ORDINANCE NO. 1655

AN ORDINANCE AMENDING SECTIONS 6.4 – 12, 35, 42, 44, 51, 53, 55, 56, 60, 62, 70, 80, 81, 81.2, 83, 84.1, 84.2, 85, 86, 87, 87.1, 87.2, 88, 89, 89.1, 90 and Table 2 OF CHAPTER 6.4 TO THE SOLANO COUNTY CODE, RELATING TO ON SITE SEWAGE DISPOSAL.

The Solano County Board of Supervisors ordain as follows:

Section 1: Section 6.4-12 A of Chapter 6.4 is amended to read:

(a) Except as allowed by section 6.4-12(c), the standards contained in this Chapter apply to the siting, design and construction of on-site sewage treatment, storage and disposal systems, or their components, whether proposed as part of a land subdivision, a building permit, a land-use permit, replacement or repair of an existing system, or special event. These standards shall apply to all on-site sewage disposal systems discharging 2500 gallons per day (gpd) or less. These standards shall also apply to on-site sewage disposal systems discharging between over 2500 gpd and 5000 gpd if approved by with authorization from the Regional Water Quality Control Board having jurisdiction.

Section 2: Section 6.4-12 C of Chapter 6.4 is amended to read:

(c) These standards shall not apply to the following

(1) on-site sewage disposal systems that discharge more than 5000 gpd.
(2) individual sewage treatment plants that may be installed or designed for commercial development in areas not served by public sewer.
(3) a community sewage disposal system. This includes public sewer systems and community on-site sewage disposal systems.

Section 3: Section 6.4-35 of Chapter 6.4 is amended to read:

Approval. The Environmental Health Services Division shall review the applicable information associated with the tentative map of the proposed subdivision or with the lot line adjustment and submit recommendations and/or conditions of approval to the Planning Division or other responsible agency. Any significant deviations or modifications to the project after Environmental Health Services Division review and prior to any approval affecting the tentative map or lot line adjustment on file with the Environmental Health Services Division shall be resubmitted for review to the Environmental Health Services Division to determine compliance with earlier Division recommendations and conditions.

No subdivisions or lot line adjustments shall be approved unless each lot and remainder can be shown to have an area suitable for the installation of an individual on-site sewage disposal system and replacement area complying with the provisions of these standards. Exceptions to this subsection are 1) lots that will be served by public sewer or a community on-site sewage disposal system, or 2) subdivisions or lot line adjustments for which development rights have been relinquished and can demonstrate
adjustments for which development rights have been relinquished and can demonstrate good cause to have such testing exempted to the Environmental Health Services Division, or 3) lot line adjustments that do not create a more substandard condition for on-site sewage disposal for any lot than the previously existing lot boundaries, or 4) lot line adjustments that do not decrease any lot by more than 20% and do not impact the parcel’s primary and reserve leach field or the ability to disperse sewage as determined by this department.

Types of individual on-site sewage disposal systems that can be used for creation of new lots are:

1. Standard systems, or
2. Alternative systems as approved by the Environmental Health Services Division (refer to Article VIII, section 6.4-89(b)), or
3. Standard or alternative systems as indicated above in combination with a graywater system complying to the requirements of the latest adopted version of the Uniform Plumbing Code and any other standard regarding graywater adopted by Solano County. The size of the sewage disposal system or replacement area shall not be decreased or affected by the graywater system, or
4. Any system approved and under permit from the Regional Water Quality Control Board having authority.

Any proposed subdivision requiring the use of alternative systems on one or more lots shall have a declaration recorded with the final map that states site evaluation data submitted at time of recordation requires the use of an alternative systems are required. The declaration shall also describe the type of alternative system required for each specific lot and state that the such a system must be operated, monitored, and maintained in accordance with the standards set forth in this Chapter. The declaration shall also state on which lots site evaluation indicates an alternative system is necessary. The declaration may also state that a standard system may be provided if future site evaluation demonstrates a standard system can be installed in compliance with the standards set forth in this Chapter.

Section 4: Section 6.4-42 (b) of Chapter 6.4 is amended to read:

(b) For additions or remodels that increase the projected or actual wastewater flow, including bedroom additions, increases in seating capacity, or changes in business use or occupancy, the existing on-site sewage disposal system shall be evaluated and, (1) If currently approved permitted by the Environmental Health Services Division and (a) is in good condition and operating properly, it must be modified and enlarged to accommodate the projected increase. This includes, but is not limited to, providing a larger septic tank, pretreatment device, and/or enlarging or replacing the disposal field. Any modifications to the on-site sewage disposal system shall comply with these standards, including adequate replacement area, or except that a one time only expansion of the existing sewage disposal system to accommodate a one bedroom addition may be allowed under the following conditions:
(a) A site evaluation demonstrates a minimum of 5 feet separation exists between the bottom of the sewage disposal system and seasonal high groundwater and the
septic tank is sized or is upgraded to meet the size requirements of this code. The additional field required shall be based on the proportion of additional flow, or
(b) A site evaluation demonstrates 3 to 5 feet separation exists between the bottom of the sewage disposal system and seasonal high groundwater, the septic tank is sized or is upgraded to meet the size requirements of this code and, if gravity flow is being used, a pretreatment device is installed. The additional field required shall be based on the proportion of additional flow.
In all cases, a replacement area complying to current standards must be demonstrated, or
(b)(2) If currently permitted by the Environmental Health Services Division and is not in good condition or operating properly and cannot be corrected through minor repair of the system or replacement of tanks to be in conformance with provisions of 6.4-42(b)(1), then a new on-site sewage disposal system complying with these standards, including those for replacement area, must be provided; or
(b)(3) If not currently approved permitted by the Environmental Health Services Division and does not comply with these standards then an on-site sewage disposal system complying with these standards, including those for replacement area must be provided.

Section 5: Section 6.4-44 of Chapter 6.4 is amended to read:

Replacement structures on lots served by on-site sewage disposal systems.

(a) Replacement structures, including, but not limited to, single family residences and companion living units, may connect into an existing on-site sewage disposal system provided the following criteria can be met:
(1) The existing on-site sewage disposal system is approved by the Environmental Health Services Division and complies with the requirements of these standards, including those for replacement area; 
(2) The location of the replacement structure does not encroach upon the existing on-site sewage disposal system or replacement area; 
(3) The replacement structure does not have the potential to generate more sewage than the previous structure; and 
(4) The system was functioning properly before removal of the previous structure, and will continue to do so in all likelihood and will not pose a threat to public health or water quality.
(4) And either condition I or II below is met

Condition I: The existing on-site sewage disposal system is permitted by the Environmental Health Services Division and complies with the requirements of these standards, including those for replacement area.

Condition II The existing on-site sewage disposal system is permitted by the Environmental Health Services Division but does not comply with the requirements of these standards provided that a replacement area sufficient to completely replace the disposal field to current standards can be demonstrated.

(b) If the following criteria are met,
(4) The existing on-site sewage disposal system is approved by the Environmental Health Services Division but does not comply with the requirements of these standards, including those for replacement area;
(2) The location of the replacement structure does not encroach upon the existing on-site sewage disposal system or replacement area;
(3) The replacement structure does not have the potential to generate more sewage than the previous structure; and
(4) The system was functioning properly before removal of the previous structure, and will continue to do so in all likelihood;
then connection to the existing system shall be approved provided that the new structure has the same number of bedrooms as the previous structure being replaced, a replacement area sufficient to completely replace the disposal field to current standards can be demonstrated, and connection to the existing system will not pose a threat to public health or water quality.

(e- b) If the criteria of section 6.4-44(a) cannot be met, except as indicated in 6.4-44(b), then the structure shall be considered new construction and may not connect into the existing on-site sewage disposal system. A new on-site sewage disposal system and replacement area complying with all provisions of these standards shall be required.

(d- c) Where necessary, a site evaluation may be used to verify the on-site sewage disposal system design and replacement area required for replacement structures.

Section 6: Section 6.4-51 of Chapter 6.4 is amended to read:

Construction permit: general provisions.
The Environmental Health Services Division shall approve, conditionally approve, or deny the application, and issue or withhold the construction permit accordingly, on the basis of compliance with the Solano County Code and these standards and policies promulgated thereunder. Except as provided for in section 6.4-53:

(a) It is illegal to install, repair, replace, expand, modify, or destroy any part of an on-site sewage disposal system without first obtaining an approved construction permit from the Environmental Health Services Division.

(b) No contractor, property owner, or person shall violate or fail to comply with any construction permit condition imposed pursuant to these standards.

(c) Only on-site sewage disposal system work specifically authorized by the construction permit may be performed. A copy of the approved permit and plans shall be kept at the job site while the work is in progress.

Section 7: Section 6.4-53 D of Chapter 6.4 is added to read:

(d) A permit is not required to add or replace the following components to an on-site sewage disposal system provided the property owner or contractor notifies the department in writing that the modification was made:
(1) risers and or lids to a septic tank if the septic tank is not located in an area that is subject to vehicular traffic;
Nothing in this section shall provide an exemption from the material, structural and installation requirements of this Chapter.

Section 8: Section 6.4-55 C of Chapter 6.4 is amended to read:

(c) Notification: Installers are required to provide at least 24 hours notification to the Environmental Health Services Division prior to beginning construction of a sewage disposal system, and at least 24 hours advance notice prior to reaching specified construction steps. Notification must include applicant’s name, Assessor’s parcel number, street address, and permit number. Failure to provide sufficient notice may result in delay of construction or duplication of work.

Section 9: Section 6.4-56 of Chapter 6.4 is amended to read:

(a) Prior to final construction approval of an alternative system the property owner shall obtain an operation permit from the Environmental Health Services Division.

(b) An alternative system shall be operated, maintained, and monitored pursuant to the requirements of these standards and the operation permit. Under terms of the operation permit, Division personnel shall conduct annual review of the performance and condition of the system. This review may include on-site inspections, sampling, review of submitted maintenance and sampling reports, and other activity deemed necessary to assure the proper maintenance and operation of the system. The operation permit shall also require maintenance and performance monitoring to be performed by the property owner or property owner’s agent, a licensed contractor or registered consultant at a frequency of once per year or more often as determined by the Environmental Health Services Division. At least once every three years the maintenance and performance monitoring shall be performed by a registered consultant or licensed contractor with knowledge of on-site systems. At least one monitoring event shall occur during the wet weather testing period as defined in section 6.4-81.2(f) of these standards. All data collected must be submitted to the Environmental Health Services Division within thirty (30) days.

(c) The operation permit shall be renewed annually and any required fees shall be paid. The owner of the property shall keep the operation permit valid for the life of the system.

(d) The Environmental Health Services Division may suspend or revoke an operation permit for failure to comply with any operational, monitoring, or maintenance requirements. Upon revocation or suspension of an operation permit further operation of the alternative system shall cease until the suspension is lifted or a new permit is issued.

(e) Performance Reporting.

The property owner or his/her agent must submit an annual report to the Environmental Health Services Division for review with the following information as a condition of any operating permit:

(1) Twelve months actual flows into the sewage disposal system. If this cannot be obtained, then the best reasonable estimate shall be provided.

(2) Inspection findings of the dosing tank and pump system, including:
(a) Elapsed time meter readings;
(b) Dosing counter meter readings;
(c) Pump run cycle time;
(d) Proper operation of the alarm system; and
(e) Proper water tightness of all tanks.

(3) Inspection findings of the on-site sewage disposal system for:
(a) Breakout or surfacing of sewage effluent onto the ground;
(b) Testing and condition of adjusting and purge valves;
(c) Testing and condition of performance wells;
(d) Groundwater elevations and samples taken by the property owner or his/her contractor or consultant from performance wells. The property owner or his/her contractor or consultant shall have the samples analyzed for total coliform, fecal coliform, and other chemical constituents of concern as specified by the operation permit conditions.

Section 10: Section 6.4-60 of Chapter 6.4 is amended to read:

Appeal process.
Any person affected by a decision of the Environmental Health Services Division may appeal said decision to the Program Manager of the Environmental Health Services Division. Any person affected by a decision of the Program Manager of the Environmental Health Services Division may appeal said decision to the Director of the Department of Environmental Management Department. Any person affected by the decision of the Director of the Department of Environmental Management Department may appeal said decision to the Solano County Board of Supervisors.

Section 11: Section 6.4-62 of Chapter 6.4 is amended to read:

Notice of appeal hearing.
The appellant shall be given notice as to the time, date, and location of the hearing. When appeals are to the Board of Supervisors, the Clerk of the Board shall set the time and place of the hearing and give notice to the appellant and the Program Manager. Notice for other appeal hearings shall be given by the Environmental Health Services Division.

Section 12: Section 6.4-70 of Chapter 6.4 is amended to read:

Enforcement.
The Environmental Health Services Division Program Manager or his/her designees shall perform enforcement of these standards.

Section 13: Section 6.4-80 E of Chapter 6.4 is amended to read:

(e) The on-site sewage disposal system shall consist of a building sewer, a septic tank, an acceptable distribution and absorption system and any required dosing tank, treatment device or other appurtenances required for standard or alternative treatment and disposal of sewage. Exception: The Environmental Health Services Division may waive the requirement for an alternative sewage disposal systems utilizing an aerobic treatment unit to include a septic tank as a separate treatment process if so
recommended by the manufacturer of the aerobic treatment unit or registered consultant for the proper operation of the aerobic treatment unit.

Section 14: Section 6.4-81 A of Chapter 6.4 is amended to read:

(a) A site evaluation is required prior to construction of any on-site sewage disposal system or expansion, alteration, or replacement of an existing system in order to determine compliance with these standards. The site evaluation shall be completed prior to issuance of permits to construct, expand, alter, or replace an on-site sewage disposal system or approval of a lot line adjustment or tentative subdivision map. Site evaluations shall be completed under inspection from the Environmental Health Services Division. All aspects of a site evaluation prepared for on-site sewage disposal shall be performed by a registered consultant. A registered consultant is a Registered Civil Engineer, Registered Geologist, Certified Engineering Geologist, Registered Environmental Health Specialist, or Certified Professional Soil Scientist. NOTE: a site evaluation is not required for the placement of portable watertight facilities associated with a temporary work site or a special event.

Section 15: Section 6.4-81 F of Chapter 6.4 is amended to read:

(f) The Environmental Health Services Division may require any additional information necessary to evaluate the proposed system. If, in the opinion of the Environmental Health Services Division, the land proposed for individual sewage disposal has severe soil limitations, or introduction of sewage effluent into the soil may create slope instability, submission of a technical report prepared at the applicant's expense by a California licensed Certified Professional Soils Scientist, Certified Engineering Geologist, Registered Geologist; or Registered Civil Engineer, or similarly qualified soils expert shall be required.

Section 16: Section 6.4-81.2 of Chapter 6.4 is amended to read:

Soil evaluation – profiles, percolation tests, and groundwater determination.
(a) Soil evaluation shall occur within the boundaries of the proposed on-site sewage disposal system.

(b) Soil profile description: Soil characteristics shall be evaluated by profile observation within the boundaries of each proposed sewage disposal field. To properly evaluate soil permeability characteristics, excavation using a backhoe (or similar equipment) is required. At least one excavation in the primary disposal field, and one in the replacement field shall be required for this purpose. Soil profile excavations shall be made to a depth of at least eight (8') feet, or five (5') feet below the proposed disposal field trench, whichever is greater, or until a limiting condition is reached, and be at least two (2') feet wide. The profile description shall evaluate soil features as follow:

Soil texture, color, structure, consistency, plasticity, and porosity, for each soil horizon in the excavation utilizing the United States Department of Agriculture (USDA) soil classification system.

Depth and type of limiting condition, including but not limited to bedrock, hardpan,
impermeable soil layers, observed free water, saturated soils, or groundwater.

Depth of soil mottling, gleying or other evidence of periodic soil saturation.

Other prominent soil features including, but not limited to, percentage of rock or coarse fragments, root porosity, dampness, or depth and type of fill or imported soil in the profile.

Test holes dug by augur shall be an acceptable alternative upon written approval from the Environmental Health Services Division: (a) where use of a backhoe or other similar equipment is impractical because of access or because of the fragile nature of the soils, or (b) when necessary to verify conditions expected on the basis of prior soil investigations. When the auger method is used, at least three test holes in the primary disposal field and three in the reserve field are required.

(c) Soil Classification. The registered consultant shall field classify the soil using USDA soil classification system and be responsible for collecting and retaining samples from the most limiting soil layer within the proposed active leaching layers observed in the sidewall of the excavated profile.

Soils classified as sand and loamy sand shall be considered to have minimal treatment capacity unless it can be demonstrated by percolation testing after standard presoaking methods that the percolation test result is 5 mpi (12 inches per hour) or greater. Percolation rates from 1 mpi to 5 mpi shall require increased depth to groundwater as per Table 1.

Soils classified as sandy loam, sandy clay loam, and loam may be considered suitable for effluent disposal without additional percolation testing provided that the texture is confirmed using a hydrometer test. If an alternative system is necessary, percolation testing under fully saturated conditions may be required to determine design parameters. If multiple soil profiles are evaluated, then only one soil sample needs to be analyzed using a hydrometer test, provided the soil sample is taken from the most limiting soil layer observed from all soil profiles evaluated. All samples shall be appropriately labeled, and analyzed for soil texture and bulk density by the approved ASTM method or California Test Method. The tests shall demonstrate the presence of the minimum effective soil depth required beneath the trench or absorption bed. The test results shall be plotted on a soils textural triangle as shown in Figure 1.

Soils classified as sandy clay, clay loam, silt loam, silty clay, silty clay loam, silt, and clay shall be considered marginal to unacceptable and will require percolation testing to determine whether the soils are suitable. Soils classified as clay, silty clay, and Sandy Clay on the textural triangle depicted by Figure 1 shall be tested by using an extended, monitored presoak prior to conducting the percolation test as detailed in section 6.4-81.2(d)(5)(b) or a standard presoak (see section 6.4-81.2(d)(5)(a)) during the wet weather test period defined in section 6.4-81.2(f). Clay Loam and Silt Loam shall use the standard presoaking method.

If the classification of the soil is in question, then the Environmental Health Services Division shall require the consultant to provide hydrometer and bulk density test data to
verify the actual classification of the soil on the soils textural triangle in Figure 1 to determine if percolation testing is required.

(d) Percolation testing.

(1) When required by these standards to demonstrate adequate infiltrative capacity at a proposed on-site sewage disposal system location, percolation testing shall be performed or supervised by a registered consultant in compliance with Solano County's approved percolation test procedures. The applicant shall notify the Environmental Health Services Division at least 24 hours prior to constructing percolation test holes, presoaking the test holes, and conducting the test.

Percolation test holes shall be constructed during normal business hours unless prior arrangements have been made with the Environmental Health Services Division. The Environmental Health Services Division may require inspection of the percolation test hole construction process and/or presoak method, and percolation test. Failure to comply with these requirements may result in the need to reconstruct the test holes, and/or conduct a new presoak, and/or perform a new percolation test. All applicable fees shall be paid prior to construction of the percolation test holes.

(2) When deemed necessary by the Environmental Health Services Division, percolation tests may be required for any on-site sewage disposal permit application involving new construction, increases in the projected wastewater flow, relocation or expansion of an existing systems, and for land divisions or lot line adjustments, which do, or will, use on-site sewage disposal systems. The Environmental Health Services Division may require percolation tests prior to the issuance of permits to repair failing on-site sewage disposal systems, or prior to approving building additions on lots served by on-site sewage disposal systems.

(3) The design of the on-site sewage disposal system shall be based on the slowest percolation rate result measured from all percolation test holes in each area.

(4) Percolation Test Hole Construction

(a) Percolation test holes shall be placed uniformly into the undisturbed soil horizons in the proposed location of the initial and replacement on-site sewage disposal system's absorption field. At least four-three holes shall be placed in each proposed disposal field and in each reserve area location. Test holes shall be constructed to the depth of the bottom of the proposed leachfield. The holes shall be dug to the depth of the most restrictive soil layer within the proposed leaching layers below the disposal trench as determined by soil profile analysis. For Mounds and At-Grade Mounds, the depth of the leachfield for purposes of test hole depth, shall be considered 1 foot below grade. The registered consultant may construct one or more percolation holes at the midpoint elevation of the minimum effective soil depth for the purpose of application rate determination in conformance with Section 6.4-87.2. For tests deeper than one foot a backhoe may be used to dig a bench to within one foot of the bottom of the test hole, provided the backhoe pit is left open. The registered consultant running the test is responsible for any needed shoring in deeper tests.
(b) Percolation test holes shall be at least four (4") inches to twelve (12") inches in diameter. The bottom and sides of the percolation test holes shall be carefully scratched with a sharp instrument to remove any smeared soil surfaces and provide a natural soil interface into which water may percolate. All loose soil must be removed from the hole.

(c) Not more than two (2") inches of coarse sand or pea gravel must be placed in the bottom of the hole to protect from scouring and sediment that may impact the test.

(d) The hole shall be left open, or a minimum four (4") inch perforated pipe with approved drain rock between the pipe and wall of the hole shall be placed in the test holes. The backhoe pit, if used for deep percolation tests, shall remain open and unfilled.

(4) Presoaking the Test Holes
The intent of this section is to provide sufficient presoaking that will result in soil conditions that represent, as closely as possible, those conditions encountered during the wettest months of the year.

(a) Standard Procedure
Each percolation test hole shall be continuously presoaked as detailed in section 6.4.81.2(d)5(c) below for a minimum of twenty-four (24) six (6) hours prior to the start of the percolation test. The water must be continuously maintained at least twelve (12") inches above the sand or pea gravel at the bottom of the hole or until the soils are completely swollen, whichever is longer. The six hour presoak shall not begin more than 24 hours prior to the start of the test. The Registered Consultant shall consider the soil texture and type in selecting an appropriate presoak period. Underestimating the presoak time period will result in an extended rate measurement period. Many soils in Solano County will require a presoaking time period greater than six (6) hours. The Environmental Health Services Division may approve a shorter presoak period for soils with textures of sand, loamy sand or sandy loam.

(b) Extended, Monitored Presoak
Prior to the start of the percolation test, presoaking the test hole as detailed in section 6.4.81.2(d)5(c) below must continuously occur for at least two days (48 hours) or until the soils are completely swollen, whichever is longer. Water level shall be continually maintained at least 12" above the bottom of the hole until the beginning of the percolation test. The first day of the presoak period, the day before the percolation test, and the percolation test itself shall occur during normal county business hours. At the beginning of the percolation test the water level shall be reduced to six inches over the bottom of the hole and the percolation test procedure begun.

(c) Both standard and extended, monitored presoak procedure shall result in complete saturation wetting and swelling of the soil being tested. This may be accomplished by thoroughly saturating each hole until the soil is fully swollen (this may require many gallons of water), and either:
filling each test hole to the top, and adding water as needed to maintain the required level, or
(1) providing a series of water containers and siphons to automatically fill the holes as water is absorbed or evaporated to maintain the proper level.

The water level in the percolation hole shall be continuously maintained at least 12" above the sand or pea gravel at the bottom of the hole as required for the soil to achieve a swollen condition prior to the start of the percolation rate measurement. Only clean water without additives shall be used in the presoak and percolation tests.

(d) All fees required for inspection of the presoak and/or percolation test shall be paid to the Environmental Health Services Division prior to beginning the presoaking period.

(e) Failure to follow the presoak procedures may result in the requirement to begin the presoak procedure again, or lack of approval of the percolation test results.

(6.5) Percolation Rate Measurement

The intent of this section is to provide precise and accurate percolation rate measurements, of sufficient time, that represent to the greatest extent possible, the soil conditions encountered during the wettest months of the year.

(a) At the beginning of the percolation test, the depth of the percolation hole shall be recorded and the water shall be adjusted so that it is no more than six between 4 and 8 inches above the sand or pea gravel at the bottom of the hole.

(b) A fixed reference point over the hole, or on the side of the perforated pipe if used, must be established. All readings shall be taken from this fixed reference point to the top of the water in the hole. Floats with securely attached measuring devices may be utilized provided that the floats do not absorb water. The distance between the water and ground surface shall be recorded.

(c) Water level shall be measured to a minimum accuracy of one-eighth (1/8") inch every thirty (30) minutes for a minimum of four (4) hours refilling the water to no more than six (6") inches over the sand or pea gravel at the bottom of the hole as needed after each reading and until three (3) consecutive stabilized measurements are made that are within 1/4 th inches of the final measurement. If water cannot be maintained in the hole for the first two (2) thirty (30) minute readings, then the water level shall be adjusted to six (6") inches over the sand or pea gravel at the bottom of the hole, and readings shall be taken every ten (10) minutes for two (2) hours or until three (3) consecutive stabilized measurements are made, whichever is longer.

(d) For test holes with a permeability faster than 30 mpi after the required test period that do not have rates for the final three readings that are within 1/4" of the last reading, an average of the last three readings will be used as the percolation rate.

(e) Inadequate presoaking of the test holes may result in unstabilized percolation rates at the end of a percolation test. In no case shall the percolation test end until the minimum percolation rate period has been reached and a stabilized rate has been achieved, as defined in Section 6.4-81.2 (d)(6)(c), unless the consultant chooses to repeat the test. Percolation test data that does not achieve a stabilized rate shall not be utilized in the design of sewage disposal systems.
(7-6) Percolation Test Data

(a) All data obtained from any percolation test shall be included in the site evaluation report submitted to the Environmental Health Services Division on the standard form provided. All test results, both passing and failing, shall be submitted.

(b) The completed report shall be accompanied by a scaled plot plan identifying the exact location of the percolation holes, along with other pertinent details such as the location of soil profiles, wells, water courses, structures, slopes, cut banks, property lines, etc.

(c) All data submitted must be stamped and signed by the registered consultant supervising or performing the tests.

(e) Groundwater determination: The highest anticipated level of groundwater shall be estimated by the highest extent of soil mottling to natural grade observed in a soil profile, or by direct observation of stabilized groundwater levels.

Direct observations, if used or required, shall occur during wet weather conditions as defined below. Measurements shall occur every 2 weeks during the wet weather period. The Environmental Health Services Division may accept alternate wet weather groundwater plans from registered consultants provided the groundwater monitoring plan will capture seasonal high groundwater elevation in the proposed primary and reserve disposal fields. Direct observation of groundwater shall utilize performance wells or piezometers. At least one well shall be constructed in each initial and replacement area. Approval of the monitoring program shall be obtained from the Environmental Health Services Division. The location of the well(s) shall be accurately depicted on all site plans submitted to the Environmental Health Services Division for approval of the on-site sewage disposal system. Where a conflict exists between the depth of groundwater observed through direct observation during wet weather conditions and the depth at which soil mottles are observed, the direct observation of actual groundwater levels shall govern.

Some soils, such as sandy river soils, will not exhibit mottling. In cases where the soil lacks the necessary iron compounds to exhibit mottling, direct observation during wet weather conditions may be exclusively required.

(f) Wet weather testing period: The wet weather testing period for groundwater determination and, where required, for wet-weather percolation testing shall be determined annually by the Environmental Health Services Division on the basis of rainfall occurrence as measured by the following schedule:

Beginning: On the occurrence of fifty (50%) percent of the annual normal rainfall or after 8 inches of rainfall in any 30 day period, whichever occurs first.

Ending: On March 15, or later as determined by the Environmental Health Services Division in the event of unusually heavy springtime rainfall.
Extensions: The wet weather testing period may be started earlier or extended later than the above-noted beginning and ending points if it is determined by the Environmental Health Services Division, through a monitoring program, that shallow groundwater tables are fully charged.

(g) Soil test results completed pursuant to these standards shall be valid as long as the conditions on the lot remain essentially unaltered by grading, construction, drainage, structures, well, cuts, landslides, etc. Testing may be invalidated if subsequent site evaluations reveal site conditions that are more limiting than noted during original tests, or that were misrepresented or ignored during original testing.

(h) Nothing in this Chapter shall prohibit a registered consultant from conducting percolation testing in accordance with these standards prior to soil profile evaluation.

Section 17: Table 2 of Chapter 6.4 is amended to read:

Table 2. Minimum Setback Requirements.
(Distance in feet)

<table>
<thead>
<tr>
<th>Wells, abandoned wells, springs</th>
<th>Septic Tank, Interceptor, Dosing Tank, Holding Tank, Distribution Box</th>
<th>Disposal Field, Replacement Area</th>
<th>Solid Piping (ABS or Cast Iron)</th>
<th>Solid Piping (PVC or other)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wells, abandoned wells, springs</td>
<td>100 feet(1)</td>
<td>100 feet</td>
<td>25 feet</td>
<td>50 feet</td>
</tr>
<tr>
<td>Bays, streams, rivers, ditches, canals, culverts or 10 year flood plains (2)</td>
<td>100 feet(1)</td>
<td>100 feet</td>
<td>25 feet(3)</td>
<td>50 feet</td>
</tr>
<tr>
<td>Ephemeral streams, rivers, unlined ditches, unlined canals, or unlined culverts (2)</td>
<td>50 feet</td>
<td>50 feet</td>
<td>25 feet(3)</td>
<td>50 feet</td>
</tr>
<tr>
<td>Lined ditches, lined canals or watertight culverts or conduits</td>
<td>15 feet</td>
<td>15 feet</td>
<td>10 feet&lt;sup&gt;(3)&lt;/sup&gt;</td>
<td>10 feet</td>
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<td>---</td>
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</tr>
<tr>
<td>Lake or reservoir (2)</td>
<td>100 feet</td>
<td>2100 feet</td>
<td>25 feet</td>
<td>50 feet</td>
</tr>
<tr>
<td>Property line (public water supply and no on-site well)</td>
<td>10 feet</td>
<td>10 feet</td>
<td>10 feet</td>
<td>10 feet</td>
</tr>
<tr>
<td>Property line (neighboring lot on-site well or spring water supply)</td>
<td>25 feet</td>
<td>25 feet</td>
<td>10 feet</td>
<td>10 feet</td>
</tr>
<tr>
<td>Structures and foundations</td>
<td>5 feet</td>
<td>10 feet</td>
<td>0 feet</td>
<td>5 feet</td>
</tr>
<tr>
<td>Swimming Pool, lined pond or lined basin</td>
<td>15 feet</td>
<td>15 feet</td>
<td>5 feet</td>
<td>5 feet</td>
</tr>
<tr>
<td>Areas subject to vehicular traffic</td>
<td>5 feet</td>
<td>5 feet</td>
<td>0 feet if sand packed</td>
<td>5 feet</td>
</tr>
<tr>
<td>Cut or fill banks, cuts, or steep slopes(4)</td>
<td>4 x height (50 feet maximum)</td>
<td>4 x height (100 feet maximum)</td>
<td>0 feet</td>
<td>10 feet</td>
</tr>
<tr>
<td>Easements and rights of way (5)</td>
<td>5 feet</td>
<td>5 feet</td>
<td>5 feet</td>
<td>5 feet</td>
</tr>
</tbody>
</table>

Notes:
(1) May be reduced to fifty (50') feet if the tank passes a field test to verify it is water tight.
(2) As measured from the highest water level obtained.
(3) Variance may be granted for creek crossings if pipe is pressure tested and adequately protected.
(4) Distance in feet equals four times the vertical height of the cut bank, fill bank, or escarpment.
(5) Unless easement is specifically and solely designated for an on-site sewage disposal system. See Uniform Plumbing Code for parallel crossings.
Section 18: Section 6.4-83 C of Chapter 6.4 is amended to read:

(c) No portion of an intercept drain shall be located less than 45 10 feet up gradient, 25 15 feet laterally, or less than 50 feet down gradient from any septic tank or disposal field, replacement area, or less than 25-5 feet from any property line. Detailed plans prepared by a registered geologist, registered civil engineer or registered environmental health specialist must be submitted to and approved by the Environmental Health Services Division prior to installation of an intercept drain.

Section 19: Section 6.4-84.1 K of Chapter 6.4 is amended to read:

(k) Installation: Concrete tanks shall be installed level and on a solid bed of at least 90% compacted earth or rock. Soil around the tank shall be hard-compacted or jetted. The depth of tank placement and additional installation details shall be as specified in the approved on-site sewage disposal system permit. Each of the following components of an on-site sewage disposal system shall be located at least five (6') two (2') feet from each other and five (5') feet from a distribution box and/or an absorption field as measured horizontally:

(1) Grease interceptor  
(2) Septic tank  
(3) Dosing tank  
(4) Distribution box

Section 20: Section 6.4-84.2 A of Chapter 6.4 is amended to read:

(a) A licensed Civil Engineer, Certified Engineering Geologist or a Registered Environmental Health Specialist shall design all pump systems. Plans detailing the dosing tank, pump, and all component features, including a cross section of the tank complete with elevations of control switches, measured in inches, from the bottom of the chamber must be provided to the Environmental Health Services Division for review. Dosing tanks shall only receive clarified effluent that has been treated by a septic tank or pretreatment device.

Section 21: Section 6.4-84.2 B 1 of Chapter 6.4 is amended to read:

(1) Emergency storage volume to allow for a twenty-four (24) hour holding capacity above the point of high water alarm activation shall be 150 gallons or 1/3 of the design flow rate, whichever is greater and is measured from the invert of the inlet tee and the point of high water alarm activation.

Section 22: Section 6.4-85 of Chapter 6.4 is amended to read:

Destruction of tanks.

Every cesspool, septic tank, interceptor, dosing tank, holding tank, or pit privy which has been abandoned, or has been discontinued from further use, or to which no building drain or building sewer from a plumbing fixture is connected, shall be immediately destroyed by filling with compact earth, sand, gravel, concrete or other material
approved by the Environmental Health Services Division. Prior to filling, the top cover or arch over the cesspool, interceptor, septic tank, dosing tank, holding tank or pit privy shall be completely removed, the wastewater removed by an approved septage hauler, and at least five holes shall be broken into the bottom. Fill material shall not be placed above the top of the sidewalls, or above the level of any outlet pipe, until inspection and approval by the Environmental Health Services Division. After approval by the Environmental Health Services Division, the cesspool, septic tank, dosing tank, holding tank or pit privy shall be filled at least to grade level. An adequate fill cap shall be provided to account for future settling. Complete removal of the tank and backfill and compaction of the hole after its removal, is an acceptable alternative to destruction of the septic tank in place.

Where on-site sewage disposal systems are abandoned after connecting any premises to a sanitary sewer, all abandoned on-site sewage disposal systems shall be destroyed within 30 days of the time of connecting to the sanitary sewer.

Section 23: Section 6.4-86 G of Chapter 6.4 is amended to read:
(g) The fall between the structure and the septic tank or aerobic treatment unit if not preceded by a septic tank shall be at least one-quarter (¼") inch per foot. Between the septic tank and the distribution box the fall shall be at least one (1") inch in ten (10') feet.

Section 24: Section 6.4-87 A 2 of Chapter 6.4 is amended to read:
(a) (2) The typical standard leach field design shall be: six hundred (600') lineal feet of trench, not more than thirty-six (36") inches deep by thirty-six (36") inches wide; a three (3") inch minimum diameter perforated pipe shall run the entire length of each trench; twelve (12") to eighteen (18") inches of gravel under the pipe and two (2") inches of gravel over the pipe shall be installed. Chamber systems that provide equivalent treatment may be substituted for the gravel trenches. No reduction in length of the total lineal feet required will be allowed for the use of a chamber system. Gravel trenches and chamber systems shall have twelve to eighteen inches of cover soil. The top of the gravel layer or chamber may be installed as high as flush with grade.

Section 25: Section 6.4-87 B of Chapter 6.4 is amended to read:
(b) Non-Typical Standard Leach Field Design and Alternative Systems

For systems that do not meet the requirements for a typical standard leach field design, or if the owner decides to pursue a non-typical standard design or alternative system design on a site where a typical standard design would normally be allowed, then a Registered Civil Engineer, Certified Engineering Geologist or Registered Environmental Health Specialist shall prepare and design an on-site sewage disposal system complying to these standards for the proposed building. Any design shall incorporate the following criteria:

Section 26: Section 6.4-87 B1 of Chapter 6.4 is amended to read:
(1) The total length of leach line required shall be calculated using the infiltrative area as specified in this section. For calculation purposes the infiltrative area per lineal
foot shall not exceed 3 square feet per lineal foot unless the effective soil below the
leachfield consists of loam, sandy loam or sandy clay loam in which case the maximum
infiltrative surface area shall not exceed 5 square feet per lineal foot. The sum of the
side walls below the perforated pipe within the leach line or, the bottom width of the
leach line trench or, thirty six (36") inches, whichever is less. For systems utilizing more
than 3 square feet per lineal foot, only side wall shall be used in the calculation of
infiltrative surface area. The infiltrative area used to calculate the size of absorption
beds or trenches for alternative systems shall not exceed the specifications established
by these standards for the specific type of disposal system proposed.

Section 27: Section 6.4-87 B 2 C of Chapter 6.4 is amended to read:

(c) Hydrometer test and percolation rates

Absorption system design shall be based on the most restrictive hydrometer or
percolation test result in the area proposed for installation. If percolation tests are
required, then typical and non-typical standard disposal fields may be used only if
percolation test results are between 6 mpi and 60 mpi, inclusive. Typical and non-
typical standard systems may be used in soils with percolation test results from 1 mpi to
5 mpi, inclusive, if groundwater is more than 20 feet below the bottom of the trench.
Alternative systems shall be used if percolation test results are 61 mpi to 120 mpi, and
may be required if the percolation test result is from 1 mpi to 5 mpi. On sites having
sandy soils with percolation test results from 1 mpi to 5 mpi and groundwater closer
than 20 feet below the bottom of the disposal field, or that have slowly permeable soils
with percolation test results from 90 mpi to 120 mpi, pretreatment before discharge into
the disposal field may be required.

Section 28: Section 6.4-87 B 3 of Chapter 6.4 is amended to read:

(3) A non-typical standard leach field design may include a dosing tank to provide lift
to a gravity disposal field.

Section 29: Section 6.4-87 B 4 of Chapter 6.4 is added to read:

(4) Nothing in this chapter shall prohibit a Registered Environmental Health
Specialist, Registered Civil Engineer or Certified Engineering Geologist from designing
an alternative sewage disposal system in an area that meets all the requirements of this
chapter for a standard or non-typical standard system. An alternative sewage disposal
system installed in an area that meets the minimum requirements for an standard or
non-typical standard system does not require an annual operation permit.

Section 30: Section 6.4-87.1 of Chapter 6.4 is added to read:

Sec. 6.4-87.1 Disposal field: minimum effective soil depth by system type.
Disposal fields shall be placed above the minimum effective soil depth as described in
the following table:

<table>
<thead>
<tr>
<th>System Type</th>
<th>Minimum Effective Soil Depth (ft)</th>
</tr>
</thead>
</table>

21 17 of 23
### Typical and Non-Typical Standard

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressurized Disposal Field without pre-treatment</td>
<td>5</td>
</tr>
<tr>
<td>Pressurized Disposal Field with pre-treatment</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Section 31: Section 6.4-87.2 of Chapter 6.4 is added to read:

**Sec. 6.4-87.2 Disposal field infiltration area requirements: sewage application rates.**

The leachfield design shall be based on the average of the soil application rates at the elevation of the trench and the midpoint elevation of the effective soil depth below the leachfield. For above grade systems, the elevation of the trench for testing purposes shall be considered 1 foot below grade.

(a) The application rate at the base of the trench shall be determined by conducting a percolation test or hydrometer test as described in Section 6.4-81.2.

(b) The application rate at the midpoint elevation of the effective soil depth below the leachfield shall be determined by percolation testing, hydrometer analysis or texture by feel and structure at the registered consultant’s discretion and in conformance with Table 5 or Table 6 in Section 6.4-88.

#### Section 32: Section 6.4-88 A of Chapter 6.4 is amended to read:

(a) The disposal field shall consist of one or more leach lines consisting of drain rock, perforated pipe, and untreated building paper or filter fabric, or chamber system components that provide equivalent treatment, and appurtenant components. Unless otherwise approved by the Environmental Health Services Division, the disposal field shall be preceded by a septic tank and if required, a dosing tank. Pretreatment devices may also be required. Alternative material or methods of disposal field construction may be approved by the Environmental Health Services Division for use in alternative or experimental systems.

#### Section 33: Section 6.4-89 B 2 of Chapter 6.4 is amended to read:

(b) (2) At-Grade systems.

These above ground systems allow wastewater disposal on sites with shallow or slowly permeable soil over impermeable soil, fractured rock or bedrock, high groundwater, or other limiting condition within three (3') feet of the ground surface and on slopes up to twenty-five (25%) percent. Pretreatment of effluent may be required prior to disposal. If pretreatment is used, twenty-four (24") inches of native soil is required above a limiting condition. The design shall comply with these standards. See section 6.4-89.1(b) for specific details on At-Grade system design.

#### Section 34: Section 6.4-89 F of Chapter 6.4 is amended to read:
(f) Designs for alternative on-site sewage disposal systems must be prepared by a California Registered Civil Engineer, Certified Engineering Geologist or a California Registered Environmental Health Specialist. Designs for alternative systems shall include such technical data as necessary to support and demonstrate that the system will function as designed, will not adversely affect surface or groundwater quality, and will not create a potential health hazard. Designs proposed for any use other than repair of a failing or failed system must have demonstrated satisfactory performance in soil conditions similar to those encountered in the proposed application.

Section 35: Section 6.4-89 J of Chapter 6.4 is amended to read:

(j) The All persons required to hold an operation permit shall provide to the Environmental Health Services Division shall evaluate an evaluation of each alternative septic system under their control at least once every calendar year. The evaluation may consist of shall include an on-site inspection, or review of results of sampling, and monitoring, and maintenance records submitted by the property owner or his/her contractor or consultant responsible for the system, or both. The Environmental Health Services Division may also perform evaluation inspections to determine the performance or operation of alternative systems.

Section 36: Section 6.4-89.1 A 1 of Chapter 6.4 is amended to read:

(a)(1) Unless otherwise approved by the Environmental Health Services Division, the components of a Pressure Distribution system are a septic tank, dosing tank, pump with associated controls, and small diameter piping with small diameter perforations laid in gravel or inside chamber components. The system distributes septic tank effluent uniformly throughout the disposal field under pressure through intermittent, small volume, doses. A timer may also be used to discharge the effluent to the disposal field evenly throughout the day instead of in surges.

Section 37: Section 6.4-89.1 A 4 A of Chapter 6.4 is amended to read:

(a) The depth of the trench shall be between 12" and not exceed 36" and must be a minimum of

(1) Eighteen (18") inches on slopes up to 20% (shallow in ground systems only).
(2) Thirty (30") inches on slopes from 21% to 25%.

Section 38: Section 6.4-89.1 A 4 C 5 C of Chapter 6.4 is amended to read:

(c) Balancing valves shall be schedule 80 40, or higher, gate or ball valves.

Section 39: Section 6.4-89.1 A 4 C 5 D of Chapter 6.4 is amended to read:

(d) Purge valves shall be schedule 80 40, or higher, gate or ball valves. They must have, or be capable of having placed, a removable fitting that will allow a squirt test to be conducted.
Section 40: Section 6.4-89.1 B 1 E of Chapter 6.4 is amended to read:

(e) The slope in the area of the At-Grade system shall not exceed the following:

1. Twenty-five (25% percent for percolation rates ranging from 1 to 60 mpi.
2. Six (6%) percent for percolation rates from 61 to 89 mpi.
3. Twenty (20%) percent for percolation rates ranging from 61 to 120 mpi if approved pretreatment device is used before distribution into the At-Grade system.

Section 41: Section 6.4-89.1 B 2 A of Chapter 6.4 is amended to read:

(a) Unless otherwise approved by the Environmental Health Services Division, At-Grade systems shall consist of at least a septic tank discharging to a dosing tank, which then pumps the sewage effluent under pressure through one or more pressure distribution laterals installed within a gravel bed placed upon the ground surface. The gravel bed is then covered with filter fabric and soil.

Section 42: Section 6.4-89.1 C 2 A of Chapter 6.4 is amended to read:

(a) Unless otherwise approved by the Environmental Health Services Division, A mound system shall consist of at least a septic tank discharging to a dosing tank, which then pumps the sewage effluent under pressure through one or more pressure distribution laterals installed within the gravel of a distribution bed placed upon the ground surface. Exception: The Environmental Health Services Division may waive the requirement for a mound system utilizing an aerobic treatment unit to include a septic tank as a separate treatment process if so recommended or required by the manufacturer of the aerobic treatment unit or registered consultant. The mound shall be covered with soil.

Section 43: Section 6.4-89.1 C 2 C 5 D of Chapter 6.4 is amended to read:

(a) Sand shall comply with the specifications in figure 4, or other recognized standard that will provide similar treatment as approved by the Environmental Health Services Division.

Section 44: Section 6.4-89.1 C 2 A of Chapter 6.4 is amended to read:

(a) Unless otherwise approved by the Environmental Health Services Division, a mound system shall consist of at least a septic tank discharging to a dosing tank, which then pumps the sewage effluent under pressure through one or more pressure distribution laterals installed within the gravel of a distribution bed placed upon the ground surface. The mound shall be covered with soil.

Section 45: Section 6.4-89.1 C 2 C 5 D of Chapter 6.4 is amended to read:

(d) Sand shall comply with the specifications in figure 4, or as otherwise approved by the Environmental Health Services Division.
Section 46: Section 6.4-89.1 C 3 of Chapter 6.4 is amended to read:

(3) Sizing the mound system (refer to Figures 5 and 6).
   (a) Effective absorption area of gravel required shall equal the projected sewage flow from the building divided by the infiltration rate of the gravel.
   (b) Taking the linear loading rate and dividing it by the infiltration rate of the gravel shall determine effective width of the gravel bed.
   (c) Taking the effective absorption area of gravel required and dividing it by the width of the gravel bed shall determine the effective length of the gravel bed.
   (d) Uphill fill depth of sand shall be one (1') foot.
   (e) Downhill fill depth of sand shall be the uphill fill depth added to the gravel bed width multiplied by the slope, i.e.: uphill fill + (%slope)(gravel bed width).
   (f) Vertical depth of gravel bed is as indicated in section 6.4-89.1(c)(2)(c)4(c).
   (g) Down slope width is the sum of the downhill fill depth plus the vertical depth of the gravel plus one, multiplied by three, multiplied by the down slope correction factor of Table 8, i.e.: {(e)+(f)+1}(3) (down slope correction factor).
   (h) Upslope width is the sum of uphill fill depth plus the vertical depth of the gravel plus one, multiplied by three, multiplied by the up slope correction factor, i.e.: {(d)+(f)+1}(3) (up slope correction factor).
   (i) The width of the gravel bed plus the 2'-sand-perimeter on each side will be used in some calculations.
   (j) End width is the sum of the average of uphill and downhill sand fill depth plus the vertical depth of the gravel plus the width of the gravel bed and sand perimeter one multiplied by three, i.e.: [{(d)+(e)/2 +(f) + (i 1)}(3).
   (k) Required sand basal area is the projected daily flow from the building divided by the infiltration capacity of the soil.
   (l) Available sand basal area is greater than the required sand basal area. Available sand basal area is
   (1) On flat ground: the length of the gravel bed multiplied by the total width of the sand bed.
   (2) On sloped ground: the length of the gravel bed multiplied by the sum of the width of the gravel plus the down slope width, i.e. (c)((b)+(g)).

If sufficient area is not available, then the down slope width or gravel bed length shall be increased.

Section 47: Section 6.4-89.1 D 6 C of Chapter 6.4 is amended to read:

(c) Depth of sand shall be a minimum of twenty-four (24") inches. Unless approved otherwise by the Environmental Health Services Division, sand specifications in intermittent sand filters shall comply with the following:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td># 3/8</td>
<td>100</td>
</tr>
<tr>
<td># 4</td>
<td>95-100</td>
</tr>
<tr>
<td># 8</td>
<td>80-100</td>
</tr>
<tr>
<td># 16</td>
<td>45-85</td>
</tr>
<tr>
<td># 30</td>
<td>15-60</td>
</tr>
<tr>
<td># 50</td>
<td>3-10</td>
</tr>
<tr>
<td># 100</td>
<td>0-2</td>
</tr>
</tbody>
</table>
Effective size and uniformity:
\[ D_{10} > 0.3 - 0.5 \text{ mm} \]
\[ C_u = 1 - 4 \]

Sand specifications for a recirculating sand filter shall comply to the following:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8</td>
<td>100</td>
</tr>
<tr>
<td>#4</td>
<td>70-100</td>
</tr>
<tr>
<td>#8</td>
<td>5-78</td>
</tr>
<tr>
<td>#16</td>
<td>0-4</td>
</tr>
<tr>
<td>#30</td>
<td>0-2</td>
</tr>
<tr>
<td>#50</td>
<td>0-1</td>
</tr>
<tr>
<td>#100</td>
<td>0-1</td>
</tr>
<tr>
<td>#200</td>
<td>0-1</td>
</tr>
</tbody>
</table>

Effective size and uniformity:
\[ D_{10} = 1.5 - 2.5 \text{ mm} \]
\[ C_u = 1 - 3 \]

The sand shall be analyzed by wet-sieve analysis using ASTM method C-117 or equivalent. Prior to placement of the sand, the Environmental Health Services Division must be provided with a copy of the sieve analysis, certified as to conformance with the standards by the consultant.

Section 48: Section 6.4-90 B 2 of Chapter 6.4 is amended to read:

(2) Alternative System - A sewage disposal system that uses an advanced method of effluent treatment and/or distribution and is designed by a Civil Engineer, Certified Engineering Geologist or -or- Environmental Health Specialist -registered in the State of California. An alternative system is designed to mitigate soil and/or groundwater conditions which render a lot inappropriate for a standard septic system, or to mitigate severely inadequate replacement area for repair or replacement of an existing, improperly functioning on-site sewage disposal system. An alternative system does not include a standard system that only uses a pump to deliver effluent to a non-pressurized disposal field complying with all surface and subsurface set back requirements.

Section 49: Section 6.4-90 B 62 of Chapter 6.4 is amended to read:

(62) Registered Consultant - is a Registered Civil Engineer, Registered Geologist, Certified Engineering Geologist, Registered Environmental Health Specialist, or Certified Professional Soil Scientist. All Registrations must be by the state of California.

Section 50.

This ordinance shall take effect thirty (30) days after its adoption.

Section 51.
A summary of this ordinance will be published within fifteen (15) days after its adoption in the Fairfield Daily Republic, a newspaper of general circulation in Solano County.

PASSED AND ADOPTED by the Solano County Board of Supervisors at its regular meeting on this December 7, 2004 by the following vote:

AYES: SUPERVISORS: Forney, Kondylis, Kromm, Vasquez, and Chairman Silva

NOES: SUPERVISORS: None

EXCUSED: SUPERVISORS: None

ATTEST:
Michael D. Johnson, Clerk
Board of Supervisors

By: Deputy
Additions indicated by *italics*; deletions by strikeouts

Introduced: November 2, 2004
Adopted: December 7, 2004
Effective date: January 7, 2005
## EXHIBIT B

Table Comparing Selected Proposed Amendments to Current Standards

<table>
<thead>
<tr>
<th>Type of Change</th>
<th>Existing Standard</th>
<th>Proposed Revisions to Standards</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPLICABILITY BASED ON DISCHARGE FLOW</strong></td>
<td>Local authority for permitting applies to systems discharging up to 2500 gallons per day and systems discharging between 2500 and 5000 gallons per day requires regional water board permitting.</td>
<td>Revises the local authority for permitting systems discharging up to 2500 gallons per day and systems discharging over 2500 gallons per day with water board authorization/concurrence.</td>
<td>Under current standards applications for flows of 5000 gallons per day require RWQCB Waste Discharge Permit. Revised standard removes upper limit and allows county to be lead agency and issue permits with Water Board authorization.</td>
</tr>
<tr>
<td><strong>UPGRADE WHEN THERE IS A BEDROOM ADDITION</strong></td>
<td>Requires that sewage disposal systems meet current standards for any increase in design flow rates, including bedroom additions. This requires a complete upgrade of the entire system for single bedroom additions.</td>
<td>Allows a one time proportional expansion of an existing septic system to serve single bedroom additions if the system is in good condition, the site meets groundwater separation requirements and a replacement area to current code can be demonstrated</td>
<td>This will allow a one time expansion of the system to accommodate a one bedroom addition if the septic system is functioning properly and is located on a site without environmental constraints. This will decrease the number of illegal additions and financial burden on the applicant while protecting the environment.</td>
</tr>
<tr>
<td><strong>NUMBER OF PERCOLATION TEST HOLES</strong></td>
<td>Requires 4 percolation test holes in both the primary and replacement field.</td>
<td>Requires 3 percolation test holes in both the primary and replacement field.</td>
<td>A decrease in the number of percolation test holes will not have any impact on the ability to fully characterize the site conditions and is consistent with other counties.</td>
</tr>
<tr>
<td><strong>DESIGN AND SIZING OF THE DISPOSAL FIELD</strong></td>
<td>Requires that percolation testing be performed in the most limiting layer and the worst result be used for sizing the disposal field.</td>
<td>Allows three percolation test holes to be placed at the proposed bottom of the trench and for the results to be averaged. Final size of the system is based on percolation test result at bottom of trench and the actual or estimated permeability at a point below the bottom of the trench.</td>
<td>This provides a better characterization of the actual permeability at the sight by allowing consultants to take into consideration the permeability at trench bottom and below the trench.</td>
</tr>
<tr>
<td>Type of Change</td>
<td>Existing Standard</td>
<td>Proposed Revisions to Standards</td>
<td>Discussion</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MANDATORY MAINTENANCE</td>
<td>Allows the property owner, consultant, contractor or the property owner's agent to conduct the required annual performance monitoring and maintenance of alternative sewage disposal systems.</td>
<td>Requires a consultant, contractor or the property owner's agent to conduct the required performance monitoring and maintenance of an alternative sewage disposal system at least once every three years. Nothing in the proposed revisions prohibits the property owner from duplicating or providing more frequent or additional monitoring or maintenance than that required in the revisions.</td>
<td>Alternative systems require routine maintenance in order for them to operate as designed and to protect the environment. Additionally, in the SWRCB statewide standards, mandatory maintenance is being proposed. The requirement to have the alternative system serviced by a qualified professional once every three years assures that the system will be maintained.</td>
</tr>
<tr>
<td>MAINTENANCE REQUIREMENTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROUNDWATER MONITORING</td>
<td>Requires wet weather monitoring of groundwater, however they do not describe monitoring intervals.</td>
<td>Where necessary, groundwater monitoring take place every two weeks during the wet weather period.</td>
<td>Provides specific monitoring frequency to eliminate some confusion with the public. The proposed amendment also allows the flexibility of the Department to accept alternate groundwater monitoring programs submitted by the consultant provided that it will represent seasonal high groundwater.</td>
</tr>
<tr>
<td>REQUIREMENTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SETBACKS</td>
<td>Requires a minimum setback distance between a disposal field or septic tank and an ephemeral drainage of 50 feet.</td>
<td>Reduce this setback to 15 feet if the drainage can be lined with concrete or an impermeable membrane. Reduce the setback to lined ponds and septic tanks or leachfields that is consistent with the current setback requirement between a swimming pool and leach field or septic tank.</td>
<td>Current requirement has resulted in considerable difficulty for small sites that must provide storm water detention to maintain post development off-site flow rates at or below pre development flows. Lining the drainage will prevent subsurface migration of wastewater into the surface drainage.</td>
</tr>
<tr>
<td>Type of Change</td>
<td>Existing Standard</td>
<td>Proposed Revisions to Standards</td>
<td>Discussion</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EMERGENCY STORAGE VOLUME</td>
<td>All engineered sewage disposal systems that utilize dosing tanks be provided with adequate emergency storage volume to accommodate flows that will continue after a pump failure. This volume is currently set at 100% of the daily design flow.</td>
<td>A minimum emergency storage volume be 1/3 of design flow or 150 gallons, whichever is greater.</td>
<td>Water saving measures can be implemented by the owner of the system, the relative reliability and availability of pumps and additional cost associated with upgrading dosing tanks to accommodate this storage volume make a 100% storage volume excessive.</td>
</tr>
<tr>
<td>PRESOAKING PERIOD</td>
<td>Percolation testing must be accompanied by either a 24 or 48 hour presoaking period depending on soil type.</td>
<td>Reduces the mandatory presoaking requirement for percolation testing to a minimum of 6 hours. Consultants given discretion in determining the appropriate presoaking interval based on estimated time to achieve a stabilized percolation test.</td>
<td>The change allows for full site characterization without placing a burden of the consulting industry and/or the applicant without jeopardizing public health or the environment.</td>
</tr>
<tr>
<td>DEPTH OF STANDARD SYSTEMS</td>
<td>Requires a typical standard (gravity) system to be 12&quot; to 18&quot; below natural grade.</td>
<td>Allows typical standard (gravity) systems to be constructed closer to ground surface and for cover to be placed on top.</td>
<td>Will allow standard systems to be utilized in more areas by allowing them to be placed closer to grade and by using import ground cover.</td>
</tr>
<tr>
<td>LOT LINES</td>
<td>Requires full site evaluation on all lot line adjustments unless the adjustment does not impact the septic system and there is no net loss of property.</td>
<td>Provides an additional exemption from standards at time of Lot Line adjustment for parcels that don't decrease any lot by more than 20% and do not impact the lot's ability to dispose of sewage.</td>
<td>Many lots are adjusted in a manner that will not impact the septic system or land required for use by the system. This criteria provides a method to eliminate site evaluation where it maybe unnecessary.</td>
</tr>
<tr>
<td>Type of Change</td>
<td>Existing Standard</td>
<td>Proposed Revisions to Standards</td>
<td>Discussion</td>
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<tr>
<td>REPAIR PERMITS</td>
<td>Any modification or repair of sewage disposal system requires a permit.</td>
<td>Allows repair or replacement of septic tank risers and lids, effluent filters, sanitary tees and distribution boxes without a permit if department is notified in writing of addition or repair.</td>
<td>Will lessen the burden on the system operator and staff while still requiring compliance with standards and notification to the department for minor, routine repairs to the system.</td>
</tr>
<tr>
<td>REQUIREMENT FOR SEPTIC TANK ON ALL ALTERNATIVE SYSTEMS</td>
<td>All alternative sewage disposal systems must utilize a septic tank.</td>
<td>Allows the department to exempt the use of a septic tank on systems that utilize an appropriate pretreatment device.</td>
<td>The septic tank serves to slow the flow of liquid effluent, thereby causing solids and grease to separate from the liquid portion of the effluent. Some aerobic treatment devices currently are designed with an internal tank that serves a similar purpose, therefore making a separate septic tank redundant. Additionally, placement of a septic tank before some of these devices has been shown to reduce their effectiveness.</td>
</tr>
</tbody>
</table>