

# **CHAPTER 5**

## **SEWAGE DISPOSAL STANDARDS**

## CHAPTER 5 - SEWAGE DISPOSAL STANDARDS

In addition to the provisions of the Tehama County Ordinance Code regulating sewage disposal, the following regulations and standards apply to all individual sewage disposal, sewage disposal systems, and sewage disposal operations over which the Tehama County Director of Environmental Health has jurisdiction. References below to the Director of Environmental Health include his designees.

### A. DEVELOPMENT NOT SERVED BY COMMUNITY SEWERAGE

#### 1. Disposal Area

- a. Each parcel shall contain two disposal areas, each consisting of minimum 1/4 acre of usable disposal material in locations which could reasonably be utilized by a structure built at a desirable and feasible site.
- b. Disposal area shall not include:
  - 1) Land subject to flooding. In case of disputes concerning flooding potential, the flooded area shall be determined by calculating the expected 25-year frequency flood.
  - 2) Land closer than 150 feet to a lake, or reservoir, measured from the perennial high water line or 100 feet if down slope from the lake or reservoir.
  - 3) Land closer than 200 feet to any spring, or 100 feet if downhill from the spring.
  - 4) Land within 100 feet of any existing or proposed well site for the parcel or any adjoining parcels.
  - 5) Land closer than fifty (50) feet to an intermittent or seasonal stream, measured from the top of the bank or other physically evident high water line. An intermittent stream is one which may continue to flow for five (5) or more days after the passage of a storm.
  - 6) Land closer than 25 feet to an ephemeral stream, measured from the edge of the channel. An ephemeral stream is one which flows for less than five (5) days after the passage of a storm. It contains no water from a spring, snow, or other long-continuing surface source and does not discharge to a perennial aquifer.
  - 7) Land closer than fifty (50) feet downhill from an unlined irrigation ditch or canal.

- 8) Land closer than fifty (50) feet uphill from an existing or proposed cut.
  - 9) Land with a grade steeper than thirty (30) percent.
  - 10) Filled land, unless the fill is engineered for sewage disposal and approved by the Tehama County Director of Environmental Health.
  - 11) Dredger tailings.
  - 12) Gravel bars of very pervious materials adjoining a stream or body of water.
  - 13) Land used for road or utility easements. Overhead utility easements may be included if the utility, entity or agency holding the easement gives a permanent and unconditional release, easement or license for sewage disposal within the easement.
- c. See Table 1 for setback distances for sewage disposal systems.

## 2. Disposal Material Characteristics

Usable disposal material has both of the following characteristics:

- a. Percolation rates greater than five (5) and less than sixty (60) minutes per inch when tests are conducted by the method specified in the Manual of Septic Tank Practice, U.S. Department of Health and Human Services.
- b. Percolation rates between 60 m.p.i. and no greater than 120 m.p.i. maybe approved only if specially designed by a registered civil engineer, geologist or registered environmental health specialist.
- c. Depth to a seasonal high water table shall have at least five (5) feet of separation between trench bottom for lots of less than ten (10) acres and at least three (3) feet for lots greater than ten (10) acres.

## 3. Percolation Test, Test Pits and Groundwater Monitoring

- a. Percolation Tests.

Three (3) percolation tests representative of the disposal area shall be conducted on each proposed disposal area by the method in the Manual of Septic Tank Practice.

b. Test Pits.

At least one test pit shall be excavated on each lot. It shall be at least two (2) feet wide and eight (8) feet deep. It shall slope towards one end at a rate no greater than 3:1. The soil profile shall be logged by a person qualified to perform percolation tests and witnessed by Tehama County Environmental Health Department.

c. Groundwater Monitoring.

- 1) The height of the seasonal high groundwater shall be determined by wet weather testing when any of the following is present:
  - a) Vegetation tolerant of, or indicative of, a high water table present on or in the vicinity of the parcel.
  - b) High groundwater has previously been found in the vicinity.
  - c) The test pits show cracked or creviced formations but no clear delineation of the top of the water table.
  - d) Other conditions or historical data that preclude accurate determination of the groundwater levels by dry weather observations.
  - e) Free water from seepage is observed in the test pit.
- 2) The height of seasonal high groundwater shall be determined by actual measurements of observation wells during periods of maximum soil moisture content, after eighty (80) percent of normal precipitation has occurred to meet or exceed field capacity of the soil, and produce a response in observation wells acceptable to the Tehama County Director of Environmental Health.

a) Direct Observation:

The design for constructing an observation well is shown on STD Plan 0963, and Tehama County Bulletin #1.

Measurements shall be taken at the times and intervals specified by the Tehama County Director of Environmental Health in response to local conditions. Except as the Tehama County Director of Environmental Health may otherwise direct, measurements (excluding land within the Anderson Cottonwood Irrigation District (A.C.I.D.)) shall be taken at approximately monthly intervals from January 1 to April 30. Land requiring groundwater

monitoring caused by A.C.I.D. irrigation water and within the A.C.I.D. shall have monthly measurements beginning May 1 and ending August 31.

- d. All of the above testing shall be done by, or under the supervision of a qualified registered civil engineer, registered geologist, registered environmental health specialist, certified engineering geologist, or soil scientist certified by the American Registry of Certified Professionals in Agronomy, Crops and Soils, or by a qualified testing laboratory approved by the Office of the State Architect.
- e. The results of all percolation tests and groundwater monitoring shall be reported and the logs of all excavations shall be submitted to the Tehama County Director of Environmental Health and shall be accompanied by a plot plan to scale showing the test, well and pit locations. The map shall include the topography in the 1/4 acre disposal area at five (5) foot contour intervals. The Tehama County Director of Environmental Health may disregard any test or log that, in his opinion, does not represent the soil conditions of the parcel.
- f. Lots Created for Uses which will not Generate Liquid Wastes.
  - 1) This parcel was created utilizing agricultural exemption. No soils study was conducted for the creation of this parcel. Each of these parcels shall be identified on the recorded map with this statement: "This parcel is not approved for any use that will generate liquid wastes". No permit to dispose of sewage or other liquid waste generated by the use of this property will be issued until applicable provisions of state and local law and the Tehama County Sewage Disposal Standards have been compiled with.

**OR**

- 2) This parcel was created utilizing agricultural exemption. No soils study was conducted for the creation of this parcel. Each of these parcels shall be identified on the recorded map with this statement: "Knowledge of soil conditions in this region/area indicates characteristics that may not be compatible with the Tehama County On-Site Sewage Disposal Code. This parcel is not approved for any use that will generate liquid wastes". No permit to dispose of sewage or other liquid waste generated by the use of this property will be issued until applicable provisions of state and local law and the Tehama County Sewage Disposal Standards have been compiled with.

#### 4. Subdivisions

Whenever any subdivision of property results in the creation of any parcel or parcels less than one acre in size, the subdivider shall be required to construct a community sanitary sewer system to serve all of the parcels within the subdivision and to form a public entity (which may be a mutual water company) to operate and maintain the system, unless the approving authority grants a specific waiver of this requirement after consultation with the Regional Water Quality Control Board.

Seepage pits are not considered an appropriate sewage disposal method for newly created lots.

#### 5. Maps

- a. Tentative.
- b. All tentative maps shall show for each parcel the location, boundaries and calculated acreage of the disposal area(s) as determined by the procedures of A3. The test results shall be submitted concurrently with the tentative land division application. If individual wells are proposed, the map shall show all existing and proposed well sites. The map shall be to scale and show topography in the 1/2 acre disposal area at five (5) feet contour intervals and location of the test pits, percolation tests, and piezometers.
- c. Final and Parcel Maps.
- d. For each parcel, the area(s) qualifying as disposal area shall be clearly delineated and labeled on the final or parcel map. If recordation of a parcel map is waived and developable parcels are proposed, a plot plan showing equivalent information shall be attached as an exhibit to, and recorded with, the notice of approval of waiver of parcel map. The face of each map or plot plan shall be annotated: "An onsite sewage disposal system shall be located only within the disposal area indicated for each parcel unless an alternative site is specifically approved by the Tehama County Director of Environmental Health." If individual wells are proposed, the map shall show all existing and proposed well sites.
- e. All developments under this section shall comply with these standards unless exceptions are granted in accordance with Chapter 16.32, Tehama County Code.

## **B. CONSTRUCTION AND INSTALLATION**

The following requirements apply to all lots regardless of when or how created.

### **1. Onsite Sewage Disposal (General)**

- a. Where permitted by Section 1101 of the CPC, a building or mobile home sewer may be connected to a sewage disposal system complying with the provisions of these Standards if a sewage disposal permit is first obtained. The type of systems shall be determined on the basis of location, soil porosity and the groundwater level and shall be designed to receive all sanitary sewage from the property. Unless another design or method is approved by the Tehama County Director of Environmental Health, the system shall consist of a septic tank with effluent discharging into a subsurface disposal field.
- b. Disposal systems shall be designed to utilize the most porous or absorbent and aerobic portions of the soil formation. Where the groundwater level extends to within three (3) feet minimum separation on lots greater than ten (10) acres and five (5) feet minimum separator on lots less than ten (10) acres where the upper soil is porous and the underlying stratum is rock or impervious soil, a septic tank and disposal field system may be installed but no seepage pit will be permitted in any event.
- c. All onsite sewage disposal systems shall be designed so that additional subsurface disposal fields, equivalent to at least 100 percent of the required area of the original system, may be installed if the original system cannot absorb and treat all the sewage. No parcel shall be divided and no structure shall be erected or constructed if to do so would impair the usefulness of the 100 percent expansion area for its intended purpose.
- d. No property shall be improved or used in excess of its capacity to properly absorb sewage effluent in the quantities and by the means provided in these Standards.
- e. When the Tehama County Director of Environmental Health finds insufficient lot area or improper soil conditions for adequate sewage disposal for the use proposed, no sewage disposal, building or mobile home installation permit shall be issued and no onsite sewage disposal shall be permitted. Where space or soil conditions are critical, no permit shall be issued until engineering data and test reports have been submitted to and approved by the Tehama County Director of Environmental Health. The Tehama County Director of Environmental Health may approve a variance as to the location of any disposal field shown on a map or plot plan approved under Subsection A above if he finds that new information and public health and safety require the variance.

## 2. Area of Disposal Fields and Seepage Pits

The minimum effective absorption area in disposal fields in square feet of trench bottom and sidewall, and in seepage pits in square feet of side wall, shall be predicated on anticipated daily sewage flow in gallons, and type of soil found in the excavation.

- a. For disposal fields, a minimum of 150 square feet of trench bottom shall be provided for each system, exclusive of all hardpan, rock, clay and other impervious formations. For large, specially-designed and approved systems, side wall area in excess of the required twelve (12) inches and not to exceed 36 inches below the leach line may be added to the square feet trench bottom area when computing absorption areas.
- b. For seepage pits, the required wall area of the pit or pits shall be determined from the results of percolation tests made and interpreted as directed by the Tehama County Director of Environmental Health.

## 3. Septic Tanks

- a. Plans for all septic tanks shall be submitted to the Tehama County Director of Environmental Health for approval and shall show all dimensions, reinforcing, structural calculations and such other pertinent data as may be required. Independent laboratory tests and calibrations shall be provided on prefabricated septic tanks as required by the Tehama County Director of Environmental Health.
- b. Septic tanks shall be water-tight and constructed of sound and durable materials that are not subject to excessive corrosion or decay. Wooden septic tanks are prohibited. Each tank shall be structurally designed to withstand all anticipated earth or other loads and shall be installed level and on a solid bed.
- c. Concrete covers shall be reinforced with steel reinforcing bars and poured-in-place covers shall be reinforced with 1/2-inch steel bars on not more than 20-inch centers. All covers shall be capable of supporting an earth load of not less than 300 pounds per square foot when the maximum coverage does not exceed three feet.
- d. The minimum wall thickness of any steel septic tank shall be No. 12 U.S. gauge (.109 in.) and each steel tank shall be protected from corrosion both externally and internally by an approved bituminous coating or by other means acceptable to the Tehama County Director of Environmental Health.



- e. Septic tank design shall be such as to produce a clarified effluent and shall provide adequate space for sludge and scum accumulations consistent with the proposed use.
  - f. Septic tanks shall have a minimum of two (2) compartments. The inlet compartment of any septic tank shall account for two-thirds of the total capacity of the tank and have a liquid capacity of not less than 1,200 gallons, and shall be at least three (3) feet in width and five (5) feet in length. Liquid depth shall be not less than two (2) feet and six (6) inches. The secondary compartment of any septic tank shall have a capacity of one-third of the total capacity of the tank.
  - g. Access to each septic tank shall be provided by at least two (2) manholes twenty (20) inches in minimum dimension or by an equivalent removable cover slab. One manhole shall be located over the inlet and one over the outlet. Whenever a first compartment exceeds twelve (12) feet in length, an additional manhole shall be provided over the baffle wall. Septic tanks installed under concrete paving or blacktop shall have the required manholes accessible by either extending the manhole openings to grade in a manner acceptable to the Tehama County Director of Environmental Health, or by providing a removable concrete or other approved section, not less than twenty (20) inches in the least dimension, in the concrete paving or blacktop and located directly over the required manholes.
  - h. The inlet and outlet pipe or baffle shall extend four (4) inches above and at least twelve (12) inches below the water surface. The invert of the inlet pipe shall be at a level not less than two (2) inches above the invert of the outlet pipe.
  - i. Inlet and outlet pipe fittings or baffles and compartment partitions shall have a free vent area equal to the required cross-sectional area of the house sewer or private sewer discharging into the tank to provide free ventilation above the water surface from the disposal field or seepage pit through the septic tank, house sewer and stack to the outer air.
4. Disposal Fields
- a. Distribution lines shall be constructed of materials approved by the Tehama County Director of Environmental Health provided that sufficient openings are available for distribution of the effluent into the trench area.
  - b. Before drain lines are laid, gravel, or similar filter materials clean in appearance and varying in size from 3/4 inch to 2-1/2 inches and otherwise acceptable to the Tehama County Director of Environmental Health shall be placed in the trench to the depth and grade required by this paragraph.

- c. Where two (2) or more drain lines are installed, an approved distribution box of sufficient size to receive lateral lines shall be constructed at the head of each disposal field. The inverts of the inlet shall be at least one (1) inch above the outlets. Suitable baffles shall be provided to insure equal flow. Distribution boxes shall be installed in natural or compacted soil.
- d. Connections between a septic tank and a distribution box, or between a distribution box and seepage pit or drain field, or between seepage pits shall be laid with approved watertight joints on natural ground or compacted fill.
- e. Automatic siphon or dosing tanks shall be installed when required or as permitted by the Director of Environmental Health.
- f. Disposal fields shall be constructed as follows:

Maximum length of each line.....	100 feet
Minimum bottom width of trench .....	24 inches
Minimum spacing of lines (edge to edge).....	6 feet
Minimum depth of earth cover over lines .....	12 inches
Maximum grade of lines .....	4"/100'
Minimum grade of trench .....	Level
Maximum grade of trench .....	4"/100'
Minimum usable material below trench bottom .....	12 inches
Minimum filter material under drain lines.....	12 inches
Minimum filter material over drain lines.....	2 inches
Maximum filter material under drain lines.....	36 inches
Maximum distance drain pipe to edge of trench.....	18 inches

- g. A disposal field shall not be installed in filled ground.
- h. Straw, newspaper, untreated building paper or similar materials shall be placed over filter materials in leach lines or seepage pits prior to backfilling.

5. Seepage Pits

No seepage pit may be located in areas where individual wells are within 150 feet. Seepage pits are to be used only as a last resort when no other method of disposal is likely to function properly. No seepage pit may be constructed, maintained or used for sewage disposal unless the Tehama County Director of Environmental Health finds in each case that the use of the pit or pits will not cause a health hazard directly or indirectly. Seepage pits shall be constructed to the following standards:

- a. Each seepage pit above any stratum containing water which is used or is usable as a source of domestic supply shall be separated from that stratum by an impervious stratum.
- b. As soon as the pit is completed, a perforated pipe at least four (4) inches in diameter shall be extended from the bottom to the level of the forthcoming concrete seal. The pit shall then be filled with filter material conforming to the specifications in paragraph 4 above.
- c. Percolation tests may be conducted to demonstrate the absorptive capacity of each pit to the satisfaction of the Tehama County Director of Environmental Health and the Regional Quality Control Board.
- d. A stratum of earth less pervious than any of the soil above it shall be located at least four (4) feet beneath the surface. At the level of this stratum a slab of concrete shall be poured that is at least four (4) inches thick and is keyed into the stratum for at least six (6) inches.
- e. All piping upstream from the concrete slab shall be of approved material and have watertight joints. The construction and capacity of the septic tank shall comply with paragraphs b and c above.

6. Tehama County Director of Environmental Health Authority

In individual cases, the Tehama County Director of Environmental Health may set more stringent requirements than these Standards where such higher requirements are essential to maintain a safe and sanitary condition.

7. Inspections

The system shall not be backfilled or put into use until it has been inspected and approved by the Department. Before the final inspection, it shall be complete and all portions shall be accessible for inspection.

## **TEHAMA COUNTY BULLETIN #1**

### **GUIDELINES FOR MONITORING WELL CONSTRUCTION AND OBSERVATION FOR MATHEMATICAL MODELING**

#### **MONITORING WELLS** (See Chapter 9, DWG. # 0960)

- A.** Observation wells should be drilled to ten (10) feet. This will allow an extra two (2) feet of hole to monitor water levels. Having numerous measurements is critical to the modeling process.
- B.** Use a drill to make the boring, do not use a backhoe. A backhoe results in a major disturbance to the soil around the bore to the extent the monitoring well is not measuring water levels reflective of the property's soil profile, but of a disturbed hole. Completion with a backhoe will generally result in water levels standing higher in the well than if completed by a drill.
- C.** Complete the hole during the summer when the soil is dry. Waiting until saturation occurs before drilling the hole can result in smearing of the hole wall which reduces the ability of the hole to drain, causing higher water levels to be recorded than would normally be found.
- D.** Complete the top three (3) feet of the hole with concrete rather than cuttings removed from the hole. Concrete will provide a seal that keeps surface water from entering the hole. Lack of a proper seal around the top of the hole is the primary source of erratic and unnaturally high water levels in the monitoring wells. The concrete (bagged type is the easiest to work with) can be installed either wet or dry. If installed dry, the concrete will pull moisture from the soil and set adequately; it also will not pass surface water if still in a dry state.

#### **MEASUREMENT PERIOD AND FREQUENCY**

- A.** Measurements should start before the well becomes saturated. It is critical in the modeling process to know how much rainfall occurred prior to saturation.
- B.** Experience has shown that saturation occurs after about 9-12 inches of cumulative rainfall, as measured from about October 1. Tracking the amount of rainfall occurring during the fall will give an idea of when measurements should begin. Once total rainfall reaches nine (9) inches, the wells should be measured at least once every three (3) days until saturation occurs.
- C.** Once saturation occurs, the well should be measured at least once weekly. This frequency should be adhered to regardless of where the water stands in the well (the Ordinance calls for weekly measurements if levels reach above four (4) feet). Measurements should continue on a weekly basis until the well goes dry. If any rainfall occurs after the well goes dry, monitoring should be resumed.

TABLE 1  
 SETBACK DISTANCES FOR SEWAGE DISPOSAL SYSTEMS  
 (9.22.180 TEHAMA COUNTY CODE)

Minimum Horizontal Distance Required From:	Building Sewer	Septic Tank	Disposal Field	Seepage Pit
Buildings or Structures (*1)	2'	5'	8'	8'
Property Line	clear (*2)	5'	5'	8'
Individual Water Supply Wells	50' (*3)	50'	100'	150'
Public Water Supply Wells	50' (*3)	100'	100'	200'
Springs	50'	50'	100'	200'
Drainage Ditches/Ephemeral Streams (Lasts a Day or Two)	25'	25'	25'	50'
Intermittent Streams (Comes & Goes/Not Continuous)	50'	50'	50'	50'
Perennial Streams (Presents Year Round)	50'	100'	150'	200'
Trees	----	10'	----	10'
Seepage Pits	----	5'	10'	12'
Disposal Fields	----	5'	8' (*4)	10'
On-Site Domestic Water Service Line	1' (*5)	5'	5'	5'
Distribution Box	----	5'	5'	5'
Pressure Public Water Main	10' (*6)	10'	10'	10'
Cut or Fill Bank (*8)	10'	10'	4xh (*7)	4xh (*7)
Lake or Reservoir	clear	50'	100'	200'
Drinking Supply-Lakes or Reservoir	clear	50'	200'	200'

\*1. Including porches and steps, whether covered or uncovered, breezeways, roofed ports-cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.

\*2. See also the Tehama County Building Department.

\*3. All drainage piping shall clear domestic water-supply wells by at least fifty feet. This distance may be reduced to not less than twenty-five feet when the drainage piping is constructed of materials approved for use within a building.

\*4. Plus two feet for each additional foot of depth in excess of one foot below the bottom of the drain line. (Measured center-to-center.)

\*5. See Section 1108 of the Uniform Plumbing Code, 1985 Edition.

\*6. For parallel construction. For crossings, approval by the Tehama County Health Department shall be required.

\*7. Distance in feet equals four times the vertical height of the cut or fill bank. Distance is measured from the top edge of the bank (50' maximum if continuing layer is observed.)

\*8. Includes natural escarpments in excess of thirty-six inches. (Ord. 1351 §12(B) (part), 1986)