Central Valley Regional Water Quality Control Board

18 August 2017

Jeff Williams
Environmental Health Director, Sutter County
1130 Civic Center Boulevard, Suite A
Yuba City, CA 95993

CERTIFIED MAIL
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NOTICE OF ADOPTION
OF
ORDER R5-2017-0098
RESOLUTION TO APPROVE LOCAL AGENCY MANAGEMENT PROGRAM
FOR
SUTTER COUNTY HEALTH DEPARTMENT
SUTTER COUNTY

Order R5-2017-0098 was adopted by the Central Valley Regional Water Board on 11 August 2017 approving the Local Agency Management Program (LAMP) for Sutter County Health Department.

To conserve paper and reduce mailing costs, a paper copy of the Order has been sent only to the County. Interested parties are advised that the full text of this Order is available at: http://www.waterboards.ca.gov/centralvalley/water_issues/owts/lamp_reviews/index.shtml. Anyone without access to the Internet who needs a paper copy of the Order can obtain one by contacting Central Valley Water Board staff.

If you have any questions concerning the Onsite Wastewater Treatment System Local Agency Management Program, please contact Eric Rapport at (530) 224-4998 or at eric.rapport@waterboards.ca.gov.

SCOTT ARMSTRONG, P.G., C.HG.
Senior Engineering Geologist
Waste Discharge to Land Permitting Unit

encl: Order R5-2017-0098

cc w/o encl: Patrick Pulupa, Office of Chief Counsel, SWRCB, Sacramento
Tim O'Brien, SWRCB, Sacramento
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION R5-2017-0098

APPROVING THE LOCAL AGENCY MANAGEMENT PROGRAM
FOR
SUTTER COUNTY ENVIRONMENTAL HEALTH DIVISION

WHEREAS, on 19 June 2012, the State Water Resources Control Board (hereafter State Board) adopted Resolution No. 2012-0032, which in part approves the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (hereafter the OWTS Policy); and

WHEREAS, the OWTS Policy allows Local Agencies to propose Local Agency Management Programs (hereafter LAMPs) for California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) approval, as conditional waivers of Waste Discharge Requirements; and

WHEREAS, the OWTS Policy requires Central Valley Water Board staff (hereafter staff) to solicit comments from the State Water Resources Control Board Division of Drinking Water (hereafter DDW) regarding a LAMP’s proposed setbacks and notifications to water purveyors; and

WHEREAS, on 12 May 2016 the Sutter County Environmental Health Division submitted a draft LAMP, along with a preliminary completeness checklist (hereafter checklist) per staff’s request; and

WHEREAS on 15 June 2016 staff and Sutter County Environmental Health Division completed discussions on the draft and checklist; and on 12 May 2016 DDW concurred with the proposed setbacks and notifications in the draft; and

WHEREAS, on 12 April 2017, the Central Valley Water Board notified Sutter County Environmental Health Division and interested parties of its intent to approve the LAMP, and provided them with an opportunity for public hearing, and an opportunity to submit comments and recommendations, both on the draft LAMP and checklist; and

WHEREAS, on 11 August 2017, the Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to this action:
RESOLUTION R5-2017-0098
APPROVING THE LOCAL AGENCY MANAGEMENT PLAN FOR
SUTTER COUNTY ENVIRONMENTAL HEALTH DIVISION

Therefore, be it RESOLVED, that the Central Valley Water Board hereby approves the Local Agency Management Program submitted by the Sutter County Environmental Health Division.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the Central Valley Water Board, on 11 August 2017.

[Signature]

PAMELA C. CREEDON, Executive Officer
ORDINANCE NO. 1632

AN ORDINANCE OF THE COUNTY OF SUTTER AMENDING
THE SUTTER COUNTY ORDINANCE CODE BY
AMENDING CHAPTER 700 RELATING TO ON-SITE SEWAGE TREATMENT
AND DISPOSAL

THE BOARD OF SUPERVISORS OF THE COUNTY OF SUTTER ORDAINS AS FOLLOWS:

SECTION 1: The Sutter County Ordinance Code is hereby amended by amending Chapter 700 to read in its entirety as follows:

Chapter 700

ON-SITE SEWAGE TREATMENT
AND DISPOSAL

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700-010  AUTHORITY, PURPOSE, AND POLICY

A. This Ordinance is established pursuant to Section 101000, et seq. of the California Health and Safety Code, the Porter-Cologne Water Quality Control Act, Water Code Section 13000 et seq., and the Central Valley Regional Water Quality Control Board, Water Quality Control Plan. This Chapter shall apply to all territory embraced within the unincorporated limits of the County of Sutter, State of California.

B. The purpose of this Ordinance is to protect the public health by minimizing:

(1) The potential for public exposure to sewage from on-site sewage systems; and

(2) Adverse effects to public health that discharges from on-site sewage systems may have on ground and surface waters.

C. This Ordinance regulates the location, design, installation, operation, maintenance, repair, and monitoring of on-site sewage systems. This Ordinance seeks to:

(1) Achieve long-term sewage treatment and effluent disposal; and

(2) Limit the discharge of contaminants to waters of the State.

700-020  ADMINISTRATION

A. The Administrative Officer shall be the administrator of this Ordinance and shall be responsible for administering the provisions and requirements of this Ordinance.

B. The Health Officer shall act under the direction of the Board of Supervisors. The Health Officer shall have the powers and duties enumerated in the California Health & Safety Code.

C. The Health Officer is hereby authorized and directed to adopt administrative rules or technical standards that are consistent with and effectuate the purpose of this Ordinance and Manual. Any activity pertaining to on-site sewage treatment and disposal shall conform to any such administrative rules or technical standards adopted pursuant to the following procedures:

(1) Notice of intent to adopt, amend, suspend, or repeal an administrative rule or technical standard shall be given to the Board of Supervisors, and any trade, industry, professional interest group or regional publication that the Department deems effective in reaching affected persons at least thirty (30) days before the deadline for comments;
(2) Adoption of a proposed administrative rule or technical standard shall be by official action of the Health Officer, who shall duly consider all relevant matter presented during the comment period; and

(3) Nothing shall prohibit the Health Officer from adopting emergency administrative rules to the minimum extent necessary without notice to avoid an immediate threat to public health.

D. The Administrative Officer is hereby authorized to develop a fee schedule to cover all of the activities delineated in this Ordinance. Any proposed fees shall become effective upon approval by resolution of the Board of Supervisors. The Local Agency shall not accept for review any application, nor issue any permit, nor in any manner take any official action until the appropriate fees are paid.

E. Where the provisions of any local, State, or Federal regulation conflicts with this Ordinance, the stricter regulation shall apply.

700-030 DEFINITIONS

Administrative Officer - “Administrative Officer” means the Director of Development Services.

Administrative Rule - “Administrative Rule” means a standard, statement of policy, or other statement of general applicability, that is intended to be judicially enforceable and implements, interprets or makes specific the requirements of this Ordinance and Manual, or describes the procedures or practices of the Department.

Alternative System - “Alternative System” means any on-site sewage system other than a conventional gravity or pressure distribution system.

Appeals Board - “Appeals Board” means the Environmental Health Appeals Board appointed by the Board of Supervisors. The Appeals Board shall consist of a commercial installer, a registered environmental health specialist, a professional engineer, a member of the public, and a medical doctor specializing or possessing training in an environmental or public health related field.

Approved - “Approved” means a written statement of acceptability, in terms of the requirements in this Ordinance, issued by the Health Officer or the Regional Water Quality Control Board.

Area of Special Concern - “Area of Special Concern” means an area of definite boundaries delineated by the Health Officer, after consultation with the Regional Water Quality Control Board, where additional requirements for on-site sewage systems may be necessary to reduce potential failures, or to minimize negative impacts of on-site sewage systems upon public health.

Authorized Professional - “Authorized Professional” means a California State Registered Environmental Health Specialist, California State Registered Civil Engineer, California State Registered Geotechnical Engineer, California State Certified Engineering Geologist or a Certified Professional Soil Scientist.
Bedroom - “Bedroom” means any room in a dwelling unit with a floor area equal to or greater than 70 square feet that could reasonably be used as a bedroom. For example, rooms such as lofts, sewing rooms, offices, and game rooms shall be considered bedrooms. Kitchens, bathrooms, laundry rooms, and other rooms such as family rooms and living rooms with large (≥48") arched doorways or half walls opening onto living areas shall not be considered as bedrooms. The final determination will be by the Building Division of Sutter County.

Board of Supervisors - “Board of Supervisors” means the Sutter County Board of Supervisors.

Building Sewer - “Building Sewer” means that part of the system of drainage piping which conveys sewage into the septic tank or other treatment facility outside the building or structure within which the sewage originates.

Cesspool - “Cesspool” means a pit receiving untreated sewage and allowing liquid to seep into the surrounding soil or rock. Cesspools are specifically prohibited by this ordinance.

Commercial Installer - “Commercial Installer” means a person licensed by the California Contractor State License Board in accordance with the California Business and Professions Code and meeting the requirements of this Ordinance to install and/or repair on-site sewage systems.

Conforming System - “Conforming System” means any on-site sewage system, except an experimental system, that meets any of the following criteria:

1. A system in full compliance with the new construction requirements of this Ordinance;

2. A system approved, installed, and operating in accordance with previous regulations pertaining to on-site sewage systems, unless considered a failing system under Section 700-160 of this Ordinance; or

3. A system (including a repaired system) that has been granted a waiver by the Local Agency or the RWQCB.

Covenant - “Covenant” means a recorded agreement stating that certain activities and/or practices are required or prohibited.

Cover - “Cover” means soil material that is used to overlay the treatment and disposal area.

Cuts and/or banks - “Cuts and/or banks” means any naturally occurring or man-formed slope which is greater than one hundred percent (forty-five degrees) and extends vertically at least five feet from the toe of the slope to the top of the slope.

Deep Trench System - “Deep Trench System” means a system in which the effluent is distributed to trenches with a depth greater than 36 inches without receiving treatment in the upper soil horizons.
**Department** - “Department” means the Sutter County Department of Development Services, Environmental Health Division (Local Agency).

**Design Flow** - “Design Flow” means the daily sewage flow in gallons per day that a single-family residence or non-residential facility is expected to produce during peak operating flows and from which the drainfield is sized.

**Designer** - “Designer” means an authorized professional.

**Development** - “Development” means the creation of a residence, structure, facility, mobile home park, subdivision, planned unit development, site, area, or activity resulting in the production of sewage.

**Drainfield** - “Drainfield” means the treatment and disposal component of an OSS receiving effluent from a septic tank or other pretreatment device and transmitting it into native soil.

**Drainage Course** - “Drainage Course” means a natural or man-made open depression created and maintained to transport storm water away from the surrounding property, structure, and/or encumbrances.

**Effective Soil Depth** - “Effective Soil Depth” means the depth of suitable native soil above a restrictive layer.

**Effluent** - “Effluent” means liquid discharged from a septic tank or other on-site sewage system component.

**Effluent Sewer** - “Effluent Sewer” means that part of the system drainage piping that conveys partially treated effluent from the septic tank or other treatment facility into a distribution unit or drainfield.

**Emergency Repair** - “Emergency Repair” means repair of a failing septic system where immediate action is necessary (1) to prevent sewage from backing up into a dwelling or building or (2) to fix a broken pressure sewer pipe.

**Equivalent Dwelling Unit** - “Equivalent Dwelling Unit” means:

1. A single-family residence (≤ 4 bedrooms); or
2. Six hundred (600) gallons of sewage per day where the proposed development is a non-residential facility.

**Expansion** - “Expansion” means a change in a residence, facility, site, or use that:

1. Causes the waste strength or flows to exceed the existing treatment or disposal capability of an on-site sewage system.
2. Reduces the treatment or disposal capability of the existing on-site sewage system or
the replacement area. For example, a shop, building addition, pool, or impervious area that encroaches into the primary or replacement area, or any other activity reducing the capability of the soil to maintain design acceptance rates.

**Failing System** - "Failing System" means the presence of any of the conditions delineated in Section 700-160-B, or a system or system component listed under Section 700-160-C of this Ordinance.

**Gravity System** - "Gravity System" means a conventional on-site sewage system consisting of a septic tank and a drainfield with gravity distribution of the effluent.

**Groundwater** - "Groundwater" means subsurface water occupying the zone of saturation, either permanently, or seasonally. Indication may be demonstrated by one or both of the following methods:

1. Water seeping into or standing in an open excavation or monitoring well from the surrounding soil.

2. The presence of redoximorphic soil features (or soil mottles) caused by intermittent periods of saturation and drying, and may be indicative of poor aeration and impeded drainage.

**Health Hazard** - "Health Hazard" means a condition or situation where disease potential exists, and if left unabated the disease potential may increase, leading to a public health emergency.

**Health Officer** - "Health Officer" means the Health Officer appointed by the Board of Supervisors, or a representative authorized by and under the direct supervision of the appointed Health Officer or the Administrative Officer.

**Holding Tank Sewage System** - "Holding Tank Sewage System" means an on-site sewage system which incorporates a holding tank, designed and constructed to receive and retain sewage, the services of a septic tank pumper, and off-site treatment and disposal of the sewage generated.

**Inactive System** - "Inactive System" means an OSS that is connected to a structure that has not been served by electrical power during the previous six (6) year period or that has been installed but has not been connected to a structure within six (6) years of the date of final approval.

**Local Agency** - Local Agency (LA) means the Environmental Health Division of the Sutter County Development Services Department.

**May** - "May" means discretionary, permissive, or allowed.

**Minimum Usable Sewage Disposal Area (MUSDA)** - "Minimum Usable Sewage Disposal Area" means the minimum area of the parcel meeting the requirements of this Ordinance for the installation of an on-site sewage system and its replacement area.

**Modification** - "Modification" means any change in an OSS component without a change in the design capacity. Requires a site plan and approval by the Department.
Native Soil - “Native Soil” means undisturbed soil that exhibits the same structure, texture, and permeability as the area in question.

Net Land Area - “Net Land Area” means the total parcel area excluding surface water, road easements, right-of-ways, and drainage and utility easements.

New Installation - “New Installation” means any system not defined as repair, expansion, or modification.

Non-Conforming Repair - “Non-Conforming Repair” means a repair or replacement of an existing on-site sewage system that cannot meet the new installation requirements of this Ordinance due to soil or site limitations. A non-conforming repair includes:

1. An OSS repair that must utilize the treatment standards shown in Table VI of Section 700-170-D in lieu of compliance with Section 700-080 for vertical separation and/or horizontal setbacks from surface waters or wells; and/or

2. An OSS repair in which the drainfield or other OSS component cannot meet the new system design and installation requirements of Section 700-150 due to insufficient replacement area. Also referred to as a partial repair.

Non-Residential Facilities - “Non-Residential Facilities” means any facility that is constructed or used for commercial, industrial, institutional, agricultural, or recreational purposes.

On-Site Sewage System (OSS) - “On-Site Sewage System (OSS)” means an integrated arrangement of components for a residence, non-residential facility, or other place not connected to a public sewer system which:

1. Conveys, stores, treats, and/or provides subsurface soil treatment and disposal of sewage on the property where it originates, or upon adjacent or nearby property; and

2. Includes piping, treatment devices, other accessories, and soil underlying the drainfield and replacement area.

Ordinary High-Water Mark (OHWM) - “Ordinary High-Water Mark” means the mark on all lakes, reservoirs, rivers, streams, and ponds where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil and vegetation a character distinct from that of the abutting upland. In any area where the ordinary high-water mark is not evident, the OHWM adjoining static freshwater shall be the line of mean high water and the OHWM for rivers located within man-made levees shall be the 10-year flood frequency line.

Owner of Record - “Owner of Record” means the owner of real property as shown in the records of the Sutter County Recorder’s Office.

Operational Permit - “Operational Permit” means a permit issued by the Department for a specified
period for the operation and/or use of an on-site sewage system that has special operational or maintenance needs.

**Permit** - “Permit” means a written certificate issued by the Department allowing an activity under the provisions of this Ordinance and Manual.

**Person** - “Person” means an individual, firm, association, company, organization, partnership, corporation, governmental entity, or any other entity of any kind. “Person” also includes an applicant, a permit holder, an authorized agent of any entity, or any third party acting on behalf of any entity.

**Pressure Distribution System** - “Pressure Distribution System” means a system designed to uniformly distribute septic tank or other treatment unit effluent under pressure.

**Prior Approval** - “Prior Approval” means any valid written approval or permit pertaining to a specific septic system application that was issued before the effective date of this Ordinance.

**Proprietary Device** - “Proprietary Device” means any device classified as an alternative system or a component thereof that is held under a patent, trademark, or copyright.

**Public Sewer System** - “Public Sewer System” means a community sewage system under permit from the Regional Water Quality Control Board which is owned or operated by a city, town, municipal corporation, county, political subdivision of the state, or other approved ownership consisting of a collection system and necessary trunks, pumping facilities, and a means of final treatment and disposal.

**Redoximorphic Soil Features** - “Redoximorphic Soil Features” means the presence of soil mottles, or low-chroma colors, manganese and/or iron nodules, concretions, masses; depletions of iron and/or clay; and/or reduced matrices which may indicate the presence of groundwater.

**Regulation** - “Regulation” means a statute, administrative rule, policy or adjudicatory decision that is adopted under the authority of the Sutter County Board of Supervisors, the State of California, or the Federal Government.

**Repair** - “Repair” means the restoration or replacement of a failed on-site sewage system.

**Replacement Area** - “Replacement Area” means an area of land approved for the installation of an on-site sewage system and dedicated for replacement of the OSS in the event of its failure.


- **Residential Effluent Waste Strength**
  - < 230 mg/L BOD₅ (Biochemical Oxygen Demand)
  - < 150 mg/L TSS (Total Suspended Solids)
  - < 25 mg/L FOG (Fats, Oils, and Greases)
Restrictive Layer - “Restrictive Layer” means a layer that impedes the movement of water, air, and growth of plant roots; including, but not limited to, groundwater tables, hardpans, claypans, fragipans, compacted soils, bedrock, unstructured clay soils or unsuitable soils.

RWQCB - “RWQCB” means the Central Valley Regional Water Quality Control Board.

Seepage Pit - “Seepage Pit” means an excavation of a pit more than three (3) feet deep designed to dispose of septic tank effluent to underlying soils that are more permeable without receiving treatment in the upper soil horizons. Seepage pits may also be referred to as dry wells.

Septage - “Septage” means the mixture of solid wastes, scum, sludge, and liquids pumped from septic tanks, pump tanks, holding tanks, and other OSS components.

Septic Tank - “Septic Tank” means a watertight receptacle which receives the discharge of sewage from a building sewer; and is designed and constructed to permit the separation of settleable and floating solids from the liquid, and detention and digestion of the organic matter, prior to discharge of the liquid portion.

Septic Tank Pumper - “Septic Tank Pumper” means a person registered by the Department who cleans and pumps septic tanks, pump tanks, holding tanks, chemical toilets, or other sewage.

Sewage - “Sewage” means urine, feces, and the water carrying human wastes; including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other facilities.

Shall - “Shall” means mandatory.

Shrink-swell soil - “Shrink-swell soil” means that the clay component of the soil has an expanding crystal and very small particle size, which results in wide, deep cracks after prolonged drying, and closed-up tightness after becoming saturated with water. Shrink-swell soils are also known as expansive clays, 2:1 clays, or vertisols.

Site Evaluation - “Site Evaluation” means evaluation of the soil profile and landscape features of a specific parcel or location for the purpose of determining whether the site complies with the requirements of this Ordinance for the installation of an on-site sewage system.

Soil Log - “Soil Log” means a detailed description of the soil profile or mantle, and other soil characteristics such as color, texture, structure, and density to provide information on the soil’s capacity to act as an acceptable treatment and disposal medium for sewage.

Soil Type - “Soil Type” means a textural classification of fine earth particles and coarse fragments as described in Table II of Section 700-090-B(9) of this Ordinance.

Statute - “Statute” means any ordinance of the Sutter County Board of Supervisors, or any State or Federal law.
Subdivision - “Subdivision” means any division of land, as defined in section 1400-150 of the Sutter County Ordinance Code, as now or as hereafter amended.

Surface Water - “Surface Water” means any body of water that either flows or is contained in natural or artificial depressions for continuous periods of thirty (30) days or more. Such bodies include, but are not limited to, natural and artificial lakes, ponds, rivers, streams, marshes, and unlined irrigation canals; but shall exclude surface water contained by flood-irrigated crops, a culverted drainage course, concrete impoundment, or other protected waterway with an impervious lining.

Swimming Pool - “Swimming Pool” means any constructed or prefabricated structure intended for swimming or recreational bathing that contains water over eighteen (18”) deep. Swimming pools may be in-ground or above-ground structures, and shall include doughboys, spa pools, and any other special purpose pools.

Treatment Standard 1 - “Treatment Standard 1” means a thirty-day average of less than ten (10) milligrams per liter of biochemical oxygen demand (five (5) day BOD₅), ten (10) milligrams per liter of total suspended solids (TSS), and a thirty (30) day geometric mean of less than two hundred (200) fecal coliform bacteria per one hundred (100) milliliters.

Treatment Standard 2 - “Treatment Standard 2” means a thirty-day average of less than ten (10) milligrams per liter of biochemical oxygen demand (five (5) day BOD₅), ten (10) milligrams per liter to total suspended solids (TSS), and a thirty (30) day geometric mean of less than eight hundred (800) fecal coliform bacteria per one hundred (100) milliliters.

Undocumented On-Site Sewage Disposal System - “Undocumented On-Site Sewage Disposal System” means an installed on-site sewage disposal system for which no permit is on file with the Department.

Unsuitable Soils - “Unsuitable Soils” means soils that are not capable of adequate treatment and/or disposal of sewage effluent and include:

1. Silty clays, weak or structureless sandy clays and clays, silt, and strongly cemented, compacted, or massive soils;
2. Very gravelly sands having ≥35% and <60% gravel and coarse fragments by volume;
3. All extremely gravelly soils having ≥60% gravel and coarse fragments by volume;
4. Soils that have a clay content of 45% or more as determined by particle size analysis; and
5. Soils having a percolation rate of <1 mpi or >240 mpi.

Vertical Separation - “Vertical Separation” means the depth of unsaturated native soil of Soil Types 1-6 between the bottom of a drainfield and the highest seasonal water table, a restrictive layer, or unsuitable soils.
700-040  APPLICABILITY

A. Every residence, place of business, or other building or place where persons congregate, reside, or are employed in which sewage is generated that is not connected to a public sewer system shall be connected to an on-site sewage system (OSS) meeting the requirements of this Ordinance and Manual.

B. An approved OSS permit issued prior to the effective date of this Ordinance and Manual shall be valid for the period of time that is stated on the permit. An approved OSS permit that was issued prior to the effective date of this Ordinance and Manual may be renewed according to the regulations existing at the time the permit was issued.

C. An approved site evaluation issued prior to the effective date of this Ordinance and Manual shall be valid for a period of three (3) years from the date of issuance.

D. The Regional Water Quality Control Board (RWQCB) has authority and approval over:

   (1) Public sewer systems;

   (2) Industrial wastewater treatment facilities;

   (3) Package treatment systems or other waste systems using mechanical treatment or lagoons; and

   (4) On-site sewage systems with design flows through any common point above five thousand (5,000) gallons per day.

E. The Department has authority and approval over:

   (1) On-site sewage systems with design flows through any common point up to five thousand (5,000) gallons per day;

   (2) Any on-site sewage system with a design flow greater than five thousand (5,000) gallons per day up to ten thousand (10,000) gallons per day may be considered on a case-by-case basis after consultation with the RWQCB and for which jurisdiction has been transferred by written agreement to the Department.

F. Sewage that is not treated through a public sewer system shall not be discharged to surface water, to the surface of the ground, or underground unless the discharge is permitted by RWQCB.

G. When public sewer services are available within two hundred (200) feet of the Building or exterior drainage facility as measured along the usual or most feasible route of access, the owner of record must connect the residence or facility to the public sewer system if:

   (1) The residence or facility is served by an OSS which has failed; or

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(2) The residence or facility does not have an OSS.

Exceptions may be granted by the Environmental Health Director to Subsection G of this Section where the sewer main is not adjacent to the property line. Factors that may be considered prior to making a decision to grant or deny an exception include, but are not limited to, the following:

(1) Feasibility and cost of connection (connection and construction costs are greater than two times the replacement OWTS costs); and

(2) Reasonable expectation for future expansion plans of the sewer utility; and

(3) Willingness of the applicant to commit to connect to the public sewer in the future; and

(4) Suitability of the parcel for siting an on-site wastewater system and a determination that no impairment to drinking water sources is likely to result.

H. The owner of record of a residence or other facility served by a non-conforming repair shall abandon the OSS according to the requirements specified in Section 700-190, and shall connect the residence or other facility to a public sewer system if the sewer utility allows the sewer connection and:

(1) Connection is deemed necessary to protect public health by the Health Officer; or

(2) A public sewer becomes available within two hundred (200) feet of the nearest Building or exterior drainage facility as measured along the usual or most feasible route of access.

700-050 ALTERNATIVE SYSTEMS AND PROPRIETARY DEVICES

A. Alternative Systems may be permitted by the LA for the repair or upgrading of any existing System and for new construction on any legally created Lot where:

(1) It is determined that sewage cannot be disposed of in a sanitary manner by a Standard System; or

(2) It is determined that a Supplemental Treatment System and/or an alternative Dispersal System can provide greater protection to Groundwater and/or public health than a Standard System.

B. All Supplemental Systems shall be installed by a Contractor. Where the installation includes a proprietary treatment system certified and appropriately listed by National Sanitation Foundation for the treatment of wastewater, the Contractor shall also possess any required manufacturer certifications, as applicable.

C. The LA:

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(1) May require performance monitoring or sampling of any alternative system; and because of the specialized design and performance requirements for Alternative Systems, Alternative Systems may be subject to an Operating Permit. Operating Permit requirements include periodic monitoring, maintenance and reporting requirements in addition to payment of a periodic fee. The periodic monitoring information shall also be submitted to the LA and designer on record.

(2) Shall submit copies of evaluation reports to the RWQCB, if required, when alternative system performance is evaluated.

700-060 NON-RESIDENTIAL ON-SITE SEWAGE SYSTEMS

A. An authorized professional shall design on-site sewage systems for non-residential facilities and shall certify that the proposed on-site sewage system meets the requirements of this Ordinance and will adequately serve a proposed facility.

B. When an OSS is proposed to treat and dispose wastewater that is not residential sewage, the applicant shall have an authorized professional submit to the LA:

(1) Information which shows that the sewage is not industrial wastewater;

(2) Information that establishes the sewage waste strength and identifies chemicals present in the sewage that are not found in residential sewage. Significant amounts of Recreational Vehicle (RV) wastes are prohibited. Significant amounts mean amounts greater than incidental dumping such that the volume, frequency, overall strength or chemical additives preclude definition as residential sewage;

(3) A design that provides treatment equal to that required for residential sewage; and

(4) An approved operation and maintenance contract between the system owner and qualified operation and maintenance provider (certified by the proprietor of the treatment unit), if applicable.

700-070 ACTIVITIES REQUIRING A PERMIT

A. No person shall install, repair, modify, expand, or destroy an OSS without a valid permit.

B. No person shall operate an alternative system without a valid permit.

C. Persons applying for a building permit for the construction of a building that will necessitate an on-site sewage system shall obtain a permit from the LA before starting construction. No permit shall be issued without an approved site evaluation.

D. Inactive systems shall not be utilized for sewage treatment and disposal unless the owner of record demonstrates that the system is in compliance with this Ordinance or a special permit.

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is granted by the LA under Section 700-280.

E. If a person fails to comply with the terms of a permit issued under this Ordinance, or engages in activities regulated under this Ordinance without the appropriate permit(s), the Health Officer may issue a written order to immediately stop or suspend all work, except that which is necessary to bring the project into compliance with this Ordinance.
A. Every new on-site sewage system shall meet the minimum horizontal separations shown in Table I, Minimum Horizontal Separations:

<table>
<thead>
<tr>
<th>Items Requiring Setback</th>
<th>From edge of drainfield and replacement area</th>
<th>From septic tank, holding tank, pump tank, and distribution boxes</th>
<th>From undocumented OSS and seepage pits</th>
<th>From building sewer, and non-perforated transport line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-public well</td>
<td>100 ft.</td>
<td>50 ft.</td>
<td>150 ft.</td>
<td>50 ft.</td>
</tr>
<tr>
<td>Public water supply well(^\text{9,10,11})</td>
<td>&gt;150 ft.</td>
<td>100 ft.</td>
<td>&gt;150 ft.</td>
<td>100 ft.</td>
</tr>
<tr>
<td>Surface water(^\text{1,2,12,13})</td>
<td>100 ft.</td>
<td>50 ft.</td>
<td>100 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Flood-irrigated crops, Retention ponds</td>
<td>50 ft.</td>
<td>50 ft.</td>
<td>50 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Properly destroyed well(^\text{3})</td>
<td>10 ft.</td>
<td>10 ft.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Pressurized water supply line(^\text{4})</td>
<td>10 ft.</td>
<td>10 ft.</td>
<td>10 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Irrigation/drainage pipe</td>
<td>10 ft.</td>
<td>5 ft.</td>
<td>10 ft.</td>
<td>5 ft.</td>
</tr>
<tr>
<td>Swimming Pool</td>
<td>8 ft.</td>
<td>8 ft.</td>
<td>8 ft.</td>
<td>5 ft.</td>
</tr>
<tr>
<td>Property line(^\text{5,6})</td>
<td>10 ft.</td>
<td>5 ft.</td>
<td>10 ft.</td>
<td>N/A</td>
</tr>
<tr>
<td>Building foundation(^\text{6})</td>
<td>8 ft.</td>
<td>5 ft.</td>
<td>8 ft.</td>
<td>5 ft.</td>
</tr>
<tr>
<td>Interceptor or curtain drain/drainage courses/ stormwater disposal systems and detention ponds</td>
<td>50 ft.</td>
<td>10 ft.</td>
<td>50 ft.</td>
<td>N/A</td>
</tr>
<tr>
<td>Down-gradient(^\text{7})</td>
<td>25 ft.</td>
<td>10 ft.</td>
<td>25 ft.</td>
<td>N/A</td>
</tr>
<tr>
<td>Up-gradient(^\text{7})</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Down-gradient cuts or banks with at least 5 ft. of undisturbed soil above a restrictive layer due to a structural or textural change(^\text{8})</td>
<td>4x height</td>
<td>10 ft.</td>
<td>4x height</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>50 ft. max</td>
<td></td>
<td>50 ft. max</td>
<td></td>
</tr>
<tr>
<td>Public Utility Easements</td>
<td>10 ft.</td>
<td>10 ft.</td>
<td>10 ft.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

\(^\text{1}\) If surface water is used as a public drinking water supply, the designer shall locate the OSS outside of the

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required sanitary control area.

3 Measured from the ordinary high water mark.

3 Before any drainfield can be placed within one hundred (100) feet of a well, the owner of record shall obtain a well destruction permit from the Department and have the well destroyed by a licensed well driller.

4 The LA may approve a water supply line within ten (10) feet of an OSS component if the water line is sleeved in schedule 40 pipe that extends a minimum of 10 feet from the OSS component, and is installed above the highest liquid level of any sewage or sewage effluent.

5 The LA shall require a fifty (50) foot setback to property lines adjacent to agriculturally viable property from the edge of the drainfield and replacement area to ensure that the OSS is not impacted by flood irrigation. The Health Officer shall also require a fifty (50) foot setback to property lines from the OSS when individual wells are to be installed and the minimum distance between the drainfield and wells cannot be assured.

6 The LA may allow on repairs, a reduced horizontal separation to not less than two (2) feet where the property line, easement line, or building foundation is up-gradient.

7 The item is down-gradient when liquid will flow toward it upon encountering a water table or a restrictive layer. The item is up-gradient when liquid will flow away from it upon encountering a water table or restrictive layer.

8 The LA may increase the setback to down-gradient cuts or banks with less than 5 feet of undisturbed soil above a restrictive layer due to a structural or textural change.

9 If the dispersal system is less than 10' in depth, then the setback must be greater than 150' from public water supply well.

10 If the dispersal system is greater than 10' in depth, then the setback must be greater than 200' from public water supply well.

11 If the dispersal system is greater than 20' in depth, and less than 600' from the public water supply well, then the setback must be greater than the distance for the two-year travel time of microbiological contaminants, as determined by a qualified professional.

12 If the dispersal system is less than 1,200' from a public water system's surface intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 400' from the high-water mark of the surface water body.

13 If the dispersal system is greater than 1,200', but less than 2,500', from public water systems surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 200' from high water mark of surface water body.

B. OSS design and/or installation shall only occur where:

(1) The slope is less than thirty (30) percent;

(2) The area of the proposed OSS and the replacement area is not subject to:

(a) Encroachment by buildings or construction such as placement of swimming pools, patios, stormwater drainage systems or facilities, interceptor drains, drainage courses, and/or underground utilities;

(b) Cover by impervious material;

(c) Vehicular or animal traffic; or

(d) Other activities adversely affecting the soil or OSS performance; and

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(3) Sufficient replacement area exists to treat and dispose one hundred (100) percent of the design flow meeting current standards.

700-090 SOIL AND SITE EVALUATION

A. Applications for site evaluations and permits shall be made to the LA. Prior to beginning the construction process, a person proposing the installation, repair, modification, connection, or expansion of an OSS shall:

(1) Submit the following general information to the LA:

(a) Name and address of the property owner and the applicant;
(b) Parcel number and address of the site, if available;
(c) Source of drinking water supply;
(d) Identification of whether the property is within the boundaries of a recognized sewer utility district, or a City Sphere of Influence;
(e) Size of the parcel;
(f) Type of permit for which application is being made, for example, new installation, repair, expansion, modification, abandonment, or operational;
(g) Source of sewage, for example, residential, restaurant, or other type of business;
(h) Number of bedrooms, if applicable;
(i) Name of the designer, if applicable;
(j) Name of the commercial installer and certificate of Workman's Compensation Insurance coverage, if applicable;
(k) Date of application; and
(l) Signature of applicant;

(2) Submit a complete, detailed, and dimensional site plan to the LA that includes:

(a) Designated areas for the proposed on-site sewage system and the replacement area;
(b) The location of all soil profile excavations and other soil tests for the OSS;

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(c) General topography and/or slope of the site;

(d) Site drainage characteristics;

(e) The location of existing and proposed encumbrances affecting system placement, including but not limited to:

i. Legal access and easement documents if any component of the OSS is not on the parcel where the sewage is generated;

ii. Water sources and supply lines;

iii. Wells;

iv. Surface water;

v. Flood-irrigated crops;

vi. Abandoned wells;

vii. Buildings;

viii. Property lines and lines of easement;

ix. Interceptors such as footing drains, curtain drains, and drainage courses;

x. Cuts, banks, and fills;

xi. Driveways and parking areas;

xii. Existing OSS; and

xiii. Location of underground utilities and utility easements; and

(f) An arrow indicating north and site plan scale (engineer scale only);

(3) Prepare a minimum of one (1) representative soil profile excavation within the primary drainfield area and a minimum of one (1) representative soil profile excavation within the replacement area (additional soil excavations may be required):

(a) To allow examination of the soil profile in its original position by:

i. Excavating pits of sufficient dimensions to enable observation of soil characteristics by visual and tactile means to a depth of five (5) feet deeper than the anticipated bottom of the drainfield; or
ii. Stopping at a shallower depth if a water table or restrictive layer is encountered; and

(b) To allow determination of the soil texture, structure, color, compaction, water absorption capabilities or permeability, and elevation of the maximum groundwater level; and

(4) Assume responsibility for constructing and maintaining the soil profile excavation in a manner to reduce potential for physical injury by:

(a) Placing excavated soil no closer than two (2) feet from the excavation;

(b) Providing safe ingress and egress to a depth of four (4) feet, then scooping out a portion from the floor in order to observe the required seven (7) feet of soil face; and

(c) Filling the excavation upon completion of the soil log.

B. In performing soil and site evaluations, the LA or authorized professional shall:

(1) Record a minimum of one (1) representative soil log within the primary drainfield area and a minimum of (1) representative soil log within the replacement area in order to evaluate conditions;

(2) Record the groundwater elevation, the date of the observation, and the probable maximum height by evaluating the presence of any redoximorphic soil features;

(3) Record the topography of the site;

(4) Record the drainage characteristics of the site and the potential for flooding;

(5) Record the location and depth of restrictive layers, and effective soil depth;

(6) Use the site evaluation procedures and terminology in accordance with the *EPA Design Manual: On-site Wastewater Treatment and Disposal Systems*, United States Environmental Protection Agency, EPA-625/1-80-012, October 1980 (or the relevant sections of any EPA document that replaces the 1980 EPA Design Manual), except where modified by, or in conflict, with this Ordinance;

(7) Use the soil names and particle size limits of the United States Department of Agriculture, Soil Conservation Service (SCS) soil classification system;

(8) Determine texture, structure, compaction, and other soil characteristics that affect the treatment and water movement potential of the soil in accordance with ASTM D5921; and

(9) Classify the soil according to Table II, Soil Textural Classification:
Table II
Soil Textural Classification

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Soil Textural Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coarse sands, Medium sands</td>
</tr>
<tr>
<td>2</td>
<td>Fine sands, Loamy sands</td>
</tr>
<tr>
<td>3</td>
<td>Sandy loams, Loams</td>
</tr>
<tr>
<td>4</td>
<td>Silt loams, that are porous and have well-developed structure</td>
</tr>
<tr>
<td>5</td>
<td>Other Silt loams, Sandy clay loams, Clay loams, Silty clay loams</td>
</tr>
<tr>
<td>6</td>
<td>Sandy clays &amp; Clays of low clay content (&lt;45%) with moderate or strong structure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unsuitable for Treatment or Disposal</th>
<th>Silty clays, weak or structureless sandy clays and clays, silt, and strongly cemented, compacted, or massive soils (&gt;240 mpi)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very gravelly sands and all extremely gravelly soils (&lt;1 mpi)</td>
</tr>
</tbody>
</table>

C. Site Approval

(1) The LA:

(a) May require additional soil testing as outlined in Section 700-110, Extended Site Evaluations;

(b) May require applications for sites within high water table areas to be evaluated during the months of high water table conditions. Those applications shall be held in accordance with the terms and conditions of Section 700-120; and

(c) May waive the required number of soil logs if adequate soil information has previously been developed; that is, that no disturbance of the soil has significantly modified the soil conditions.

(2) Site approval shall be issued where the site evaluation shows compliance with this Ordinance.

(3) Approved site evaluations on existing parcels shall be valid for a period of three (3) years from the date of approval. Approved site evaluations for parcels within a proposed subdivision or lot line adjustment shall be valid for a period of three (3) years from the date of recordation. Approved site evaluations shall be transferable, but they shall not be renewed.
(4) The LA shall render a decision or notify the applicant of the reason for delay on all applications within twenty (20) working days of the site evaluation or within twenty (20) working days of the submitted site evaluation data by an authorized professional.

700-100 ON-SITE SEWAGE SYSTEM PERMITS

A. When an application for an on-site sewage system conforms to the provisions of this Ordinance and requirements of other pertinent regulations, the LA shall issue a permit to the applicant.

B. A sewage disposal permit shall not be issued by the LA unless:

(1) The information obtained under Section 700-090 satisfies the requirements of this Ordinance and other local regulations; and

(2) The applicant submits a detailed system design that is approved by the LA and satisfies the requirements of Section 700-150. The detailed system design must include:

(a) A scaled, dimensional drawing showing the proposed location of all OSS components and replacement area;

(b) Vertical cross-section drawings showing:

i. The depth of the drainfield, the vertical separation, and depth of soil cover; and

ii. Other OSS components to be constructed or installed at the site;

(c) Calculations and assumptions supporting the proposed design, including:

i. The soil type;

ii. The hydraulic loading rate in the drainfield;

iii. The design flow of the OSS; and

(d) Such additional information as required by the Sutter County On-Site Manual.

C. When the LA issues a permit, they shall:

(1) Identify the permit as a new installation, repair, expansion, modification, or operational permit;

(2) Specify the expiration date on the permit; and

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(3) State the period of validity for operational permits, the date by which an operational permit must be renewed, and the conditions of renewal.

D. The Health Officer may amend, suspend, revoke, or deny a permit for reasonable cause. Reasonable cause may include, but is not limited to:

(1) Installation of an OSS that creates a health hazard;

(2) Misrepresentation or concealment of material fact in information submitted to the Health Officer; or

(3) Failure to meet conditions of the permit or the requirements of this Ordinance and manual.

E. The LA may stipulate additional requirements for a particular permit if a health hazard would otherwise occur.

F. New installation and expansion permits shall be valid for a period of two (2) years from the date of issuance. Such permits are not transferable or renewable.

G. Repair and modification permits shall be valid for a period of six (6) months from the date of issuance and shall not be transferable. Repair and modification permits may be renewed for an additional six (6) months if the LA determines that a health hazard does not exist.

H. Operational permits for other on-site sewage systems that have special operational or maintenance needs shall be valid for a period of time that shall be set by the Health Officer through the adoption of administrative rules under Section 700-020-C. All operational permits are transferable and may be renewed subject to conditions specified by the Health Officer.

I. The LA has the authority to certify that the operation of an OSS complied with the requirements of this Ordinance on the date the LA inspected the OSS.

700-110 EXTENDED SITE EVALUATION

A. The LA shall require additional soil testing prior to site approval for types 5 and 6 soils and as necessary in other soils to determine if the site meets the minimum requirements of this Ordinance. Additional soil testing shall include:

(1) Percolation testing; and/or

(2) Particle size analysis (hydrometer testing)

C. Whenever the testing of Section 700-110-A is not required, the owner or authorized professional may choose to have additional, optional testing and evaluation done.
D. All testing shall be done by an authorized professional and according to testing standards as required by this ordinance and manual.

E. All soils analysis shall be completed at a commercial engineering testing laboratory.

F. Percolation testing shall only be considered by the Department if:

1. The soil information required by Section 700-090-B has also been submitted to the Department;

2. Soil application rates proposed do not exceed the maximum hydraulic loading rates for the soil type listed in Section 700-150-C, Table IV;

3. The testing is conducted under saturated soil conditions;

4. At least three (3) percolation tests are performed in each primary and replacement area (total minimum of six) for each depth to be tested; and

5. At least 80% of the percolation test hole results fall within the range allowed for use of an OSS for sewage disposal.

700-120 WATER TABLE EVALUATION

A. Applications for the evaluation and/or installation of an OSS shall be subject to winter water table evaluations when a determination of the maximum groundwater level cannot be made.

B. Applications for the evaluation and/or installation of an OSS may be subject to a water table evaluation period not to exceed thirty (30) days during summer (June-August) irrigation periods if it is suspected that the groundwater levels are influenced by such agricultural activities.

C. The LA’s decision to hold a site for winter water table evaluation shall be based on the following conditions:

1. Historic high water table information documented in county development files;

2. Alterations of landscape, or filling and grading practices, which in the opinion of the Health Officer could alter the flow of surface/ground water at the site;

3. Redoximorphic soil features within the effective soil depth;

4. Restrictive layer at a depth that may create high seasonal groundwater levels;

5. Observations of wetland vegetation;

6. Proximity to water bodies, including but not limited to canals, marshes, and
wetlands;

(7) Areas or parcels located in drainage and flooding problem areas; and/or

(8) High water table measurements recorded at the time of initial site evaluation.

D. Winter water table evaluations shall be conducted by an authorized professional and shall include at a minimum, monitoring of the groundwater levels every two (2) weeks during the months of January, February, March, and April immediately following the initial site evaluation.

E. Any application submitted after the beginning of the winter water table evaluation period may require evaluation during the following winter water table evaluation season.

F. Results of a winter water table evaluation shall be submitted to the Department within one (1) month after the conclusion of the evaluation period for review. The LA’s decision shall be based on an evaluation of:

(1) The site conditions recorded during the evaluation period; and

(2) The amount of rainfall that equals or exceeds 80% of the seasonal mean rainfall for the period of November through April. This number shall be calculated using data from the Sacramento reporting station of the Department of Water Resources, Division of Flood Management.

G. All winter water table evaluation seasons (November through April) with recorded rainfall greater than or equal to the established comparison listed in Section 700-120-F(2) shall allow for the installation of systems complying with the regulations herein.

H. The LA may increase the vertical separation and/or level of sewage treatment for those parcels evaluated during an evaluation season with less rainfall than 80% of the mean seasonal rainfall as established under Section 700-120-F(2). Such increases in vertical separation and/or treatment requirements shall be determined via analysis of the site conditions in Section 700-120-C and the manual.

I. Sites shall be denied if the water table is measured within twenty-four (24) inches of grade on any two (2) consecutive readings or if surface water setbacks cannot be maintained. If a substandard reading of less than twenty-four (24) inches is recorded, another reading shall be recorded within seven (7) days of the first substandard reading.

J. All applicants shall have the opportunity to submit results from an additional winter water table evaluation period. This evaluation shall be compared to the results obtained during the previous evaluation period and its associated rainfall.
700-130 STANDARDS FOR SUBDIVISIONS

A. Prior to the submittal of a tentative map for a subdivision, an application for a site evaluation shall be made and site approval received for each parcel within a proposed subdivision, unless parcels in the proposed subdivision will be connected to a public sewer system or a parcel is granted an exemption under Section 700-130-G.

B. Prior to the approval of a lot line adjustment, an application for a site evaluation shall be made and site approval received for each of the adjusted parcels. The LA may waive this requirement if the proposed lot line adjustment does not impact any existing OSS and replacement area, or adjust a parcel so that the minimum requirements of this Ordinance cannot be met.

C. Site evaluations for subdivisions and lot line adjustments utilizing individual on-site sewage systems shall include a minimum of two (2) representative soil logs for each proposed or adjusted parcel. The test holes shall be prepared in accordance with Section 700-090.

D. Applications for a site evaluation on a proposed subdivision or lot line adjustment must include a scaled drawing of the property which shows the location of:

1. Proposed parcel boundary lines;
2. Natural topography and landscape features;
3. Existing and proposed OSS;
4. Existing structures and encumbrances;
5. Existing and proposed wells; and
6. Surface water.

E. If alternative systems are proposed for a subdivision or a lot line adjustment, sufficient design information that includes the specific site location for both primary and replacement systems shall be provided to the LA for review to determine if the minimum requirements of this Ordinance can be met.

F. If alternative systems are proposed for a subdivision, the LA shall require specific language to be recorded on or with the parcel map or final map addressing the special design considerations and/or system design requirements.

G. For those parcels in agriculturally designated areas and in the Ag/Open Space area of FPARC proposed solely for agricultural use or other open space uses that do not generate sewage or wastewater regulated by the Department or the RWQCB, and meeting the minimum parcel size of 20 or 80 acres for the applicable soil type (i.e., orchard or field crop), established in the Sutter County General Plan 2015 Policy Document, an exemption to the requirements of
Section 700-130-A may be provided by the LA if the following condition is met:

(1) A note is recorded on or with the parcel map or final map stating that a site evaluation to determine the suitability of the proposed parcel(s) for utilizing an on-site sewage system has not been conducted nor shall any use be permitted that generates sewage or wastewater regulated by the Department or the RWQCB unless all requirements of this Ordinance, or any amendments thereto in effect at the time of development are met.

H. If individual wells are proposed for the subdivision, a one hundred (100) foot protection zone shall be established around each existing and proposed well site. The proposed well location(s) must minimize development impacts on surrounding parcels.

I. Subsequent changes to the site or soil conditions after the completion of the site evaluation may result in approval revocation or the inability to obtain site approval for the installation of an OSS.

J. When an OSS is proposed, the minimum net land area and Minimum Usable Sewage Disposal Area (MUSDA) are contained in Table III. Table III applies to any development including, but not limited to, subdivisions, lot line adjustments, non-residential facilities, and single-family residences for which an OSS is proposed.

K. The LA may waive the minimum net land area requirements of Section 700-130-J for lot line adjustments on nonconforming lots or existing lots created prior to the adoption of this Ordinance.

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Water Supply</th>
<th>MUSDA (square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private (Well)</td>
</tr>
<tr>
<td>1</td>
<td>18,000</td>
<td>1 acre</td>
</tr>
<tr>
<td></td>
<td>square feet</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>20,000</td>
<td>1 acre</td>
</tr>
<tr>
<td></td>
<td>square feet</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>25,000</td>
<td>1.5 acre</td>
</tr>
<tr>
<td></td>
<td>square feet</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30,000</td>
<td>1.5 acres</td>
</tr>
<tr>
<td></td>
<td>square feet</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1 acre</td>
<td>2 acres</td>
</tr>
<tr>
<td>6</td>
<td>2 acres</td>
<td>3 acres</td>
</tr>
</tbody>
</table>

Table III
Minimum Net Land Area Required Per Equivalent Dwelling Unit

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A. The Health Officer, after consultation with the RWQCB, may designate the following areas as areas of special concern. This designation shall not be made unless a minimum of one public hearing is held by the Health Officer within the proposed area of special concern.

(1) Sole source aquifers designated by the U.S. Environmental Protection Agency;
(2) Areas with a critical recharging effect on aquifers used for potable water;
(3) Designated public water supply wellhead protection areas;
(4) Up-gradient areas directly influencing water recreation facilities and public beaches as established under Section 115875 of the California Health & Safety Code;
(5) Areas designated as special protection areas for impaired waters and ground waters of the State of California;
(6) Drainage and flooding problem areas; and
(7) Areas identified and delineated by the Department in consultation with the RWQCB which constitute a health hazard due to the presence of failing on-site sewage systems.

B. The LA may impose more stringent requirements on new developments and take corrective measures to protect public health upon existing developments in areas of special concern, including:

(1) Additional design and/or performance standards for OSS;
(2) Larger land areas for new development;
(3) Mitigation for the impacts of development;
(4) Additional operation procedures and maintenance/monitoring protocols for OSS;
(5) Upgrades to existing OSS;
(6) Abandonment of undocumented and failing OSS; and
(7) Monitoring of ground water or surface water quality.

C. In order to reduce risk of system failures within an area of special concern, a person approved or designated by the LA shall:

(1) Inspect every OSS at a frequency determined by the LA depending on the type of
system and the constituents of concern.

(2) Submit the following written information to both the LA and the property owner within thirty days following the inspection:

(a) Location of all OSS components;

(b) Structural condition of the tank(s);

(c) Depth of accumulated scum and solids in the septic tank;

(d) Problems detected with any part of the system;

(e) Recommended and/or required maintenance;

(f) Maintenance provided at the time of inspection; and

(g) Other information as required by the LA.

(3) Immediately report failures to the LA.

D. When the Health Officer intends to designate an area of special concern, the Health Officer shall notify the Board of Supervisors of the definite boundaries of such designation, and the additional requirements for OSS to be applied within the delineated area of special concern.

700-150 OSS DESIGN AND INSTALLATION CRITERIA

A. The detailed design and construction of all OSS shall conform to this Ordinance and technical standards adopted by the Department. All pressure distribution and alternative systems shall be designed by an authorized professional.

B. The OSS shall be designed to receive all sewage from the residence or facility served unless otherwise approved by the LA. The design flow shall be established as follows:

(1) For individual residences, flows of one hundred thirty (130) gallons/day/bedroom shall be used for design purposes; and

(2) For other facilities, the typical values noted in Small and Decentralized Wastewater Management Systems, Crites & Tchobanoglous (1998), EPA Design Manual, the California Plumbing Code, or other document generally accepted as an industry standard shall be used. Any deviations shall be supported by appropriate water usage information and/or the use of low water use fixtures.

(3) The minimum design flow for an OSS shall be one hundred thirty (130) gallons per day.
C. Gravity systems and pressure distribution systems shall have the calculation of drainfield area based upon the design flows in Section 700-150-B and loading rates equal to or less than those in Table IV, Maximum Hydraulic Loading Rate for Residential Sewage, and applied only to the bottom of the excavated trench.
### Table IV
Maximum Hydraulic Loading Rate For Residential Sewage

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Soil Textural Classification</th>
<th>Percolation Rate (mpi)</th>
<th>Loading Rate (gal./ft.²/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coarse sands, Medium sands</td>
<td>1-3</td>
<td>1.2</td>
</tr>
<tr>
<td>2</td>
<td>Fine sands, Loamy sands</td>
<td>4-10</td>
<td>0.8</td>
</tr>
<tr>
<td>3</td>
<td>Sandy loams</td>
<td>11-20</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Loams</td>
<td>21-30</td>
<td>0.6</td>
</tr>
<tr>
<td>4</td>
<td>Silt loams, that are porous and have well-developed structure</td>
<td>31-60</td>
<td>0.5</td>
</tr>
<tr>
<td>5</td>
<td>Other Silt loams (weak), Sandy clay loams, Clay loams, Silty clay loams³</td>
<td>61-120</td>
<td>0.3</td>
</tr>
<tr>
<td>6</td>
<td>Sandy clays &amp; Clays of low clay content (&lt;45%) with moderate or strong structure³</td>
<td>121-240</td>
<td>0.2</td>
</tr>
</tbody>
</table>

---

1 Compacted soils, cemented soils, and/or poor soil structure may require a reduction of the loading rate or make the soil unsuitable for the installation of an on-site sewage system.

2 The maximum hydraulic loading rate for the soil type listed is to be used for calculating the drainfield area required.

3 Due to the high prevalence of clayey soils present in Sutter County, types 5 and 6 soils shall be subject to the extended site evaluation requirements of Section 700-110.

---

(1) If more than one suitable soil horizon is encountered in the soil profile, drainfield trench sizing shall be based on the most restrictive soil within twenty-four (24) inches beneath the bottom of the trench. Where particle size analysis has been conducted alternative application rates that are between the two soil classes may be considered when the results of soil testing are bordering the determination line between the soil triangle designations.

(2) The LA may allow the drainfield area calculated from Table IV to be reduced by a maximum of twenty (20) percent to account for trench sidewall infiltration if at least twelve (12) inches of drain rock is used under the distribution pipe and pressure distribution is utilized.

---

D. Effluent Treatment and Distribution

(1) The standard of effluent treatment prior to discharge and/or method of distribution in all cases shall meet or exceed the requirements contained in Table V, Effluent

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Treatment and Distribution for Soil Types and Vertical Separation.

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Vertical Separation(^1)^,(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≥1 foot to &lt;2 feet</td>
</tr>
<tr>
<td>1</td>
<td>Treatment Standard 2</td>
</tr>
<tr>
<td>2</td>
<td>Treatment Standard 2</td>
</tr>
<tr>
<td>3-5</td>
<td>Treatment Standard 2</td>
</tr>
<tr>
<td>6(^3)</td>
<td>Treatment Standard 2</td>
</tr>
</tbody>
</table>

\(^1\)A minimum effective soil depth of twenty-four (24) inches is required to utilize an OSS.
\(^2\)Depth to groundwater must be ≥5 feet for gravity distribution.
\(^3\)A mound system shall not be used in Type 6 soils.
\(^4\)A minimum of twenty-four (24) inches is required to groundwater for all initial systems.

(2) A minimum effective soil depth of twenty-four (24) inches is required to utilize an on-site sewage system for wastewater treatment and disposal.

(3) On-site sewage systems requiring more than five hundred (500) lineal feet of drainfield trench shall utilize pressure distribution.

E. Holding Tanks

(1) Persons shall not install or use holding tank sewage systems for residential development whether seasonal or year-round. This prohibition may be waived by the LA:

(a) For interim uses limited to handling emergency situations; and
(b) For repairs as permitted under Section 700-170-A (4).

(2) A person proposing to use a holding tank sewage system shall:

(a) Secure an approved operational permit from the LA; and
(b) Use a holding tank on the current approved wastewater tank list.
F. Septic Tanks:

(1) Must be on the approved list of watertight septic tanks;

(2) Shall have the following minimum liquid capacities for a single-family residence:

<table>
<thead>
<tr>
<th>Number of Bedrooms</th>
<th>Required minimum liquid tank volume (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 2</td>
<td>1,000</td>
</tr>
<tr>
<td>3-4</td>
<td>1,500</td>
</tr>
<tr>
<td>5-6</td>
<td>2,000</td>
</tr>
<tr>
<td>Each additional bedroom</td>
<td>250 per bedroom</td>
</tr>
</tbody>
</table>

(3) Shall have three (3) times the daily design flow with a minimum of one thousand (1,000) gallons for non-residential facilities;

(4) Shall have clean-out and inspection accesses at or above grade;

(5) Shall have access risers and covers that are watertight, constructed of a durable material, and secured with a lockable lid or otherwise secured to prevent unauthorized entry;

(6) Must be designed with protection against floatation and groundwater intrusion in high groundwater areas;

(7) Must be equipped with a Department approved effluent filter;

(8) Must be tested in place and demonstrated to be watertight by the commercial installer and/or authorized professional prior to use; and

(9) In multi-compartment tanks or when two or more tanks are used in series, the primary compartment or tank shall not have a liquid capacity of less than five hundred (500) gallons or less than two-thirds of total liquid capacity, whichever is greater.

G. Pump Tanks:

(1) Must be included on the approved list of watertight pump tanks;

(2) Shall have a liquid capacity of at least two (2) times the daily design flow with a minimum capacity of five hundred (500) gallons;
(3) Shall have cleanout and inspection accesses at or above finished grade;

(4) Shall have access risers and covers which are watertight, constructed of a durable material, and secured with a lockable lid or otherwise secured to prevent unauthorized entry;

(5) Must be designed with protection against floatation, ground water intrusion, and surface water inflow; and

(6) Must be tested in place and demonstrated to be watertight by the commercial installer and/or authorized professional prior to use.

H. Location of Septic Tanks and Pump Tanks

(1) Septic tanks and pump tanks shall be located in an accessible location for pumping and maintenance. Septic tanks and pump tanks located under paving or in areas subject to vehicular traffic must be reinforced to withstand the additional loading caused by potential vehicular traffic. A California State Professional Engineer shall determine the appropriate specifications for the reinforced tank.

I. Building Sewer and Gravity Effluent Pipe

(1) Pipe used for the construction of a building sewer line beyond the building plumbing shall be a minimum of three (3) inches inside diameter and of plastic that shall be PVC ASTM D3034, ABS Schedule 40, or the equivalent. Effluent gravity sewer pipe shall be of the same material and size as the building sewer pipe.

(2) Construction of the building sewer line shall be such as to secure watertight joints and it shall be on a grade of not less than 1/4 inch per foot. Any such pipe or piping four (4) inches or larger in diameter shall have a slope of not less than 1/8 inch per foot.

(3) Construction of the effluent sewer line shall be such as to secure watertight joints and it shall be on a grade of not less than 1/16 inch per foot.

(4) No tees or ells exceeding forty-five (45) degrees shall be permitted in the building sewer line except for plastic long bend 90 elbows or sanitary tees. All aggregate horizontal changes in direction exceeding 135 degrees shall have accessible cleanouts.

(5) Building sewers of three (3) inch diameter shall have cleanouts installed at intervals of not more than fifty (50) feet and sewers of four (4) inch diameter and larger shall have cleanouts installed at intervals of not more than one hundred (100) feet. Where the effluent sewer line exceeds one hundred (100) feet in length, a cleanout shall be placed every one hundred (100) feet.
J. Distribution boxes:

(1) Shall be required on all conventional gravity systems;

(2) Shall be constructed and installed to provide equal flow of effluent to all outlets;

(3) Shall be set on stable soil or otherwise supported to prevent misalignment;

(4) Shall be durable, watertight, and equipped with an adequate removable cover;

(5) Shall not be constructed or installed where the invert of the inlet pipe is less than one (1) inch above the level of the invert of the outlet pipes, nor shall the invert of the outlet pipes be less than two (2) inches above the floor of the distribution box; and

(6) Shall not be installed within three (3) feet of the drainfield trenches.

K. Drainfield

(1) All drainfields shall be installed or located to comply with the following design criteria:

<table>
<thead>
<tr>
<th>Trench Design Criteria</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum length of each trench(^1)</td>
<td>100 feet</td>
</tr>
<tr>
<td>Maximum width of trench</td>
<td>36 inches</td>
</tr>
<tr>
<td>Minimum width of trench</td>
<td>12 inches</td>
</tr>
<tr>
<td>Minimum depth(^2)</td>
<td>6 inches</td>
</tr>
<tr>
<td>Maximum depth of trench(^3)</td>
<td>24 inches</td>
</tr>
<tr>
<td>Minimum distance of undisturbed earth between disposal trenches(^4)</td>
<td>7 feet</td>
</tr>
</tbody>
</table>

\(^1\) Without pressure distribution.

\(^2\) The minimum trench depth shall be twelve (12) inches from original grade if twelve (12) inches of drain rock is used below the distribution pipe.

\(^3\) The bottom of the drainfield shall not be deeper than twenty-four (24) inches below the finished grade, unless written approval is given by the Health Officer.

\(^4\) The Health Officer may allow a reduction in separation of individual trenches to not less than 4 feet on repairs or if a twenty-four (24) inch wide or narrower trench is used.

(a) The length of all drainfield trenches in conventional gravity systems shall be the same length with a maximum variance of 15%;

(b) The grade of the bottom of drainfield trenches and drainfield lines shall be level with a maximum grade of two (2) inches per one hundred (100) feet;

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(c) The minimum depth of drain rock under drainfield lines shall not be less than six (6) inches;

(d) The amount of drain rock over drainfield lines shall not be less than two (2) inches; and

(e) The drain rock in the drainfield shall terminate at the intersection of the drainfield trench sidewall and the effluent sewer line, and such intersection shall be at least three (3) feet from the distribution box and five (5) feet from the septic tank or pump tank.

(2) Drainfield trenches shall not be excavated during wet soil conditions to prevent smearing and/or compaction of the soil interface. All smeared or compacted soil surfaces in the trench shall be scarified and the loose material removed.

(3) All distribution piping for gravity drainfields shall be a minimum three (3) inch diameter Polyethylene (PE), ABS, or PVC perforated sewer pipe.

(4) Drain rock:

(a) Shall be ½ to 2 ½ inches in diameter, with no less than 100 percent passing a 2-inch sieve by weight and no more than five (5) percent passing a ½ inch sieve by weight; and

(b) Must be durable, clean, washed, non-deteriorating gravel, free of organic materials and fines, and with the percent by weight passing the U.S. No. 200 sieve no greater than 0.5%.

(5) Drainfield trenches shall have an approved barrier material consisting of untreated building paper (40-60 lbs.), straw (2 inches compacted minimum), or a geotextile filter fabric placed between the gravel or gravel substitute and soil cover. This requirement may be waived by the LA when gravelless chambers are used.

(6) All drainfield trenches shall have a minimum of one (1) observation port for each lateral located at the distal end of the trench.

L. Cover of the Drainfield

(1) The cover material shall be a loamy material with less than thirty (30) percent clay content;

(2) The minimum depth of cover over the drainfield shall not be less than nine (9) inches of cover material;

(3) The maximum depth of cover over the drainfield shall not exceed eighteen (18)

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inches except by special permission of the LA;

(4) The soil cover shall extend at least five (5) feet beyond the limits of the drainfield trenches and graded at a maximum slope of 3:1. On sloping sites, a downslope correction factor shall be used to maintain the required maximum slope of 3:1;

(5) The required grade of the drainfield trenches must be maintained while backfilling; and

(6) The soil cover shall be graded to prevent ponding, seeded, and covered with an approved erosion control material if necessary.

700-160 Failing Systems

A. No person shall knowingly cause, permit, or allow an OSS failure to occur.

B. An on-site sewage system failure occurs when:

(1) Sewage and/or sewage effluent is present upon the surface of the ground;

(2) Sewage and/or sewage effluent is discharging to surface water directly or by means of a ditch or depression;

(3) Sewage is backing up into a residence, business, or facility;

(4) Effluent is directly or indirectly reaching groundwater and that effluent does not meet Treatment Standard 2 (or Treatment Standard 1, if applicable); and/or

(5) Sewage is leaking from a septic tank, pump tank, holding tank, or collection system.

C. The following systems or system components shall also be considered a failing system and shall be repaired or replaced:

(1) Pit privies;

(2) Cesspools or seepage pits/dry wells

(3) Deep trenches that discharge effluent directly to groundwater or that are located in a designated area of special concern under Section 700-140 of this Ordinance;

(4) Metal or wood septic tanks;

(5) Concrete septic tanks that may be considered a potential safety hazard (i.e. wood lid or otherwise structurally unsound); and

(6) Drainfields, with no record of approval, that are located within fifty (50) feet of
surface water or a water supply well.

(7) Cesspools are not allowed under any conditions.

**700-170 REPAIR OF ON-SITE SEWAGE SYSTEMS**

A. When an OSS failure occurs that cannot be readily repaired without the replacement of the drainfield or an owner of record submits an application to use an inactive system which does not comply with this Ordinance, the OSS owner shall, in order of priority:

1. Connect the residence or facility to a:
   
   a. Public sewer; or
   
   b. Privately owned OSS with concurrence of the LA;

2. Repair or replace the OSS with a conforming system, either on the property served, or on nearby or adjacent property if the necessary easement(s) is/are obtained.

3. Repair or replace the OSS with a non-conforming repair, either on the property served, or on nearby or adjacent property if the necessary easement(s) is/are obtained;

4. Perform one of the following when the requirements in Sections 700-170-A(1), 700-170-A(2), or 700-170-A(3) are not feasible:
   
   a. Use a holding tank, conforming with Section 700-150-E;
   
   b. Obtain a National Pollution Discharge Elimination System or State discharge permit from the Regional Water Quality Control Board issued to a public entity or jointly to a public entity and the system owner only when the Health Officer determines:
      
      i. An OSS is not feasible; and
      
      ii. The only realistic method of final disposal of treated effluent is discharge to the surface of the land or into surface water; or
   
   c. Abandon uses of the property which generate sewage.

B. Prior to replacing or repairing the drainfield, the OSS owner shall develop and submit information required under Section 700-090 and obtain a permit.

C. The LA shall permit a non-conforming repair only when:

1. Installation of a conforming system is not possible; and

2. Connection to either an approved OSS or a public sewer is not feasible.
D. The person responsible for the design of an OSS repair shall locate and design that repair to:

(1) Meet the requirements of Table VI if the drainfield to be repaired or replaced is closer to any surface water or well than prescribed by the minimum horizontal separation required in Table I of Section 700-080;

<table>
<thead>
<tr>
<th>Vertical Separation (feet)</th>
<th>Horizontal Separation² (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;50</td>
</tr>
<tr>
<td>&lt;1</td>
<td>Treatment Standard 1</td>
</tr>
<tr>
<td>1-2</td>
<td>Treatment Standard 1</td>
</tr>
<tr>
<td>&gt;2</td>
<td>Treatment Standard 2³</td>
</tr>
</tbody>
</table>

¹The treatment standards refer to effluent quality before discharge to unsaturated, subsurface soil. ²The horizontal separation indicated is the distance between the disposal component and the surface water or well. If the drainfield is up-gradient of the surface water or well, the next higher standard level of treatment shall apply unless Treatment Standard 1 is already being met. ³This standard shall not be met through the use of a mound system on non-conforming repairs.

(2) Protect drinking water sources;

(3) Prevent the direct discharge of sewage to ground water, surface water, or upon the surface of the ground; and

(4) Meet the requirements of this Ordinance to the maximum extent permitted by the site.

E. An owner of record who receives a non-conforming repair permit from the LA shall:

(1) Record a notice with the Sutter County Clerk Recorder of the presence of a non-conforming repair on the property. The notice shall specify operation and maintenance requirements and any limitations on the use of the property that are related to the presence of a non-conforming repair;

(2) Immediately report any failure to the LA;

(3) Comply with all local and state requirements stipulated on the permit.

700-180 EXPANSION

A. An expansion of a residence or other facility not served by a public sewer system shall not
occur unless the on-site sewage system and the replacement area comply with the new system construction standards specified in this Ordinance.

B. The owner of record may replace an existing residence or structure ("like for like") served by a conforming OSS with record of approval provided that:

(1) The replacement residence or structure does not cause the waste strength or flows to exceed the design flow of the existing system;

(2) The replacement area fully complies with this Ordinance meeting current standards; and

(3) The existing OSS is not considered a failing system under Section 700-160 of this Ordinance.

700-190  ABANDONMENT

A. No person shall permanently abandon any septic tank or other tank, seepage pit, cesspool, or inactive system without first obtaining a permit from the LA.

B. Any septic tank or other tank, seepage pit, or cesspool, which is no longer in use or has been discontinued otherwise from further use, shall be abandoned by:

(1) Having the septage removed by a registered pumper;

(2) Removing or destroying the lid and creating a hole in the bottom (unless filled with concrete); and

(3) Filling the void with soil, concrete, or other approved material after the LA has inspected the tank, seepage pit, or cesspool.

700-200  INSPECTIONS

A. All construction and materials used in an OSS shall be subject to inspection by the LA at any reasonable time. Using an OSS prior to final inspection and approval is unlawful. At the time of final inspection, the OSS shall meet the following conditions:

(1) The septic tank and pump tank (if applicable) installation shall be completed and the access covers shall be removable so that the inside of the tank(s) may be inspected;

(2) All required inspections have been conducted by the LA and the authorized professional;

(3) The drainfield trenches shall be completed except for backfilling with cover material. A pressure test of the laterals is required prior to covering the laterals on pressure distribution systems;
(4) There shall be an unobstructed view of all outlets within the distribution box;

(5) All electrical work including the installation of system control panels and float switches shall be installed and operating; and

(6) All required OSS components shall be installed.

B. The owner of record or commercial installer making such installation or modification shall be responsible for notifying the LA that the installation is ready for inspection. Notification shall be made at least one (1) working day prior to the anticipated date that the system will be ready for inspection.

C. If, upon inspection, the LA finds that the work, material, design, or location of the on-site sewage system does not comply with the requirements of this Ordinance, he/she shall notify the owner of record and/or commercial installer by written notice. If non-conformance with the provisions of this Ordinance is not corrected, the OSS shall not be approved and its use shall be prohibited.

D. Pressure distribution systems and alternative systems shall not be approved by the LA until the designer has submitted a signed certification that the system has been installed according to the approved design.

E. On-site sewage systems shall not be approved by the LA until the designer and/or commercial installer has submitted a scaled “as-built” drawing of the installed system.

F. “As-Built” Drawings

(1) All “as-built” drawings shall include measurements to existing site features enabling all OSS components to be easily located.

(2) All “as-built” drawings for new OSS shall delineate the dimensions of the replacement area.

(3) All “as-built” drawings for repaired or modified OSS shall include the new, repaired, or modified components with their relationship to the existing system.

(4) All “as-built” drawings for designed systems must include the minimum information specified in the adopted technical standards.

700-210 OSS DESIGNERS

A. All non-conventional on-site sewage systems shall be designed by an authorized professional.

B. Only site evaluation data gathered by an authorized professional or the LA is valid. Field
verification may be conducted by the LA.

C. An authorized professional shall not design on-site sewage systems in Sutter County unless he/she has submitted documentation of State certification, registration, or licensure to the Department.

D. It is recommended that each designer actively engaged in soils evaluation and the design of on-site sewage systems obtain a minimum of five (5) hours of classroom (training) time per calendar year in subject matter directly related to on-site sewage treatment and disposal. The LA shall maintain records of continuing education by request provided that proof of attendance is submitted to the LA no later than sixty (60) days after the attendance of the training session.

E. The designer shall be responsible for submitting the following to the LA:

(1) Required data necessary for site evaluation;

(2) A design and drawing to scale of the OSS best suited to the particular site for which application is made; and

(3) Certification of OSS inspection.

700-220 COMMERCIAL INSTALLERS

A. It shall be unlawful for any person to engage in the business of installing, modifying, and/or repairing on-site sewage systems in Sutter County unless that person possesses a California Contractor's license of type A, C-36, C-42, or B (a B license is allowed only if the contractor meets the conditions of Section 7057(b) of the California Business & Professions Code).

B. An owner of record may personally construct, install or repair a conventional on-site sewage system for his/her own single family residence, provided he/she constructs no more than one system in any one calendar year, and gains prior approval from the LA. An owner of record may not personally install a pressure distribution system or an alternative system unless he/she meets the requirements of Section 700-220-A.

C. It is recommended that each commercial installer actively engaged in the installation, repair, or modification of on-site sewage systems obtain a minimum of five (5) hours of classroom (training) time per calendar year in subject matter directly related to on-site sewage treatment and disposal. The LA shall maintain records of continuing education by request provided that proof of attendance is submitted to the LA no later than sixty (60) days after the attendance of the training session.

D. A commercial installer shall:

(1) Follow the approved design;

(2) Have the approved design and permit in his/her possession during installation;

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(3) Only install septic tanks, pump tanks, and holding tanks approved by the Department;

(4) Maintain direct supervision and control of the OSS construction;

(5) Install the OSS in accordance with Section 700-150 of this Ordinance and Manual;

(6) Leave the OSS uncovered until final inspection and approval by the LA; and

(7) Cover the installation pursuant to the requirements of Section 700-150-L after the LA has given approval to cover.

700-230 SEPTIC TANK PUMPERS

A. It shall be unlawful for any person to pump any septic tank, pump tank, holding tank, chemical toilet, or other means of on-site sewage disposal without first obtaining registration from the LA.

B. Only sites with a valid discharge permit from the RWQCB shall be used for dumping of septage.

C. An applicant for registration as a septic tank pumper must furnish his/her equipment for inspection by the LA prior to the issuance or renewal of registration. The equipment must meet the following minimum requirements:

(1) All equipment must be in good repair and easily cleanable. No pockets where debris can accumulate will be allowed;

(2) Truck equipment must be designed to adequately control effluent disposal from the truck into receiving stations;

(3) The tank discharge valve must be capped and the cap chained to the truck;

(4) A fifty (50) foot, ¾ inch diameter hose and disinfectant material must accompany the truck for sanitary cleanup;

(5) A sighting gauge must be installed on the exterior of the tank and must be calibrated to measure capacity to the quarter tank; and

(6) The name of the operating firm, phone number, and tank capacity shall be conspicuously displayed on both sides of the truck or on the rear of the tank in bold letters not less than four (4) inches high.

(7) The vehicle will be stored in an appropriately zoned area.

(8) The sewage shall be disposed of at the Yuba City Wastewater Treatment Plant or

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other locations approved by the LA after an assessment of the proposed location for septage, the volume of septage anticipated, and whether adequate capacity is available.

D. Septic tank pumper registration expires on December 31st of each year. This registration is renewable if the registrant continues to meet the requirements of this Ordinance.

E. Septic tank pumpers shall submit the following minimum information in writing on forms provided by the LA no later than the tenth of each calendar month for the previous month:

(1) Gallons pumped according to location and site address;
(2) Date of pumping, type of waste, and reason for pumping, if applicable; and
(3) Gallons disposed of at each authorized dumping site.

F. Any septic tank pumper registration issued pursuant to this Ordinance may be suspended or revoked by the LA for incompetence, negligence, misrepresentation, or failure to comply with the requirements of this Ordinance on the part of the septic tank pumper.

700-240 OPERATION AND MAINTENANCE

A. The owner of record is responsible for properly operating and maintaining the OSS, and shall:

(1) Employ a registered septic tank pumper to remove septage from the tank when the level of solids and scum indicates that removal is necessary;
(2) Protect the OSS and the replacement area from:
   (a) Cover by impervious material or additional overburden;
   (b) Surface or stormwater drainage;
   (c) Soil compaction by vehicular or animal traffic; and
   (d) Damage by soil removal and grade alteration;
(3) Keep the quantity and waste strength of sewage entering the OSS at or below the approved design; and
(4) Operate and maintain alternative systems as directed by the LA.

B. The LA shall provide operation and maintenance information to the owner of record upon approval of any new installation, repair, or modification of a conventional OSS.

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C. The Administrative Officer, in consultation with the Health Officer, shall develop and implement plans to:

Monitor all OSS performance within areas of special concern; Initiate periodic monitoring of each non-residential and residential systems utilizing supplemental treatment OSS no later than January 1, 2020, to ensure that each owner of record properly maintains and operates an OSS in accordance with this Ordinance and Manual in accordance with other applicable operation and maintenance requirements; and disseminate relevant operation and maintenance information to the OSS owner of record;

D. Persons shall not:

(1) Use or introduce strong bases, acids, or chlorinated organic solvents into an OSS for the purpose of system cleaning;

(2) Use a sewage system additive unless it is approved by the Department; or

(3) Use an OSS to dispose of waste components atypical of residential sewage.

700-250 TECHNICAL ADVISORY COMMITTEE

A. A technical advisory committee shall be established to review and recommend revisions to adopted technical standards in response to changes in regulation and/or technology.

B. The technical advisory committee shall review the technical standards documents at a minimum frequency of once every three (3) years and submit any recommended changes to the Department.

C. The Technical Advisory Committee shall be appointed by the Administrative Officer based on experience, training, and knowledge of on-site sewage system technology; and

D. The Technical Advisory Committee shall be comprised of the Health Officer, and authorized professionals and commercial installers as appointed by the Administrative Officer.

700-260 ADMINISTRATIVE HEARINGS

A. This Section only applies to:

(1) The processing of applications for permits;

(2) The issuance of permits;

(3) The suspension of permits;

(4) The revocation of permits; and
(5) The issuance of stop work orders.

B. Notwithstanding Section 700-260-A, any action which is taken that requires a valid permit when no such permit has been issued, or when the permit has expired, or when the permit is suspended or revoked, is subject to the sanctions listed in Section 700-270. In addition, any violation of a stop work order is subject to the sanctions listed in Section 700-270.

C. A person aggrieved by any action taken by the LA pertaining to the activities listed in Section 700-260-A may request an administrative hearing before the Environmental Health Appeals Board. Such request shall be filed in writing with the Department within twenty (20) working days of the date of the action being challenged. Upon receipt of such requests, the Appeals Board shall notify the person aggrieved of the time and place of such hearing, which shall be set not less than ten (10) working days nor more than twenty (20) working days from the date the request was received, unless a later date is agreed to in writing by the person aggrieved. The Health Officer shall, if possible, set the hearing at a mutually convenient time.

D. The administrative hearing delineated in Section 700-260-C shall be conducted in an informal manner. All relevant evidence is admissible and the strict rules of evidence shall not apply. The person aggrieved may be represented by a lawyer.

E. The Appeals Board shall determine whether the explanation of the events by the person aggrieved justifies modifying or reversing the initial decision. The decision of the Appeals Board to affirm, reverse, or modify the initial decision shall be in writing and shall be issued within twenty (20) working days after the close of the hearing. The decision shall be accompanied by written findings of fact and shall be promptly sent to the person aggrieved.

700-270 VIOLATIONS

A. Any person who violates any of the provisions of this Ordinance or fails to comply with any of its requirements is guilty of a misdemeanor, and each day or portion thereof during which a violation is committed, continued, or not permitted shall constitute a separate offense. The penalty for each violation is a fine of not more than one thousand dollars ($1,000) or imprisonment for not more than ninety (90) days, or both.

B. Any disposition of a violation pursuant to this Ordinance shall not absolve a person from correcting or abating a violation and shall not prevent the prosecuting authority from pursuing criminal prosecution, other civil action including, but not limited to, injunctive relief, registration revocation, and abatement, or all of the above. If the Board of Supervisors prevails in a separate civil action, the Court may award the Board of Supervisors reasonable costs including, but not limited to, the costs of the responsible officials' time, witness fees, attorney fees, court costs, and the costs to the Board of Supervisors of abatement or of enforcement of an injunction, or both.
C. Nothing contained in this Ordinance shall prevent the Administrative Officer, by and through the prosecuting authority, from taking such other lawful action as is necessary to prevent or remedy any violation of this Ordinance.

**700-280 WAIVER OF REGULATIONS**

A. For individual, site-by-site waiver requests, the LA may grant a waiver from specific requirements in this Ordinance for OSS if:

(1) The applicant submits a waiver application to the LA which justifies how the requested waiver is consistent with the purpose of this Ordinance; and

(2) The LA determines that the waiver is consistent with the purpose and intent of this Ordinance and would not result in a violation of mandatory state laws and regulations.

B. A person aggrieved by a decision of the LA pertaining to a waiver request may appeal the decision to the Environmental Health Appeals Board. The Appeals Board shall process waiver applications according to the procedural rules delineated in Section 700-260.

C. If an applicant desires to modify and resubmit a previously denied waiver request, the process described in Section 700-280-A shall be followed again.

D. The Health Officer may grant special permits allowing for variances from the provisions of this Ordinance in the case of natural disasters (i.e. fires, floods) and/or unnecessary hardships provided that:

(1) An expansion of the original structure does not occur; and

(2) The special permit does not create a potential health hazard and is consistent with the purpose of this Ordinance.

**700-290 USE OF BUILDINGS**

It shall be unlawful to maintain or use any residence, place of business, or other building or place where persons reside, congregate, or are employed which is not provided with a means for sanitary disposal of all garbage, rubbish, putrescible wastes, or other offensive or nauseous substances.

**SECTION 2:** If any section, subsection, sentence, clause, phrase, or portion of this ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions thereof.

**SECTION 3:** This ordinance shall take effect thirty (30) days after the date of its adoption, and before the expiration of fifteen (15) days from the date of passage thereof shall be published at least
once in the Appeal Democrat, a newspaper of general circulation, together with the names of the members of the Board of Supervisors voting for and against the same.

**PASSED AND ADOPTED** this 28th day of March, 2017, by the Sutter County Board of Supervisors, State of California, by the following vote:

**AYES:** Supervisors Sullenger, Flores, Munger, Whiteaker and Conant

**NOES:** None

**ABSENT:** None

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**ATTEST:**
DONNA M. JOHNSTON, CLERK

By: Alice
Deputy

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**FILED**
MAR 27 2017

BOARD OF SUPERVISORS
DONNA M. JOHNSTON
Clerk of the Board

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Ord. 1632
March 28, 2017
Book V, Page 71
PURPOSE:

The purpose of this policy is to establish guidelines and technical standards for the installation of On-site Sewage Disposal Systems. The County recognizes the need to develop clear and consistent guidelines governing the installation, repair, monitoring and state mandated reporting of on-site sewage disposal systems.

AUTHORITY:

The Sutter County Board of Supervisors

APPLICABILITY:

All areas of Sutter County including the portions of the incorporated cities that are served by On-Site Sewage Disposal Systems.

GENERAL POLICY:

To govern the process, materials, system requirements, environmental monitoring and reporting requirements of on-site sewage disposal systems. Ensure the effective and efficient achievement of County objectives of the protection of public health, preservation of the environment and compliance with state mandates as they relate to On-Site Sewage Disposal Systems.

POLICY GUIDELINES: Attached
MANUAL - PART 1 - PROCESS

CHAPTER 1 SITE EVALUATION
   A. SITE PREPARATION AND APPLICATION
   B. SOIL TEST HOLE EXCAVATION
   C. SITE INSPECTION AND EVALUATION
   D. EXPIRATION
   E. GROUNDWATER MONITORING
   F. PERCOLATION TESTING

CHAPTER 2 CONSTRUCTION PERMIT
   A. APPLICATION
   B. SYSTEM DESIGN
   C. NOTIFICATION, INSPECTION AND FINAL APPROVAL

CHAPTER 3 TESTING SEPTIC TANKS TO ASSURE WATERTIGHT CONSTRUCTION
   A. SEPTIC TANKS IN USE AT TIME OF TESTING
   B. NEW CONSTRUCTION OR TANK REPLACEMENT

MANUAL - PART 2 - MATERIALS

CHAPTER 1 BUILDING SEWER
CHAPTER 2 SEPTIC TANK
CHAPTER 3 FITTINGS
CHAPTER 4 DISTRIBUTION BOX
CHAPTER 5 DIVERSION VALVE
CHAPTER 6 DOSING AND PUMP TANKS
CHAPTER 7 PUMPS, CONTROLS AND ALARMS
CHAPTER 8 PIPE
CHAPTER 9 DRAINROCK
CHAPTER 10 BARRIER MATERIAL
CHAPTER 11 BUNDLED EPS SYNTHETIC AGGREGATE
CHAPTER 12 SINGLE-PASS SAND FILTER AND MOUND SYSTEM FILTER MATERIAL
CHAPTER 13 CONTAINMENT VESSEL FOR INTERMITTENT SAND FILTER
CHAPTER 14 OBSERVATION PORT DESIGN

MANUAL - PART 3 - SYSTEM REQUIREMENTS

CHAPTER 1 GENERAL REQUIREMENTS
CHAPTER 2 DESIGN FLOW
CHAPTER 3 INSTALLATION
CHAPTER 4 SEPTIC TANK DESTRUCTION
CHAPTER 5 STANDARD GRAVITY SYSTEMS
CHAPTER 6 PRESSURIZED DISTRIBUTION SYSTEMS
CHAPTER 7 SUBSURFACE DRIP IRRIGATION
CHAPTER 8 SUPPLEMENTAL TREATMENT SYSTEMS
CHAPTER 9 PROPRIETARY SYSTEMS
CHAPTER 10 SINGLE-PASS SAND FILTERS
CHAPTER 11 MOUND SYSTEMS
CHAPTER 1  REPORTING REQUIREMENTS
CHAPTER 2  RECORD RETENTION AND AVAILABILITY
CHAPTER 3  WATER SUPPLIER NOTIFICATION
Part One: Process

Chapter 1. Site Evaluation

Site evaluations are required for approval of all lot line adjustments, parcel and subdivision maps and for construction of on-site wastewater systems except as exempted in section 700-130. Site evaluations are not required for on-site wastewater system modification or replacement (with adequate soils information), although elements contained in this section, such as soil analysis, may be incorporated into the process for permitting the construction of said modifications or replacements.

A. Site Preparation and Application
   1. LA parcel files are accessible to the public and customers are encouraged to review their property file before applying for a Site Evaluation.
   2. Site Evaluation applications will only be accepted when determined by the LA to be complete, including the following information:
      a. All portions of the application form are completed and legible
      b. Dimensional site plan that includes location of soil test holes in relationship to property boundaries, landmarks as necessary and drawn to an engineered scale
      c. Signature of the applicant
      d. Fees as specified in county code
   3. The trenches should be excavated in the presence of the LA.

B. Soil Test Hole (Trenches) Excavation
   1. Number and Location of Test Holes
      Unless otherwise approved by the LA, a minimum of 2 test holes will be required for each parcel, with one hole excavated in the primary and one hole excavated in the replacement drainfield areas. At the discretion of the LA, additional holes may be needed to adequately characterize site conditions or fewer test holes may be allowed based on considerations such as space limitations on smaller parcels or uniformity of area soil characteristics.

      For legally created parcels the LA may accept soil data recorded at the time of parcel creation in lieu of excavating and evaluating new test holes at the time of site evaluation if the soil data is well documented, undisturbed and the area is able to meet current standards for the proposed development.

   2. Dimensions of Test holes
      a. The holes are generally excavated by a backhoe. Test holes only need to be dug into the restrictive layer. When a restrictive layer is not identified during test hole excavation, test holes must be dug a minimum of 7 feet deep. The reason for this depth is to verify that
the site can accommodate a 2 foot deep drainfield with an additional 5 foot of vertical separation for a gravity system.

b. Excavator requests for test holes shallower than 5 feet (without encountering a restrictive layer) due to site specific concerns such as soil sloughing characteristics and access to the site by children or animals, will be considered on a case-by-case basis. The LA will work to identify ways to meet the excavator's concerns other than digging shallow test holes, such as arranging to meet the excavator on site so the holes can be immediately covered.

c. All trenches should be excavated to Cal-OSHA standards, and a minimum of 2 feet wide.

d. In some cases hand dug test holes may be preferred by the applicant or designer. Hand dug test holes might be preferable for sites that have a shallow restrictive layers or sites where construction equipment could damage the usable soil. Nevertheless, in all cases, trenches must be dug to the specifications listed above.

C. Site Inspection and Evaluation

1. Review

a. LA staff will inspect the site, log the soil test holes, and make an initial determination of whether site conditions are suitable for a standard, gravity system, based on the following factors:

   (1) 2 ft. of native effective soil and 5 ft. separation to groundwater
   (2) Slope less than 30%
   (3) Soils in Soil Types 1-6, as identified in Table II

b. Site Evaluations will provide the applicant with soil profiles, the depth of effective soil, the application rate, a statement of whether the wastewater system would be conventional gravity or require consultant review and possible supplemental treatment.

c. The LA may request joint site evaluation without initially evaluating the site in cases where site conditions are known to be outside of the range described as suitable for standard, gravity systems as identified in Table II.

D. Expiration

Site Evaluations shall be valid for a period of three (3) years, except for when there is a change in site conditions adversely affecting the drainfield area or when there has been a change in regulatory requirements. Exceptions may be made when the LA is confident that no adverse changes have occurred to the site.
E. Groundwater Monitoring

1. Purpose
   a. The LA requires groundwater monitoring information for projects in groundwater concern areas to determine if on-site wastewater and/or subdivision ordinance requirements can be met.
   b. Unusual situations may require additional groundwater review of a specific site completed by a professional such as a California Professional Geologist, Hydrogeologist, or Civil Engineer.

2. Area Identification
   Parcels with suspected seasonal groundwater issues requiring rainy season monitoring include:
   a. Valleys, Ravines, Swales
   b. Waterways
   c. Confined and Unconfined Sand and Gravel Strata
   d. Shallow Topsoil Areas
   e. Springs or other indications, such as swampy/marshy appearance or presence of water-loving vegetation such as cattails, willows, perennial grasses
   f. History of seasonal groundwater in the vicinity of the project
   g. Visual indication of seasonal groundwater, such as mottling or gleying in soil profiles

3. Application and Coordination
   Groundwater monitoring may be conducted in the following circumstances:
   a. As part of a pre-application review for a land use project.
   b. As a condition for preliminary map approval for land use applications, where the owner has signed a disclosure document for concurrent review.
   c. As a condition for site evaluation approval or as a stand-alone review, where the applicant has agreed to payment of the LA’s hourly rate.
   d. In all cases, the designer will discuss the monitoring plan ahead of time with the LA, and provide the LA with a map showing the number and location of monitoring wells.

4. Groundwater Observation Period
   a. The groundwater observation period is November through April.
   b. The LA may allow the designer to install and initiate observation of monitoring wells after November, on a case-by-case basis, provided there is reasonable likelihood that maximum groundwater elevations may still be observed during the remainder of the groundwater observation period.
5. Collection of Rainfall Data
   a. Observation data shall be collected by the designer at least every two weeks during the monitoring period;
   b. Additional readings shall be taken by the designer within 2 days following a significant rain, such as when there has been 1 or more inches of rainfall within a 24-hour period;
   c. Daily observations by the designer may be necessary during elevated groundwater periods to identify maximum groundwater levels;
   d. Confirmatory observations will be made periodically by the LA.

6. Monitoring Well Design
   a. Monitoring well depth should be equal to or greater than the required depth to groundwater necessary for project approval. The usual depth is eight (8) feet.
   b. Monitoring well design should generally be as shown in this diagram. Holes will be constructed using an auger and 4-inch diameter pipe shall be used. However, approval of alternate designs will be considered on a case-by-case basis by LA staff.
   c. Monitoring wells must be staked and flagged so that they can be readily located by LA staff.

7. Certification Criteria
   a. Rainfall Data Source
      Unless the designer justifies another source of rainfall data acceptable to the LA, the following site will be used for tracking daily and monthly rainfall and for determining average rainfall:
      http://www.cimis.water.ca.gov/cimis/info.jsp
Note: The California Irrigation Management Information System (CIMIS) is a program in the Office of Water Use Efficiency (OWUE), California Department of Water Resources (DWR) that manages a network of over 120 automated weather stations in the state of California. CIMIS was developed in 1982 by the California Department of Water Resource and the University of California at Davis to assist California’s irrigators manage their water resources efficiently.

b. Minimum Rainfall for Certification

(1) Minimum rainfall shall be 80% of average for the observation months of November through April for sites where, based on geographical location, absence of restrictive layer, and absence of visual evidence of seasonal water table, there appears to be 24 inches or more of effective soil.

(2) Low Rainfall Years

(i) Lower rainfall years will normally not be certified. However, during multiple years of low rainfall, a secondary data source may be considered. After completion of at least one groundwater observation period (normally November through April) that does not reach the average rainfall requirement for certification, an applicant may submit, for consideration by the Regional Board and the LA, a complete groundwater report prepared by a certified engineering geologist or by a certified hydrogeologist.

(ii) The report should contain supporting data for groundwater elevation conclusions and include an analysis of expected maximum groundwater elevations for the proposed dispersal site. Elements of the report will include:

- Topographical and geographical characteristics of the site, including slope of the land, that could affect surface and subsurface drainage characteristics;
- Soil classification and hydraulic conductivity of the soil;
- Presence of restrictive layers in the soil profile;
- Presence of visual indication of seasonal groundwater (e.g. soil mottling) within the soil profile;
Historical rainfall patterns and relationship to groundwater monitoring observations; and

Depth of observed groundwater in relationship to minimum soil depth requirements and proposed depth of trenches.

(iii) The Regional Board, in consultation with the LA, must approve groundwater reports in order to determine that groundwater monitoring requirements have been met.

8. Determination of Maximum Seasonal Water table Elevation

a. Maximum seasonal water table is the highest level of groundwater determined to be the characteristic level for the groundwater monitoring well, based on a series of observations recorded by the certified designer and verified by representative quality control observations of the LA. To assure consistent correlation of LA and certified designer measurements, the designer will notify the LA within 24 hours of observing high seasonal water table in monitoring wells.

b. Seasonal groundwater levels are known to temporarily spike in some monitoring wells after periods of heavy rainfall. This will be allowed to occur in a limited manner (within tolerance limits) without affecting the groundwater level determined to be the characteristic level for the monitoring well, provided the following conditions are met:

(1) The groundwater level spikes must not occur at any time above the depth proposed for the dispersal field (with the exception as noted in the table, below; and

(2) The number of days in which the groundwater is above the characteristic level must not exceed that which is shown on the following table:

<table>
<thead>
<tr>
<th>Rainfall as % of Average Annual Rainfall</th>
<th>Tolerance for Groundwater Exceeding Characteristic Level (# days within 30 day period)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 5% Slope</td>
</tr>
<tr>
<td>80% - 110%</td>
<td>2</td>
</tr>
<tr>
<td>110% - &lt;130%</td>
<td>7</td>
</tr>
<tr>
<td>130% - &lt;200%</td>
<td>14</td>
</tr>
<tr>
<td>200%+</td>
<td>21(*)</td>
</tr>
</tbody>
</table>

(*) Special Exception: Groundwater may rise to a level above the proposed bottom of the dispersal field for up to 2 days.

c. Groundwater monitoring results will be determined to be unsatisfactory when the characteristic level of the seasonal water
F. Percolation Testing

Percolation tests may be performed by an authorized professional to provide additional information on appropriate effluent application rate during the site evaluation process at the discretion of either the LA or the designer and when soil conditions warrant. When percolation tests are utilized the following requirements will apply:

1. Test hole preparation requirements
   a. Unless otherwise indicated by the LA, there shall be a minimum of 3 percolation test holes within the initial disposal area and 3 percolation test holes in the replacement area. Additional test holes may be required by the LA to completely identify a suitable area.
   b. Percolation test holes shall be 6 inches in diameter.
   c. Unless otherwise approved by the LA, the test hole bottom depth shall be 18” deeper than the proposed drainfield trench bottom depth and within the most restrictive strata of useable soil beneath the dispersal field.
   d. The percolation test hole sidewall in the test section should be roughened to remove any smearing or compaction caused by the hole excavation process. All loose soil shall be removed and 2 inches of pea gravel or other material approved by the LA shall be placed in the bottom of the hole.

2. Presoak requirement

   The hole shall be filled with clean water to a minimum depth of 12 inches above the base of the hole. The presoak shall be maintained for a minimum of 24 hours.

3. Test measurement requirements
   a. Percolation tests shall be measured to the nearest 1/16-inch from a fixed point.
   b. The percolation test shall begin within 4 hours following completion of the presoak. Adjust the water level to 6 inches over the pea gravel bottom and begin the test. This may require adding or removing water to adjust the level.
   c. Readings shall be taken at 30-minute intervals. Refill as necessary to maintain 6 inches of water over the pea gravel bottom at each interval. The last 30 minute interval is used to compute the percolation rate. If 4 inches or more of water seeps from the hole during the 30 minute interval, readings may be taken at 10 minute intervals. Readings shall be taken until 2 consecutive readings do not vary by more than ten percent per reading with a minimum of 3 readings. The last 10 minute interval is used to compute the percolation rate.
Chapter 2. Construction Permit

A. Application
1. Construction Permit applications will only be accepted when determined by the LA to be complete, including the following information:
   a. All portions of application form completed and legible
   b. Complete system design attached, including site plan
   c. Payment of all applicable fees
2. The LA will refer to the Public Works division, any site where it is noted by the applicant that more than one acre of soil disturbance and/or more than 1,000 cubic yards of grading will take place.

B. System Design
1. LA application form must be used to facilitate design review
2. All required drawings and sketches must be included
3. This portion of the design requires three items that show sufficient detail to allow the design to be reviewed and the system to be installed. Plot plans, design details, and cross-sections may be combined on one or more design sheets, provided there is sufficient detail and clarity to specify components, dimensions, spacing, and setbacks as outlined in the design checklists.
   a. Scaled Plot Plan
      This drawing shows the placement of the septic system in relationship to the overall development plan for the property. The plot plan must match the building permit plot plan (the same sketch is accepted by the building department for their application), and should verify that the system can be installed in conformance with setbacks and site limitations.
   b. Scaled Layout Sketch Detail
      This item shows the detail of the drainfield layout and details of the system design. The layout detail is intended to be a close-up of the portion of the plot plan where the septic system is located.
   c. Cross-Section Detail
      This item shows the depth from original grade of the septic system components. The cross-section is intended to be used both as a guide for system construction and as verification that vertical separation and component depths meet code.
4. All plans must be signed and dated by the designer for pressure distribution or supplemental treatment systems.
5. A project may be referred by the LA to the Central Valley Regional Water Quality Control Board for consultation or for regulatory oversight if the Health Officer determines that additional technical assistance or regulatory oversight is warranted due to the unique characteristics of the project or site characteristics.
C. Notification, Inspection, and Final Approval

1. The installer must contact the LA and system designer to make arrangements for an inspection of the system construction. The system must then be left open for a maximum of two working days, allowing the installation to be inspected by the designer and the LA.

2. The installer will leave a signed as-built drawing at the site in a sealed, zip lock plastic bag. The LA will use the checklist on the as-built form for their inspection and approve or deny cover of the system based on the LA's assessment of the installation.

3. The system installation will be verified as complete and within current code, and will be given final approval by the LA, when all the following actions have taken place:
   a. An as-built drawing signed by the installer and provided to the LA.
   b. The designer (if one was used) verifies that the system was constructed in substantial conformance with the design.
   c. If Supplemental Treatment is required:
      (1) The designer has provided the homeowner with a system Operation, Monitoring, and Maintenance Manual.
      (2) The homeowner has recorded the ongoing need for periodic monitoring and inspections on the property deed.

D. System Repairs, Replacement, Modifications, Expansions, and Septic Tank Destruction

1. When Construction Permit Required
   a. Construction Permits are required to repair or significantly modify existing on-site wastewater systems, or to destroy a septic tank. However, these permits are not required for servicing or replacing installed mechanical or electrical parts of the systems, including:
      (1) Float switches
      (2) Pumps
      (3) Electrical boxes
      (4) Sanitary tees in the septic tanks
      (5) Minor structural corrections to the tank
      (6) Repair/replacement of the distribution box, or repair/replacement of the sewer line from the tank to the distribution box.
   b. Other than replacement of septic tank inlet and outlet T's or replacement of septic tank access lids, LA Notification and Plan Review must take place BEFORE the service is performed.

2. When Elements of Site Evaluation Required
   Unless sufficient site information is available to the LA, supplemental site information, such as soil analysis data will typically be required for on-site wastewater system expansion, relocation, repair or replacement.
3. Special Considerations for System Repairs
   a. A failing system must be repaired as soon as reasonably possible.
   b. If an immediate repair cannot be accomplished, the LA may allow a delay in making the repair. In this case, an enforcement order will be issued and the LA will specify temporary measures required to eliminate any immediate public health hazard or pollution of ground or surface waters.

Chapter 3. Testing Septic Tanks to Assure Watertight Construction

A. New Construction or Tank Replacement
   1. All new tanks must be certified by the manufacturer to be watertight, allowing no more than 1% liquid volume loss over a 24 hour period.
   2. All tanks must be tested after installation to be watertight by the following process:
      a. Install risers
      b. Install and cap inlet and outlet fittings
      c. 24 hour pre-soak for concrete tanks
      d. Fill tank a minimum of 2 inches into the riser and mark water surface level on the riser
      e. Return after 24 hours. If there has been no measurable drop of the liquid volume of the tank, then the tank has passed the inspection.
Part Two: Materials

Chapter 1. Building Sewer

The building sewer must be constructed with materials in conformance to building sewer standards identified in the California Plumbing Code. The building sewer pipe must have a minimum diameter of three (3) inches.

Chapter 2. Septic Tank

A. General criteria for septic tanks

1. Tanks must be constructed of precast reinforced concrete or other material approved by the LA. Wood and metal tanks are prohibited. Cast-in-place and fiberglass may be considered on a case-by-case basis provided there is adequate engineering justification and provided they meet the requirements outlined in this Manual. Polyethylene and polypropylene tanks that meet the International Association of Plumbing and Mechanical Officials (IAPMO) standard IAPMO/ANSI Z1000 (standard for design, material, performance testing, and marking) are approved by the LA, unless otherwise noted.

2. Tanks must have the manufacturer’s name and tank capacity in gallons permanently displayed on the uppermost portion of the tank. If the tank is constructed of fiberglass, polyethylene, or polypropylene then the model number must also be displayed.

3. Tanks must be protected against flotation under high ground water conditions.

4. Tanks must be approved by the International Association of Plumbing and Mechanical Officials (IAPMO) or meet IAPMO minimum standards as demonstrated to the LA by a certification program equivalent to that provided by IAPMO with the following program elements:

a. Evaluation and certification by an engineering firm, approved by the LA, with expertise and experience related to septic tank design and construction, to verify substantial equivalency with IAPMO standards and compliance with the requirements of this Manual as pertaining to:

(1) Structural design of the tank;
(2) Quality of materials used in construction of the tank;
(3) Acceptable construction methods and practices;
(4) Quality control and quality assurance plan proposed by the manufacturer;

b. Unannounced inspection of manufacturer’s facilities and observation of construction methodology by a qualified third party approved by the LA to assure compliance with the items listed above;
c. Reciprocity:

(1) A certification program of tanks by another oversight agency in a manner substantially equivalent to that which is outlined in this Manual may be accepted by reciprocity;

(2) Reports generated from unannounced inspections conducted by a qualified independent third party on behalf of another oversight agency may be accepted by the LA provided the certification requirements of the other oversight agency are substantially equivalent to that which is specified in this Manual.

d. All associated costs shall be borne by the manufacturer requesting the alternative certification process.

5. Tanks must be covered by a Manufacturer’s Guarantee for a minimum period of five years and be installed in strict accordance with the manufacturer’s instructions.

6. Tanks must be constructed and installed so as to be watertight. Septic tanks for new construction must be verified as watertight through manufacturer certification and in situ testing. Testing methods are described in Part 1 of this Manual.

B. Configuration

1. The tank must be designed to ensure removal of settleable solids. To accomplish this, the tank must provide:

a. Liquid volume as specified in Part 3 of this Manual. This is to allow sufficient retention time for treatment and sufficient sludge storage space to prevent the discharge of sludge or scum into the drainfield.

b. Inlet and outlet sanitary “T”s to prevent the discharge of sludge or scum in the effluent.

c. Venting provisions to allow for the escape of accumulated methane and hydrogen sulfide gases.

d. Inlet sanitary “T” must be extended to penetrate at least 12 inches into the liquid from the inlet flow line. If the submerged scum depth is expected to be greater than 12 inches, the inlet fixture should be extended into the liquid two inches below the expected lowest scum depth.

2. Septic tanks must have a minimum of two compartments. Installation of multiple single compartment tanks in a series is not acceptable, unless approved by the LA prior to installation. The first compartment must have a liquid capacity of two-thirds (2/3) of the total required liquid capacity, as measured from the invert of the outlet fitting.

3. Each compartment must have access provided by a manhole having not less than eighteen (18) inches across its shortest dimension unless otherwise approved by the LA.

4. At least ten (10) percent of the inside volume of the tank must be above liquid level to provide scum storage.
C. Structural Integrity

All treatment units and tanks, regardless of material or method of construction shall:

1. Be designed and constructed to withstand all potential lateral earth pressures under saturated soil conditions with the tank empty.

2. Pass Top Load = 300 psf (the tank shall be capable of supporting long-term unsaturated soil loading in addition to the lateral hydrostatic load.)

3. Pass Lateral Load = 62.5 pcf (the tank shall be capable of withstanding long term hydrostatic loading with the water table maintained at ground surface.)

4. Have a minimum live load at the surface of 300 pounds per square foot with twelve (12) inches of cover unless heavier loads are expected. For heavier loads, (i.e. vehicles), proof of traffic rating is required.

5. Successfully withstand an above ground static hydraulic test if the tank is 2,000 gallons or smaller.

6. Precast concrete tanks must have a minimum wall, compartment and bottom thickness of three (3) inches, and must be adequately reinforced. The top must be at least four (4) inches thick.

7. Tanks must be built such that all construction joints are sealed watertight and bonded together in a structurally sufficient manner to prevent separation as certified by the manufacturer’s registered engineer.

D. Risers

1. Each compartment must be provided with a concrete (or other material approved by the LA) watertight riser, extending to the finished grade or above, with a minimum inside horizontal measurement 24”.

2. All joints must be properly sealed with a sealant and/or an interlocking mechanism approved by the LA. Cement grout sealing alone is not an acceptable method of sealing joints.

3. Surface water must be diverted away from the riser cover by creating a sloping surface away from the riser, or extending the riser two (2) inches above finished grade.

4. The cover must be securely fastened with stainless steel or other corrosion resistant fasteners to make the riser vandal, tamper, and child resistant. No cover may exceed seventy-five (75) pounds.

Chapter 3. Fittings

A. The inlet and outlet fittings must be of Schedule 40 PVC, Schedule 40 ABS, or other materials approved by the LA, with a minimum diameter of three (3) inches.

B. All fittings must be secured with a sealant approved by the LA and must be constructed so as to be watertight. Tank fitting locations must be properly engineered to ensure the structural integrity of the tank.

C. The inlet fitting must be a sanitary “T” with minimum pipe diameter not less than the connecting building sewer or less than three (3) inches. It must extend at least four (4) inches above and twelve (12) inches below the liquid level.
D. The outlet fitting must be a sanitary "T" with minimum pipe diameter no less than the connecting influent sewer pipe and not less than four (4) inches in order to accommodate an effluent filter. The outlet fitting must extend at least four (4) inches above liquid level and below liquid level a distance approximately equal to the flow level through the baffle separating the two compartments of the tank. The diameter of the vertical leg extending below the liquid level must not be less in size than the building sewer nor less than four (4) inches.

E. An effluent filter prior to discharge of the effluent to the effluent sewer. It must be commercially designed and manufactured, intended for effluent filtration, and be readily accessible for inspection and cleaning.

F. The invert of the inlet fitting must not be less than one (1) inch and preferably three (3) inches above the invert of the outlet fitting.

G. Sanitary "T"s must be accessible and directly below the manhole access riser.

H. Baffles must be a three (3) inch or larger diameter "T" fitting or baffle slot (with the same opening area as the fitting) that is located in the shared compartment wall, using the same material specifications as required for the outlet fitting. The invert of the "T" fitting or baffle slot must be located approximately at fifty (50) percent of the liquid depth. There must be a minimum two-inch vent opening in the baffle above the liquid level. The baffle must be constructed of the same material as the tank and extend a minimum of four (4) inches above the liquid level.

Chapter 4. Distribution Box
A. Distribution boxes must be constructed of concrete or other materials acceptable to the LA.

B. Distribution boxes must be designed to accommodate the necessary distribution laterals and expected flows. The top, walls, and bottom of concrete distribution boxes must be at least one and one-half (1-1/2) inches thick.

C. Distribution boxes must be installed for equal distribution to the drainfield trenches.

D. Each distribution box must be provided with a means of adjustment for equal distribution.

E. For initial use of a manufacturer's distribution box design proposed for use in Sutter County, or when a revised box design is proposed for same, the commercial manufacturer of the prefabricated box must provide the LA with written documentation that the box design, materials and construction comply with all requirements of the California Plumbing Code.

F. All distribution boxes must be installed level on LA-approved bedding material and as described in Part 3 of this Manual.

Chapter 5. Diversion Valve
A. Diversion valves must be constructed of durable material and be of a design approved by the LA. They must be corrosion resistant, watertight, and designed to accommodate the inlet and outlet pipes.

B. Each diversion valve must have a positive stop.
C. For initial use of a manufacturer's diversion valve design proposed for use in Sutter County, or when a revised valve design is proposed for same, the commercial manufacturer of the prefabricated valves must provide the LA with written documentation verifying that the valve design, materials and construction comply with all requirements of the California Plumbing Code.

Chapter 6. Dosing and Pump Tanks
A. The tank may be:
   1. A separate tank meeting the requirements specified in this manual.
   2. The second compartment of a two compartment septic tank when approved by the LA provided:
      a. The septic tank is a minimum of 1,000 gallons;
      b. The wall separating the two compartments of the tank is equipped with a properly placed sanitary “T” to prevent the discharge of sludge or scum into the second compartment that is utilized as the pump chamber, or with a flow-through port. If a sanitary “T” is utilized, the tank must have an access lid over the “T” to allow servicing;
      c. The wall separating the two compartments has the structural integrity to allow the first compartment to remain full while the second compartment is empty.
B. Each dosing tank employing one (1) or more pumps must have a liquid capacity sufficient to deliver the design dose, and have a minimum additional capacity of one half day's design flow between the high level alarm and the tank’s inlet.
C. Each dosing tank must be marked on the uppermost surface with the liquid capacity and manufacturer's business name, or a number assigned by the LA.
D. When a revised tank design is proposed, the manufacturer of the tank must provide the LA with written documentation that the tank design, materials and construction comply with all requirements of the California Plumbing Code. The manufacturer must provide a set of plans and specifications prepared by a registered professional engineer for each tank design and a set reflecting any subsequent revisions. The appropriate fee must accompany plans.
E. Any pump tank transporting effluent or solids to a septic tank must have its own penetration into the tank with a 3-inch minimum diameter sanitary “T.” Because effluent entering the septic tanks should not do so under pressure that could cause turbulence in the septic tank, the pressure line from the dosing/pump tank needs to connect to the larger diameter pipe at least 10 feet before entering the septic tank.

Chapter 7. Pumps, Controls, and Alarms
Electrical components used in systems must comply with the Uniform Electrical Code, and the following provisions:
A. Motors must be continuous-duty, with overload protection.
B. Pumps must have durable impellers of bronze, cast iron, or other materials approved by the LA.
C. Submersible pumps must be provided with an easy, readily accessible means of electrical and plumbing disconnect, and a noncorrosive lifting device as a means of removal for servicing.

D. Pumps must be automatically controlled with mechanical switches designed for use with pumps and control panels.

E. Pumps must have automatically resetting audible and visual high water level alarm with manual silence switch that is located in or near the building served by the pump. Only the audible alarm may be user cancelable. The electrical box for the pump and alarm system must not be located in an environment that may damage the components.

F. Wiring must be of proper construction and gauge and permanently fixed to a supporting structure under permit from the local Administrative Authority.

G. The pump and alarm must be connected to separate circuits at the electrical supply panel.

H. There must be a non-resettable digital pump cycle counter or time in the control box.

I. There must be a manual override switch in the control box to facilitate dosing control during inspections.

Chapter 8. Pipe

A. All pipe throughout the wastewater system must be clearly labeled and installed so that the labeling can be readily identified by LA inspectors. Labeling, consisting of durable ink, must cover at least 50% of the length of the pipe. Labeling may consist of a solid line, letters, or a combination of the two. Intervals between markings must not exceed 12 inches.

B. Schedule 40 ABS or equivalent must be used from the house to the septic tank.

C. Schedule 40 ABS or SDR 35 (ASTM D 3034) must be used as follows:
1. From the septic tank to the distribution box (if applicable)
2. From the distribution box outlet for a minimum of 5 feet
3. From the septic tank to the pump chamber (if applicable)

D. Gravity Distribution (leachline) Dispersal
1. One of the following grades of 4-inch perforated pipe must be used:
   a. SDR 35 (ASTM D 3034) 4-inch diameter
   b. Triple Wall ASTM F810
2. Gravelless chambers may be used provided the products meet IAPMO standard PS-63.
3. The pipe described in subsection D.1. of this section must have 2 rows of holes spaced 120 degrees apart and 60 degrees on either side of a centerline. The holes of each row must not be more than 5 inches on-center and must have a minimum diameter of one-half inch.

E. Pressure transport pipe, pressure distribution manifolds, and pressure distribution laterals (piping and fittings), must meet the most current requirements for schedule 40 PVC pressure pipe as identified in ASTM Specifications D-1785, or other material approved by the LA. All pressure distribution laterals and all
pressure transport and manifold piping must be adequately sized for the design flow.

F. Curtain drain pipe must meet the requirements specified in the Manual for gravity drainfield pipe. Other types of pipe may be approved by the LA, provided it can be demonstrated that the selected pipe has the structural strength for the application proposed.

Chapter 9. Drainrock
A. Gravel used for drainrock must be ½ inch to 2½ inches in diameter. Uniformly graded material is recommended to maximize pore space. Drainrock must be clean, washed, non-deteriorating gravel, with the percent by weight passing the U.S. No. 200 sieve no greater than 0.5%. Alternatives to drainrock, as described in this Chapter, may be accepted on a case-by-case basis.

B. Gravelless systems are allowed provided the requirements for such systems as described in Part Three of this Manual are followed.

Chapter 10. Barrier Material
A. Untreated building paper (40-60 lbs.) or two inches of compacted straw may be used for standard gravity systems.

B. Filter fabric must be used for non-standard gravity systems and must meet or exceed the specifications described in the following table:

<table>
<thead>
<tr>
<th>Property</th>
<th>Requirement</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grab Strength</td>
<td>80 lbs.</td>
<td>ASTM D4632</td>
</tr>
<tr>
<td>Puncture Strength</td>
<td>25 lbs.</td>
<td>ASTM D4833</td>
</tr>
<tr>
<td>Trapezoid Tear</td>
<td>25 lbs.</td>
<td>ASTM D4533</td>
</tr>
<tr>
<td>Apparent Opening</td>
<td>AOS &lt; 0.297 mm, or &gt; #50 US Standard Sieve</td>
<td>ASTM D4751</td>
</tr>
<tr>
<td>Size</td>
<td>&gt; #50 US Standard Sieve</td>
<td></td>
</tr>
<tr>
<td>Permeability</td>
<td>0.4 cm/sec for Soil Types 1,2</td>
<td>ASTM D4491</td>
</tr>
<tr>
<td></td>
<td>0.004 cm/sec for Soil Types &gt; 2</td>
<td></td>
</tr>
</tbody>
</table>

Examples of filter fabrics meeting this specification include: Mirafi 140 NSL.

Chapter 11. Bundled EPS Synthetic Aggregate
A. As substitute for pipe, drainrock, and barrier material, Bundled Expanded Polystyrene (EPS) Synthetic aggregate meeting IAPMO standard IGC 276 may be used for wastewater dispersal. Units are cylindrically shaped; having a seamless external permeable netting that contains EPS synthetic aggregate. A geotextile is pre-inserted between the EPS synthetic aggregate and netting as a barrier material to overlying soil. At least one bundled EPS synthetic aggregate unit in the configuration shall include an internal 4-inch pipe. The internal pipe shall comply with ASTM F405.

B. Bundled EPS synthetic aggregate shall be H-10 rated. Units may contain a plastic pipe for longitudinal conveyance of water.

C. EPS synthetic aggregate particiles shall be relatively
uniform in shape and size. The aggregate particle size may range from 0.5 inches to 2.0 inches along any axis. EPS synthetic aggregate must provide a minimum porosity of 30%.

A. All filter materials used in single-pass sand filters and mound systems must fall within the limits of the specifications shown in the following graph for the amounts of material retained/passing (by weight). This specification closely follows the ASTM C-133 concrete sand specification.

B. The material must also have a uniformity coefficient of 4 or less. The uniformity coefficient is calculated by dividing D60 (the size of screen opening where 60 percent of a sample passes and 40 percent is retained) by D10 (the size of screen opening where 10 percent of a sample passes and 90 percent is retained). For sands with a D10 less than 0.3 mm, the designer should consider a loading of no greater than 1.0 gallon/square foot-day, and specify frequent dosing. A sieve analysis, (done in accordance with ASTM D 136 for dry product, or ASTM C-117 for wet product), of the material is required prior to transport to the construction site.

C. A report of the sieve analysis and on-site analysis results must be available for the LA prior to system approval and for inclusion in the system's permanent file.

Chapter 13. Containment Vessel for Intermittent Sand Filter
A. Lined Pit: when a sand filter is constructed in an excavated pit the following criteria are to be met.

B. Unsupported polyvinyl chloride (PVC) shall have the following properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>ASTM D1593 Para 9.1.3</td>
</tr>
<tr>
<td></td>
<td>30 mil minimum</td>
</tr>
<tr>
<td>Specific Gravity (Minimum)</td>
<td>ASTM D792 Method A</td>
</tr>
<tr>
<td>Minimum Tensile Properties (each direction)</td>
<td>ASTM D882</td>
</tr>
<tr>
<td>(A) Breaking Factor (pounds/inch width)</td>
<td>Method A or B (1 inch wide)</td>
</tr>
<tr>
<td></td>
<td>69</td>
</tr>
<tr>
<td>(B) Elongation at Break (percent)</td>
<td>Method A or B</td>
</tr>
<tr>
<td></td>
<td>300</td>
</tr>
<tr>
<td>(C) Modulus (force) at 100% Elongation</td>
<td>Method A or B</td>
</tr>
<tr>
<td>(pounds/inch width)</td>
<td>27</td>
</tr>
<tr>
<td>Tear Resistance (pounds, minimum)</td>
<td>ASTM D1004</td>
</tr>
<tr>
<td></td>
<td>Die C</td>
</tr>
<tr>
<td>Low Temperature</td>
<td>ASTM D1790</td>
</tr>
<tr>
<td></td>
<td>-20°F</td>
</tr>
<tr>
<td>Dimensional Stability (each direction, percent change maximum)</td>
<td>ASTM D1204 212°F, 15 min.  ± 5</td>
</tr>
<tr>
<td>Water Extraction</td>
<td>ASTM D1239</td>
</tr>
<tr>
<td></td>
<td>-0.35% max.</td>
</tr>
<tr>
<td>Volatile Loss</td>
<td>ASTM D1203 Method A</td>
</tr>
<tr>
<td></td>
<td>0.7% max.</td>
</tr>
<tr>
<td>Resistance to Soil Burial (percent change maximum in original value)</td>
<td>ASTM D3083</td>
</tr>
<tr>
<td>(A) Breaking Factor</td>
<td>-5</td>
</tr>
<tr>
<td>(B) Elongation at Break</td>
<td>-20</td>
</tr>
<tr>
<td>(C) Modulus at 100% Elongation</td>
<td>±10</td>
</tr>
<tr>
<td>Bonded Seam Strength (factory seam, breaking factor, ppi width)</td>
<td>ASTM D3083 55.2</td>
</tr>
<tr>
<td>Hydrostatic Resistance</td>
<td>ASTM D751 Method A</td>
</tr>
<tr>
<td></td>
<td>82</td>
</tr>
</tbody>
</table>
C. Concrete Containment Vessel: to be designed and/or approved by a qualified professional engineer if the following conditions are not met.

1. Above ground tank
   a. Walls
      (1) At least 6 inches thick
      (2) 4 feet or less in height
      (3) Rebar reinforcement: 3/8 inch diameter rebar on 2-foot centers horizontally and vertically, with continuous lengths wrapped around the corners.
   b. Floor
      (1) At least 3 1/2 inches thick
      (2) Reinforced with steel mesh (CRSI standard #6-1010) to prevent cracking and to maintain water-tightness
   c. Tank is to be designed, constructed, and sealed to be water-tight.

2. Below ground tank
   Any below ground concrete tank must be watertight. The design of any such tank is to be approved by a qualified professional engineer and meet the specifications of this Manual.

Chapter 14. Observation Port Design
Part Three: System Requirements

Chapter 1.  General Requirements

These general requirements apply to all onsite wastewater systems, unless otherwise specified within this Manual.

A.  Wastewater Strength

1.  Domestic strength wastewater, for the purpose of this Manual, is wastewater with the following characteristics:
   a.  Total suspended solids (TSS) <150 mg/L
   b.  Five-day Biochemical Oxygen Demand (BOD) <230 mg/L
   c.  Fats, Oils, and Greases (FOG) <25mg/L

2.  Unless otherwise demonstrated by an Authorized Professional, significant amounts of recreational vehicle holding tank wastes, when discharged in a concentrated and undiluted volume, such as at a commercial RV dump station, shall be considered high strength waste and is prohibited. Significant amounts mean amounts greater than incidental dumping such that the volume, frequency, overall strength or chemical additives preclude definition as residential sewage.

3.  Wastewater strength exceeding the characteristics noted above must receive pretreatment sufficient to lower the waste strength to the level of that commonly found in domestic residential septic tank effluent before discharge into a standard gravity or supplemental treatment wastewater system.

4.  The Central Valley Regional Water Quality Control Board will be notified by the LA whenever the LA approves a pretreatment system or methodology for high strength wastewater.

B.  Table V provides minimum vertical separation and Table IV provides application rate requirements based on the USDA soil texture classification system in Table II.  Soil textural classification should be considered the primary data source for system sizing.

C.  Seasonal groundwater monitoring will be required by the LA for on-site wastewater systems whenever soil coloration (redoximorphic features) indicates the seasonal groundwater level may be elevated to within twenty four inches of the required vertical separation, or where other factors, including but not limited to soil maps, historical observations, vegetation, or topography indicate that elevated seasonal groundwater may be present. Further information about seasonal groundwater monitoring is found in Section 700-120 and Part I of this Manual.

D.  Percolation testing and Particle size analysis should be considered a source of supplemental information for system sizing.

E.  Soils that percolate at a rate of 1-10 mpi require at a minimum pressure distribution and are not to be permitted by the LA unless there is demonstration of adequate filtration capacity by utilizing design features including, but not limited to:
1. Use of supplemental treatment systems, including the single-pass sand filter;
2. Use of pressure distribution or subsurface drip irrigation for dispersal;
3. Reduction in application rate of wastewater to the dispersal field, beyond that which is specified in the Manual;
4. Increase in vertical separation, beyond that which is specified in the Manual; and
5. Increase in horizontal setback distances to wells and/or surface water to that which is specified in this Manual.

F. When sizing by soil group and more than one soil group is encountered within a soil profile, drainfield trench sizing must be based on the most restrictive soil group encountered within 24 inches from the bottom of the drainfield trench. When calculating the required lineal feet of the dispersal field, only the trench bottom area may be considered.

G. When a soil group has been determined by particle size analysis and the result places the determination closely on the border of two soils types, as determined by the USDA Soil Conservation Services soil classification system, an alternative application rate between the soils types may be proposed for systems designed by an authorized professional.

H. The LA may allow up to a 20% reduction in drainfield sizing based on inclusion of a portion of the trench sidewall area for determining absorptive area when pressurized distribution is utilized. The base from which the reduction would be made is the size of the system calculated from trench bottom only utilizing the application rates associated with soil classifications in Table IV.

I. Reserve Area. A reserve area with suitable site conditions for a new dispersal system installation must be set aside. The reserve area must be:
1. Equal to 100 percent of the capacity required for a replacement dispersal system
2. Totally separate from the initial dispersal system area,
3. Able to meet all current design requirements for the type of replacement system proposed, including soil depth, soil type, slope restrictions, and setbacks, etc.
4. Fully protected to prevent damage to soil and any adverse impact on the immediate surroundings that may affect the installation of the replacement dispersal system or its function

J. Systems must be designed to disperse effluent to subsurface soils in a manner that provides unsaturated zone treatment and aerobic decomposition of the effluent. The base of the dispersal system must be designed and installed at the shallowest practicable depth at or below the original elevation of the soil surface to maximize elements critical to effective treatment of effluent in the soil. Elements critical to effective treatment includes oxygen transfer, biological treatment, and vegetative uptake of nutrients.

K. The minimum liquid capacity of any septic tank installed must be as specified in Section 700-150 F (2) (3).

L. Where the site evaluation reveals the probable existence of slope instabilities within 50 feet of the primary or repair dispersal field areas, the LA will require a Registered Geotechnical Engineer or Registered Civil Engineer inspect the site
and recommend mitigation measures to prevent slope instabilities from impacting the on-site wastewater system. Such measures may include, but are not limited to, the following:

1. Altering the proposed system location to avoid steep slopes and/or slope instabilities;
2. Establishing specified recommended setbacks from identified slope instabilities or from steep slopes; and
3. Incorporating wastewater system design measures to minimize the creation of localized saturated flow conditions, such as pressure distribution or subsurface drip irrigation instead of gravity flow.

M. For on-site wastewater systems located within a 100-year flood zone, the LA will require the authorized professional to include a special design analysis and design features to prevent caused by inundation with water. The analysis and design features must include:

1. Protection of supplemental treatment, pressure distribution, and subsurface drip irrigation components; and
2. Prevention of discharge of wastewater into flooded dispersal areas from pumps or dosing siphons where the distribution piping is less than 12 inches below ground surface.
3. The horizontal setbacks shown in Table I will apply to all new on-site wastewater systems unless otherwise specified in this manual.

**Chapter 2. Design Flow**

A. Projected daily sewage flow from single family residences must be calculated at 130 gallons per bedroom.

B. Projected daily flows for other than single-family dwellings shall be estimated using section 700-150 B (2) unless, on a case-by-case basis, the LA approves metered water use data, or other supporting data in lieu of the estimated sewage flows set forth in the table. However, in no case shall a system be designed for a flow of less than 130 gpd. Existing data may be used, provided the following specifications are met:

1. The design flow may be calculated by actual potable water meter readings, or facility wastewater influent or effluent meter readings if water records are from billing records of the service provider or from water meters certified to be within 2% by the water purveyor or, in the case of wastewater metering, the meter read values are certified as “correct” by a certified designer.
2. The average daily flows shall be adjusted for peak flow days as follows:
   a. If the water meter records are recorded on a daily basis, the highest ten day flows can be averaged and used for the design flow.
   b. If the water meter records are recorded on a weekly basis, the design flow shall be calculated by dividing the number of days the facility was in use into the highest weekly flow, and multiplying by 1.2.
   c. If the water meter records are recorded on a monthly basis, the design flow shall be calculated by dividing the number of days the
facility was in use into the highest monthly flow, and multiplying by 1.5.

d. If the water meter records are recorded on a quarterly basis, the design flow shall be calculated by dividing the number of days the facility was in use into the highest quarterly flow and multiplying by 2.0.

3. Design Flows

a. Most current adopted version of the Plumbing code or other recognized source approved by the LA.

Chapter 3. Installation

A. Septic tanks must be installed on a level, stable base of either pea-gravel or sand.

B. Septic tanks located in high groundwater areas must be accompanied with engineered anti-buoyancy calculations to prevent flotation.

C. All septic tanks must be installed with watertight risers extending to finished grade, with surrounding grading to facilitate drainage away from the riser.

D. Septic tanks must be installed in a location that provides access for servicing and pumping.

E. Systems will not be installed when moist or wet conditions cause trench sidewall or bottom area degradation of soil structure and porosity (which frequently appears as smearing and compaction).

F. Each drainfield trench will have distribution piping that is centered horizontally in the trench.

G. Drainfield trenches must be installed on contour.

H. Prior to backfilling the trench, the drain rock must be covered with filter fabric, a minimum of 2 inches of compacted straw or with untreated building paper.

I. Backfill must be carefully placed to prevent damage to the system.

J. Backfill must be approved soil free of large stones, frozen clumps of earth, masonry, stumps, waste construction materials, or other materials that could damage the system.

K. All distribution boxes must be bedded on level pea gravel or sand base.

L. Observation ports, of a design approved by the LA, must be installed at the end of each drainfield trench.

M. Adequate erosion control measures must be utilized at all times in conformance with applicable county regulations and per the consultant’s design.

N. Slope of Lines

1. Tight line From House

   Maintain 1/8 to 1/4 inch, depending on the size of the pipe as allowed by the most recent adopted Plumbing Code, drop per running foot (1% to 2% slope). Use two 45 degree fittings and a cleanout when a step-down is necessary. Locate step-down as close to house and as far from septic tank as possible to avoid unnecessary turbulence in septic tank.

2. Tight line From Septic Tank

   Maintain minimum of 6 inch drop per 100 feet (0.5% slope) to perforated
3. Perforated Lateral
Level each lateral; maximum allowed tolerance will be ± 1 inch with a maximum grade of two (2) inches per one hundred (100) feet. Place an end cap on each lateral. Rotate each section of lateral pipe so holes are at 5:00 and 7:00 position.

O. Whenever a trench excavation could act as a conduit for groundwater movement between system components, the trench must be back-filled with a minimum of 5 lineal feet of sufficiently restrictive material, such as clay, to prevent the flow.

Chapter 4. Septic Tank Destruction

A. Application
1. The application for a Destruction Permit may be obtained through the LA (Sutter County Environmental Health). The completed application needs to be submitted along with the required fee and a scaled site plan indicating the location of the existing septic tank(s) and current or known future structures.

B. Issuance
1. The Destruction Permit will be issued by the LA. The LA strongly recommends that all work be performed by a Licensed Contractor, although some work may be done by do-it-yourself property owners with prior LA authorization. All work must meet LA and Building Division requirements and pass inspection.

2. Obtaining the permit gives the LA oversight of the abandonment process to ensure that all structural requirements are met and that the Declaration of Septic Tank Destruction is submitted at the time of inspection.

C. Process
1. The septic tank must be pumped and certified empty by a Registered Septage Pumper.

2. If the tank is to be destroyed in place and is greater than 5’ from any existing or future proposed structures, the person performing the work must ensure that the bottom of the tank is broken such that it is unable to hold water, and then filled with self-compacting soil, sand, or pea gravel. Should the person performing the work choose to fill the empty tank with 2-sack slurry, breaking the bottom of the tank is not required. Should the person performing the work choose to remove the tank, the excavation must be backfilled with clean self-compacting soil, sand, or pea-gravel.

3. If the tank is less than 5’ from any existing or future proposed structures, a two-sack slurry mixture must be used to fill the tank; otherwise, a Professional Engineer must certify the destruction methodology utilized.

4. Arrangements for inspection of the system destruction must be made with the LA. In some instances, the Licensed Contractor may be able to submit electronic documentation of the destruction process in place of an on-site inspection.

5. The person performing the work must submit the Declaration of Destruction form provided.
Chapter 5. Standard Gravity Systems

Standard gravity systems are on-site wastewater systems consisting of a septic tank and a gravity distribution drainfield. Standard gravity systems, as used in this Manual, include those that utilize shallow trench depth, standard trench depth, or deep trench depth gravity drainfields. (Note: Deep trench drainfields requiring pressurized rather than gravity distribution may be found under other applicable requirements of this Manual.)

A. Site Requirements
1. Soils in the primary and replacement drainfield area will allow a vertical separation as required by Table V.
2. The site has not been filled or the soil has not been modified in a way that would adversely affect functioning of the system.
3. The site will not be on an unstable landform, where operation of the system may be adversely affected.
4. The site of the drainfield and replacement areas must not be covered by asphalt or concrete unless site constraints allow no other feasible alternative.
5. The site of the drainfield and replacement areas must not be subject to the activity associated with vehicular traffic, corrals, pens, arenas or other concentrations of livestock, or other activity which would adversely affect the soil or integrity of the system.

B. The slope of the ground in the drainfield and replacement areas will not exceed 30%.

C. Drainfield Excavation Requirements
1. Drainfield trenches must be constructed in accordance with the following standards, unless otherwise specified:
   a. Length maximum: 100 feet
   b. Bottom width minimum: 12 inches
   c. Bottom width maximum: 36 inches
   d. Depth: 6-24 inches
      (1) > 24 may be considered by the LA on a case by case basis
2. Minimum distance of undisturbed soil between drainfield trenches (inner sidewall-to-inner sidewall) must be 7 feet unless otherwise approved in 700-150 K.
3. There must be a minimum of 9 inches of backfill over the drain rock.
4. Drain rock will extend the full width and length of the drainfield trench. There must be at least 6 inches of drain rock under the distribution pipe and at least 2 inches over the distribution pipe.
5. A soil barrier must be placed on top of the drain rock to exclude fines from the drain rock. The barrier will consist of filter fabric meeting the minimum specifications outlined in this Manual, straw, or untreated building paper.
6. Inspection ports must be installed at the end of each drainfield trench as follows:
a. Each inspection port must extend to the finished grade or within an approve vault.
b. The ground surrounding the inspection port must be graded so that surface water does not accumulate adjacent to the port.
c. The inspection port must be capped to prevent vandalism and tampering.
d. Inspection ports must have a minimum diameter of four (4) inches.

D. Distribution
1. Level Sites
   a. For two or more laterals use a distribution box.
   b. Tie in the ends of the laterals to create a closed loop system when site conditions allow.
   c. Level distribution boxes with water to assure even flow. Flow equalization devices are required.

2. Sloped Sites
   a. Use a distribution box at the uppermost lateral and tight line from the distribution box to the beginning of the down slope laterals

E. Shallow Trench Systems
   When the drainfield trench (measured at down slope sidewall) is excavated less than 24 inches into the original grade, the following additional requirements will apply:
   1. Soil used for cover shall be a loamy material with less than thirty (30) percent clay content.
   2. The drainfield area will have the vegetation removed and must be scarified, parallel to contours, no deeper than 2 inches at the time of construction.
   3. Soil cap will extend a minimum of 5 feet beyond the exterior trench sidewall on the upslope side and 10 feet elsewhere.
   4. The site must be contoured and seeded or landscaped in accordance with the approved construction plan and permit requirements in order to shed water, control erosion and to prevent surface drainage onto the system.
   5. The site must be protected from the activity of vehicular traffic, corrals, horse arenas, stables, or other activities that could damage the system or the integrity of the soil.

F. Pump Systems
   When a pump is utilized to enable gravity drainfield trenches upslope of the structure to be served, the following additional requirements will apply:
   1. The pump chamber, pump tank, and/or dosing tank must meet the requirements specified in Section 700-150 G and Part Two of this Manual.
   2. The pump intake must be provided with a screen.
   3. The pump tank will have capacity sufficient to deliver the design dose and have a minimum additional storage capacity above the high level alarm of one-half the daily design flow so that, in the case of pump failure or power outage the tank has the capacity to accept a limited amount of wastewater from the residence or commercial establishment.
4. Each tank must be installed on a stable level base, generally consisting of 3 inches of pea gravel or sand.

5. Each pump tank must be provided with a watertight riser extending to the ground surface or above, with a minimum inside horizontal measurement of 24". Provision must be made for securely fastening the manhole cover.

6. Pump tanks in high groundwater areas must be weighted or provided with an anti-buoyancy device to prevent flotation as per the manufacturer's recommendation and as required in Section 700-150 G(5) and Part 2 of this manual.

7. Specialized Use of Pump with Pump Basin
   A specialized purpose for use of a pump and pump basin is to address the issue of plumbing elevation for a portion of a residence, or a remote bathroom for outbuildings, being too low in elevation relative to the septic tank to allow gravity flow to the septic tank. In these cases,
   a. A pump basin with pump may be utilized when any toilet being serviced, in the case of residential application, is not the sole toilet utilized by the residence.
   b. A solids handling pump, rather than a grinder pump, must be used and must pump directly into the septic tank through a 4 inch connection 10 ft. from the tank inlet.

G. Gravelless Chamber and Bundled Expanded Polystyrene (EPS) Synthetic Aggregate Systems
1. With 100% of the area required for a gravel-filled drainfield established and dedicated (for initial and replacement fields) reduced-size gravelless chamber bundled EPS synthetic aggregate drainfields may be designed and installed.

2. System design, layout, and installation must be done in a manner easily facilitating the installation of additional gravelless chamber or bundled EPS synthetic aggregate drainfield if future conditions necessitate such action.

3. Except for those serving seasonal dwellings, the drainfield size using gravelless chambers or bundled EPS synthetic aggregate products may be reduced by 30%, provided no additional sizing reductions (such as would otherwise be allowed for use of pressurized distribution or supplemental treatment) are utilized in the design of the drainfield system.

4. Wastewater from residential sources must receive pre-treatment at least equal to that provided in a conventional two-compartment septic tank, before discharge to a gravelless drainfield.

5. Drainfields using gravelless distribution products must be installed according to the manufacturer's instructions, in a manner that is consistent with these standards and with state and local rules.
Chapter 6. Pressurized Distribution Systems

A. Pipe, Valves, and Fittings
1. All pressure distribution pipes and fittings, including transport lines, manifolds, laterals and fittings, must be adequately sized for the design flow.
2. Pressure transport piping must be uniformly supported along the trench bottom, and at the discretion of the LA, it must be bedded in sand or other material approved by the LA.
3. The ends of lateral piping will have 90 degree long sweeps and ball valves or threaded caps housed in valve boxes that accommodate threaded plugs or caps.
4. All joints in the pressure distribution manifold, lateral piping, transport pipe, must meet ASTM Specification D-1785.
5. A gate valve or ball valve must be placed on the pressure transport pipe inside or outside of the pump riser, in or near the dosing tank.
6. A check valve must be placed between the pump and the gate valve, when required. A check valve is not required if the pump has an internal check valve. All check valves and gate valves must be in an accessible and protected location for maintenance and repair.
7. An anti-siphon valve must be placed between the pump and leach field when the leach field is down slope of the pump.
8. All required valves must be placed in boxes accessible for maintenance from the surface.

B. Dosing Tanks
1. The pump chamber, pump tank, and/or dosing tank must meet the requirements specified in Part Two of this Manual.
2. Duplex alternating pumps may be required by the LA for some installations (e.g. large systems approved for commercial facilities).
3. The dose volume must be sufficient to fully pressurize the lines, assuring equal distribution through the system. The dose volume must be sufficient to refill any part of the pressure distribution system (including supply line and lateral lines) that has been designed to drain following a dose (for example, where necessary to prevent freezing in cold weather), and then deliver sufficient additional volume to disperse the daily design flow in an appropriate number of doses per day. Drainfield performance is enhanced when the daily flow is dispersed in smaller, more frequent doses throughout the day. In most applications, between 12 and 24 doses per day per zone, is appropriate, although a number outside of that range may be appropriate in some cases where it is not practical to design the system to deliver twelve or more doses, or where it is otherwise undesirable to design the system within that range of doses.
4. Dispersal Trenches or Beds
5. The top of the drain rock must be covered with filter fabric.
6. A minimum of 9 inches of backfill is required over the filter material within the drainfield trench.
C. Hydraulic Design
1. Orifices will have a minimum diameter of 1/8 inch and be evenly spaced at a distance between 2 and 6 feet. Orifices larger than 1/8 inch shall be evaluated on a case by case basis due to design constraints related to dose volume, effluent quality, and dispersal field size.
2. There must be a minimum 5 foot head at the orifice farthest from the manifold and no more than 10% head variation within a drainfield trench.
3. The effect of back drainage of the pressure distribution system must be evaluated for its impact upon the dosing tank and system operation.

D. Installation
1. All orifices of pressure distribution laterals must be covered with orifice shields to prevent soil washout.
2. Lateral piping must be laid in the horizontal center of the trench and level to within 2 inches in 100 feet.
3. Inspection ports must be placed at the end of the pressure distribution lateral within the drainfield trench.
4. Each dosing tank must be installed on a stable level base.
5. Each dosing tank must be provided risers as described in Part 2 of this Manual.
6. Dosing tanks located in high groundwater areas must be weighted or provided with an anti-buoyancy device to prevent flotation as per the manufacturer's recommendation and as required in Part 2 of this manual.

E. Sloping Sites
1. Ball or gate valves or flow restrictors must be installed on each pressure distribution lateral to facilitate regulation of flow within each lateral.
2. The LA will inspect the pressure distribution system for verification of hydraulic head over the pressure distribution laterals ("squirt height test").
   a. Water and a source of generated electricity must be available for this inspection.
   b. Photographic documentation of the pressure test may be accepted by the LA on a case-by-case basis.
   c. Where site conditions preclude the entire drainfield being left open for the pressure test, the LA may allow a portion of the trenches to be covered prior to the test and observe the pressurized flow at the distal end of each lateral.

Chapter 7. Subsurface Drip Irrigation
Subsurface Drip Irrigation is a method of dispersing wastewater uniformly over a large area by using numerous emitters installed at a shallow depth and very small doses.

A. Supplemental treatment is required prior to dispersal utilizing subsurface drip irrigation.
B. Minimum depth of drip line must be 6 inches.
C. Subsurface drip dispersal systems must be designed, installed and managed to provide even distribution and unsaturated subsurface flow.
D. All subsurface drip dispersal system materials must be warranted by the manufacturer for use with wastewater and resistant to clogging from solids, bacterial slime and roots.

E. Fittings used to join drip line to the distribution and flush manifolds must be in accordance with the manufacturer’s recommendations.

F. All emitters in the drip tubing installed on sloping sites must be pressure compensating.

G. The subsurface drip dispersal system must be designed in the configuration that would minimize the flowing of effluent to the lowest area of the field when the pump shuts off or when the flow depressurizes.

H. A minimum velocity of 0.5 ft./sec or greater velocity if recommended by the manufacturer for field flushing of the laterals is required.

I. All subsurface drip dispersal systems must be designed with a dosing controller with automatic field flushing, for zone alternating, for dose frequency, for dose volume and for flushing of the filters.

J. All subsurface drip dispersal systems must be designed with a bypass line to facilitate field flushing.

K. All subsurface drip dispersal systems must be designed with filters to remove particles 100 microns or larger.

L. All subsurface drip dispersal systems must be designed with air relief valves placed at the highest point on both supply and return manifolds.

M. All the drip dispersal systems must be designed to accept flows that have residential-wastewater quality.

N. Sizing criteria must be based application rates shown in Table IV of the Ordinance or as determined by the designer.

O. All subsurface drip dispersal systems must be installed by certified installers with specific training in the installation of subsurface drip dispersal systems. Proof of the specified training by way of certification or a letter from an approved trainer is required.

P. Installation of the subsurface drip dispersal system must be per the manufacturer’s instructions.

Chapter 8. Supplemental Treatment Systems

Supplemental treatment systems are NSF certified on-site wastewater systems that provide a specified level of treatment prior to dispersal into the drainfield.

A. Supplemental Treatment Components

1. Supplemental treatment components must be designed to meet the following BOD and TSS concentrations and, where nitrogen is identified in the RWQCB basin plan as a water quality concern, the following nitrogen effluent concentration:

   a. 30-day average BOD concentration will not exceed 30 milligrams per liter (mg/L), or alternately, a carbonaceous BOD (CBOD) in excess of 25 mg/L

   b. 30-day average TSS concentration will not exceed 30 mg/L
c. 30-day average TN concentration will not exceed 10 mg/L as nitrogen

2. Testing to comply with these performance levels must be conducted based on effluent analysis with the following minimum detection limits:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Detection Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD</td>
<td>2 mg/L</td>
</tr>
<tr>
<td>TSS</td>
<td>5 mg/L</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>1 mg/L</td>
</tr>
</tbody>
</table>

B. Disinfection Components

1. Add-on components performing disinfection must be designed to achieve an effluent total coliform bacteria concentration, at the 95th percentile, of not greater than the following:
   a. 10 MPN per 100 ml prior to discharge into the dispersal field where the soils exhibit percolation rates of 1-10 minutes per inch or where the soil texture is sand; or
   b. 1,000 MPN per 100 ml prior to discharge into the dispersal field where the soils exhibit percolation rates greater than 10 minutes per inch or consist of a soil texture other than sand.

2. Testing of supplemental treatment components that perform disinfection must be evaluated quarterly based on analysis of total coliform with a minimum detection limit of 2.2 MPN. Such systems must be maintained to comply with the performance requirements at all times.

C. Where feasible, as determined by the LA, supplemental treatment components must be equipped with a telemetric alarm that notifies the owner and O&M Specialist in the event of system malfunction.

D. All supplemental treatment systems must be followed by pressurized distribution or subsurface drip irrigation for dispersal.

E. All supplemental treatment systems must be designed by certified designers and installed by certified installers with specific training in the installation of the type of system utilized. Proof of the specified training by way of certification or a letter from an approved trainer is required.

F. All supplemental treatment systems must maintain a current Operating Permit and be periodically inspected and monitored by a certified Operation and Maintenance Specialist as required in the On-Site Wastewater Ordinance and Part 4 of this Manual.

G. Supplemental Treatment Systems in Lieu of Standard gravity systems

1. When a drainfield site is utilized that meets the criteria described above, nothing will preclude the applicant from opting to use a supplemental treatment system in lieu of a standard gravity system.

Chapter 9. Proprietary Systems

When siting an on-site wastewater system, the drainfield must be located, whenever possible, on that portion of the parcel with a minimum vertical separation of 24 inches.
A. A proprietary supplemental treatment system provides treatment of wastewater by exposing the effluent to a contact medium under diverse environmental conditions in a self-contained enclosure.

B. Proprietary supplemental treatment systems must be designed to meet the level of treatment specified in Chapter 8 of this Manual.

C. All proprietary supplemental treatment systems must be designed by certified designers and installed by certified installers with specific training in the installation of the type of system utilized. Proof of the specified training by way of certification or letter from an approved trainer is required.

D. All owners of proprietary treatment systems must maintain current Operating Permits and be periodically inspected and monitored by certified Operation and Maintenance Specialist.

E. Where feasible, as determined by the LA, supplemental treatment components must be equipped with telemetric alarms that notify the owner and O&M Specialist in the event of system malfunction.

F. All proprietary supplemental treatment systems must have appropriate certification. NSF/ANSI (National Sanitation Foundation/ American National Standards Institute), Standard 40.

G. NSF approved proprietary components may not be used independently. Proprietary components may be used as part of the overall wastewater treatment system as tested and approved by NSF.

H. Manufacturers of proprietary systems must provide homeowners with Operation and Maintenance Manuals.

Chapter 10. Single-Pass Sand Filters

A. Influent Wastewater Strength
   1. Single-pass sand filters are designed for treating residential strength wastewater. The wastewater applied to the single-pass sand filter must not be higher in strength than 220 mg/l BOD₅ or 145 mg/l TSS). Lower wastewater strengths, without increased flow rates are preferable for assuring long term operation of a single-pass sand filter system. High strength wastewater shall require pretreatment in order to reduce its strength prior to introduction into a single-pass sand filter and the soil dispersal component.

B. Daily Wastewater Flow - Design Estimates
   The minimum wastewater design flow shall be as specified in Chapter 3 of this part of the Manual.

C. Location Requirements
   1. The minimum setback requirements for closed bottom single-pass sand filters will be the same as those for septic tanks.
   2. The minimum setback requirements for open bottom single-pass sand filters will be the same as those for a standard gravity drainfield or leach bed.

D. Design Standards
   1. Filter media must meet the specifications outlined in Part 2 of this Manual.
2. Filter Bed Sizing
   a. The loading rate to the sand filter must not exceed 1.0 gallon/day/square foot, using appropriate daily wastewater flow design estimates.
   b. The media depth must be a minimum of 24 inches.

3. The filter bed is contained either in a flexible membrane lined excavation as specified in Part I of this Manual, or in another containment vessel approved by the LA.

4. Wastewater Distribution
   a. Pressure distribution is required within the sandfilter and pressure distribution of subsurface drip irrigation is required for dispersal of sandfilter-treated effluent and must comply with the requirements specified in Chapters 7 and 8 of this Manual.
   b. The wastewater must be applied to the layer of drain rock atop the filter media as specified in Chapters 7, or sprayed upward against the top of gravelless chambers.

E. Timed dosing system is required and the dosing frequency or dose volume is dependent on the media specification used with the sand filter. To assure that appropriate dose volumes are delivered to the sand filter, the timer must be set to dose a minimum of 12 times daily.

F. Installation
   1. Containment must be structurally sound and have sufficient geometric and dimensional integrity to protect the liner.
   2. In order to prevent differential settling when the sand filter is put into service, the filter media must have a uniform density throughout.
   3. A geotextile filter fabric must be placed on top of the gravel bed.
   4. The cover must consist of no more than one foot of soil. The cover soil must be capable of maintaining vegetative growth while not impeding the passage of air (sandy loam or coarser) and be contoured and landscaped in accordance with the approved construction plan and permit requirements in order to shed water, control erosion and to prevent surface drainage onto the sand filter. Plant cover must be shallow root vegetation as generally described in the system design and operation and maintenance manual.
   5. Two observation and monitoring ports must be installed in the sand filter. One observation and monitoring port must be installed to the interface between the bottom of the drainrock and the top of the media. A second observation and monitoring port must be installed to the bottom of the under drain. The pumpwell may be used as the second observation port.
   6. Liner patches, repairs and seams shall have the same physical properties as the parent material.
   7. Site considerations and preparation:
      a. The supporting surface slopes and foundation to accept the liner shall be stable and structurally sound including appropriate compaction. Particular attention shall be paid to the potential of sink hole development and differential settlement.
b. Soil stabilizers such as cementations or chemical binding agents shall not adversely affect the membrane; cementations and chemical binding agents may be potentially

c. Every effort shall be made to minimize the strain (or elongation) anywhere in the flexible membrane liner.

8. Construction and installation:

a. For contained-design sand filter, grade the bottom of the excavation to provide a sloping liner surface, from the outer edge of the filter toward the point of under drain collection. Slope shall equal 8 inches fall overall or one inch of fall per foot of run, whichever is the greatest.

b. Sides of the excavation shall be smooth, free of possible puncture points.

c. Boots shall be bedded in sand and installed in accordance with manufacturer’s specifications.

d. Liner placement

(1) Liners shall be installed in accordance with manufacturer’s specifications, including those for:

(i) Temperature, precipitation

(ii) Sand bedding

(iii) Sealant type and procedure for use

(iv) Liner size

(v) Transport, handling, and storage

(vi) Deployment of panels

(vii) Anchoring of liner edges

(viii) Field seaming when necessary

(ix) Field repairs

(2) A site inspection shall be carried out by the LA or by the designer and the installer prior to liner installation to verify surface conditions and adherence to manufacturer’s and designer’s specifications

(3) Completed liner installations shall be visually checked for punctures, rips, tears and seam discontinuities before placement of any backfill. At this time the installer shall also manually check all factory and field seams with an appropriate tool. In lieu of, or in addition to, manual checking of seams by the installer, either of the following tests may be performed;
(i) Wet Test: The lined basin shall be flooded with water to within 6 inches of the bottom of the liner after inlets and outlets have been plugged. There shall not be any loss of water in a 24-hour test period.

(ii) Air Lance Test: Check all bonded seams using a minimum 50 PSI (gauge) air supply directed through a 3/16 inch (typical) nozzle held not more than 2 inches from the seam edge and directed at the seam edge. Riffles indicate unbonded areas within the seam, or other undesirable seam construction.

(iii) If the boot may be submerged in a seasonal high water table, performance testing of the sand filter/boot for leakage must be conducted by blocking the outlet pipe, and flooding the liner with a sufficient depth of water to submerge the boot seams. There shall not be any loss of water in a 24-hour test period.

G. System Drawings

Chapter 11. Mound Systems

A. Influent Wastewater Strength

Mound systems are designed for treating residential strength wastewater. The wastewater applied to the mound system must not be higher in strength than 230 mg/l BOD₅ or 150 mg/l TSS). Lower wastewater strengths, without increased flow rates are preferable for assuring long term operation of a mound system. High-strength wastewater shall require pretreatment in order to reduce its strength prior to introduction into a mound system.

B. Daily Wastewater Flow - Design Estimates

The minimum wastewater design flow shall be as specified in Chapter 6 of this Part of the Manual.

C. Locational Requirements

The minimum setback requirements for mound systems will be the same as those for a standard gravity drainfield or leach bed.
D. Design Standards

1. Media Specifications. Filter media must meet the requirements outlined in Part 2 of this Manual.

2. Minimum Effective Soil Depth
   A minimum of 24 inches of undisturbed, unsaturated, original soil as measured from the original ground surface is required for placement of a mound after all clearing; leveling and other site disturbance during lot development is complete.

   a. Filter media must meet the specifications outlined in Part 2 of this Manual.
   b. In order to prevent differential settling when the mound is put into service, the filter media must have a uniform density throughout.

4. Application Rates.
   a. The application rate for the mound infiltration area (gravel bed) must not exceed 1.0 gpd/ft$^2$.
   b. The application rate for basal area will be based on soil type.

5. Minimum Dosing Frequency
   Timed dosing system is required. The dosing frequency or dose volume is dependent on the media specification used as the filter material. To assure that appropriate dose volumes are delivered to the mound system, the timer must be set to dose a minimum of 12 times daily.

E. Installation


1. Cap and Topsoil Depth
   a. The cover soil must be capable of maintaining vegetative growth while not impeding the passage of air (sandy loam or coarser) and be contoured and landscaped in accordance with the approved construction plan and permit requirements in order to shed water, control erosion and to prevent surface drainage onto the sand filter.
   b. The final settled depth of the cap and topsoil should be no less than 12 inches above the center and 6 inches above the outer edge of the bed. Additional depth of topsoil may be needed during final construction activities to assure that the minimum depths are achieved following natural settling of the soil.
   c. The mound must not be left without a vegetative cover or allowed to be covered with weeds. Mowed turf grass and turf sod are the best vegetative covers for mounds.
F. Mound Placement
1. On sloping sites, the mound must be aligned with its longest dimension parallel to the site contours so as not to concentrate the effluent into a small area as it moves laterally down slope.
2. The mound must not be aligned, by design or construction, perpendicular to the contours.
3. On all sites the infiltration bed must be as long and narrow as possible to limit the linear loading rate of effluent to assure that all the effluent infiltrates into the natural soil before it reaches the toe of the filter media.
4. If the site does not permit the design of a "long and narrow" mound along the contours of the site, other on-site sewage treatment and dispersal technology must be selected. Mound systems are only suitable for sites where all of the design and siting criteria can be satisfactorily met.
5. Two or more beds on the same downhill plane.

G. Effluent Dispersal within Mound
A method providing uniform distribution with timed dosing throughout the bed in the filter media is required, either through use of pressure distribution as specified in Chapter 6 of this part of the Manual, or through use of subsurface drip irrigation, as specified in Chapter 7 of this part of the Manual.

H. Monitoring and Observation Ports
Each mound should have a minimum of two monitoring and observation ports, one placed in the infiltration bed down to the gravel-sand, and one down slope from the bed down to the sand-native soil interface. Unless otherwise specified in this Manual, down gradient observation and monitoring ports shall be installed as specified in the Mound System Manual (State Water Resources Control Board) in its current final draft or as hereafter adopted and updated by the State Water Resources Control Board.

I. Protection of mound system placement area
The designer will be responsible for the adequacy of, and the installer’s substantial compliance with, the installer’s construction plan. The construction plan must include provisions addressing:
1. Type of excavation equipment that will be used
2. Routes of ingress and egress of construction vehicles to assure maximum protection of the mound placement area
3. Means to assure that the area reserved for system replacement is not disturbed during the mound construction process including as necessary, instructions for erecting a temporary construction fence to protect the primary and reserve mound areas and adjacent area down slope of the mound placement area

4. Method to assure that soil moisture content is sufficient to allow construction of the mound without soil compaction or smearing

5. Method for preparing the native soil-filter material interface

6. Method for removing native vegetation

J. System Drawings
Part Four: Environmental Monitoring and Reporting

Chapter 1. Reporting Requirements

A. Annual Report

1. The LA will prepare and submit an annual report to the Central Valley Regional Water Quality Control Board no later than February 1 for the preceding year beginning one year after Regional Board approves the LAMP.
   
   1. The annual report will include:
      
      a. A statement that all on-site wastewater systems referenced in the report are classified as Tier 2.
      
      b. Certified Septage Pumpers: Applications and registrations issued as part of the local cleaning registration pursuant to California Health and Safety Code §117400 et seq.
      
      c. New and Repaired or Replaced On-site Wastewater Systems: Numbers and locations of permits.
      
      d. Complaints: Numbers and locations of complaints, related investigations, and means of resolution.
      
      e. Variances: Number and description of variances to the On-Site Wastewater Manual, the rationale for the variation, and the mitigating measures to assure the variance will be as protective of public health as the requirement in the Manual.
      
      f. Summary of any changes adopted by the Board of Supervisors to either the Ordinance or the Manual

2. Sutter County Environmental Health will maintain a water quality assessment program that consists of obtaining nitrate concentration from water quality data from the following sources:

   a. Regulated small water systems (SWS)
   
   b. Wells within Sutter County that are monitored as part of the Statewide Groundwater Ambient Monitoring and Assessment (GAMA) program

B. Five-Year Report

Every fifth year an evaluation report will be included that:

1. Evaluates of trends in nitrates found in the monitored wells

C. Report Format

1. Groundwater monitoring data will be submitted in Electronic Delivery Format (EDF) for Geotracker.

2. All surface water data will be submitted to California Environmental Data Exchange Network (CEDEN).
Chapter 2. Record Retention and Availability

A. All our records are maintained with other Assessor Parcel Number records indefinitely. They will be made available to Central Valley Water Board staff within 10 working days of a written request.

Chapter 3. Water Supplier Notification

A. The LA will notify public well and water intake owners if the OWTS is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, is in the drainage area catchment in which the intake point is located, and is located such that it may impact water quality at the intake point such as upstream of the intake point for a flowing water body, and the California Department of Public Health as soon as practicable, but no later than 72 hours upon discovery of a failing OWTS within the setbacks specified in the On-Site Wastewater Ordinance section 700-080, Table 1.

B. The LA will notify public water services of pending on-site wastewater system installations and repairs within prescribed set-backs specified in the On-Site Wastewater Ordinance section 700-080 Table 1.

C. The above notifications shall be made in writing and by telephone to persons identified in a call out list maintained by Sutter County Environmental Health