portable toilets used for serving visitors or the public. Employees serving food to visitors or the public must have access to permanently plumbed running hot and cold water sinks plumbed to an OWTS or public sewer.

3. Portable toilets shall be serviced as needed, but in no case less than once every seven days.

4. The applicant shall provide an accessible portable restroom on the job site where required by Federal, State or local law, including but not limited to, requirements imposed under OSHA, the Americans with Disabilities Act or Fair Employment and Housing Act.

5. Portable toilets shall not be brought on-site prior to 48 hours before the Special Event and shall be promptly serviced and removed within 48 hours after the Special Event.

6. If complaints are received that PRMD believes are valid complaints, the applicant or current operator of the Use Permit shall increase the number of portable toilets and/or increase the frequency of maintenance of the portable toilets for the remainder of the Special Event and at future Special Events as directed by PRMD. The property owner and his agent(s) are expected to maintain portable toilets and hand washing units so that:

   a. The holding tank does not leak or overflow.
   b. Toilet paper is promptly replaced when the dispenser runs out.
   c. Water and soap is promptly replaced when the hand washing units run out.
   d. The wait to use a portable toilet shall not be so long that people relieve themselves at other impromptu locations.
   e. Reliance upon portable toilets shall not create a public nuisance.