Mariposa County Sewage Disposal Rules

(per Section 13.08.090 County Code)

.010 Purpose and Authority:

These rules and regulations establish uniform procedures and standards regulating on-site sewage disposal system design and installation. These procedures and standards are designed to protect the health, safety, and general welfare of the citizens of Mariposa County. Goals of these rules and regulations are as follows:

1. To protect the general health, safety and welfare by minimizing the likelihood of on-site system failure.

2. To protect surface and groundwater quality.

3. To prevent the creation of nuisances associated with on-site sewage disposal systems.

4. To establish a uniform, consistent policy regarding implementation and enforcement of the provisions of this chapter.

5. To prevent the creation of lots which cannot be satisfactorily served by an on-site sewage disposal system.

.020 Scope:

These rules and regulations set forth procedures to control the design and installation of on-site sewage disposal systems, established the administrative procedure to issuance of permits and provide for approval of plans and inspection of systems. These rules and regulations prescribe data needs and administrative procedures for Health Department involvement in the planning and permitting process of the County of Mariposa.

.030 Permits Required:

A sewage disposal system installation permit is required from the Mariposa County Building Department as approved by the County Health Department prior to the initiation of construction activities or repair activities associated with a new or an existing on-site sewage disposal system. Said permit shall be obtained prior to or concurrent with issuance of a building permit covering the construction of any structure requiring on-site disposal facilities.

.040 Health Department Approval Required for Other Permits:

Data requirements are outlined in Section .060 of these rules and regulations for land division applications, major subdivision applications, gift deed certificates of compliance, use permits, proposed commercial and industrial uses, existing lots which have not previously been tested in the area of proposed sewage disposal system and specially designed systems for situations where siting or soil conditions do not meet the minimum requirements of this chapter.

.050 Definitions:

The following definitions apply to this chapter:

1. Abandoned Well: A well whose original purpose and use has been permanently discontinued or which is in such a state of disrepair that it cannot be used for its original

purpose. If an abandoned well has been properly destroyed so that it will not produce nor act as a conduit for the movement of water, it will not be subject to well setback requirements.

2. Community Sewerage System: A piped collection system which delivers sanitary wastes from a number of dwellings, business, commercial, etc., units to one or more wastewater treatment plants. The community sewerage system is normally under the jurisdiction of a public entity and operates under waste discharge requirements issued by the Central Valley California Regional Water Quality Control Board.

3. County Sanitarian: County Sanitarian or an authorized representative.

4. Disposal Area: The area to be used for installation of leaching systems (normally trenches or seepage pits) from septic tanks.

5. Drainage Course: Channels or low lines of the terrain in which water flows either continuously or intermittently.

6. Ephemeral Stream: A stream or portion of a stream which flows only in direct response to precipitation.

7. Groundwater: The water in the zone of saturation.

8. Impervious Layer: A strata such as clay or shale that does not permit water to move through perceptibly.

9. Individual Disposal System: A collection system and wastewater treatment and disposal facility for individual dwellings, business, commercial, etc., units.

10. Minimum Useable Disposal Area: The minimum area that must be available on a lot to dispose of waste from septic tank-leaching systems.

11. Perennial Stream: A stream which flows throughout the year.

12. Porosity: The ratio of the aggregate volume of interstices in a rock or soil to its total volume.

13. Report of Waste Discharge: A report required under Section 13.260 of the Porter-Cologne Water Quality Control Act.

14. Rock: Any consolidated or coherent and relatively hard, naturally formed mass of mineral matter that cannot normally be excavated by manual methods alone.

15. Sewage: Any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

16. Soil: A heterogeneous accumulation of uncemented or partially cemented inorganic and organic material, derived from rock formations through physical disintegration and chemical decomposition processes.

17. Swale: A slightly marshy depression in land which is generally level or unincised ephemeral stream.

18. Water Table: The upper surface of the Zone of Saturation, except where that surface is formed by an impermeable body.

19. Zone of Saturation: Area below the water table at which the soil is completely saturated with groundwater.

.060 General Data Needs:

This section covers a wide range of situations where the Health Department requires varying amounts of information and data in order to issue permits or comment knowledgeably about a proposed project. It is the applicant's responsibility and burden to provide the required data prior to processing of an application.

.061 Septic System Permits - Existing Lots – Residential:

A site evaluation shall be conducted by a representative of the Mariposa County Health Department to determine feasibility of siting a system on the lot. For lots six (6) acres or less, if no previously submitted soil bore or perc test data is available covering soil conditions to at least eight feet in depth within 50 feet of the proposed leach field installation, then a minimum of two soil bores or excavations shall be performed within the proposed leachfield area to a depth of at least five (5) feet below the anticipated trench depth to determine the presence or absence of restricting soils, high groundwater, seasonal zones of saturation bedrock and to enable a soils analysis to be performed.

If restrictive soils are found (those soils containing clay or clean sand) as revealed by field plasticity or dalatency tests - (Unified Soil Classification System Method) or evidence of seasonal saturation as revealed by mottling or seepage, then percolation testing shall be conducted on the property in compliance with procedures outlined in the appendix of these rules and regulations.

If percolation testing reveals soil with average percolation rates of less than five (5) minutes per inch or greater than 60 minutes or other restrictions are noted such as shallow depth to bedrock, seasonal saturation or a high groundwater level then a specially designed system may be required in compliance with Section .066 of these rules and regulations.

.062 Septic System Permits - Non-Residential:

Non-residential systems will be processed in the same manner as existing lots (Section .061) except where flows are greater than 450 gallons per day, a specially designed system will be required in compliance with Section .066.

.063 Land Division Applications:

All lots proposed to be created through the land division process (minor subdivision) shall meet the following requirements:

1. Proposed lots must contain adequate room for sewage disposal systems which meet the requirements as set forth in Section .070 of this chapter, as determined by the County Sanitarian.

2. A soil report prepared by a Registered Civil Engineer, Certified Engineering Geologist or Registered Sanitarian shall be submitted for approval to the Health Department if proposed lots are six (6) acres or less. For Land Division Applications proposing lots greater than six (6) acres each a soils report may be required by the County Sanitarian. The soil report shall contain the following:

a. A description of the topographic and siting restrictions on each lot.

b. A description of soil conditions encountered in areas tested. This is to be supported by the inclusion of detailed soil logs using the "Unified Soil Classification System".

c. Percolation test data (see appendix of these rules and regulations for methodology). Four (4) percolation tests per lot minimum will be required. Tests shall be conducted approximately 50' apart and must be conducted within an area that is naturally suitable from a slope, setback and available area standpoint.

d. A map indicating accurately the location of testing.

e. Design recommendations for the sewage disposal system submitted under the signature and stamp of the registered professional preparing the report, or another registered professional retained to prepare the design.

No soil report lacking any of the above information shall be accepted as complete. Processing of the Land Division Application shall be held in abeyance until the above-required information is provided.

.064 Major Subdivision Applications, Planned Developments and Specific Plans:

Where individual on-site disposal systems are proposed as the method of handling solid waste, one percolation test per lot and one soil bore and log will be required to establish the feasibility of handling septic discharges on-site. The major subdivision soil report shall contain the following:

1. A description of the topographic and siting restrictions on each lot.

2. A description of soil conditions encountered in areas tested. This is to be supported by the inclusion of detailed soil logs using the "Unified Soil Classification System". One log/lot.

3. Percolation test data (see appendix of these rules and regulations for methodology). At least one (1) percolation test per lot will be required. Tests should be conducted in areas suitable for the installation of an on lot sewage disposal system.

4. A map indicating accurately the location of testing.

Major subdivision soil reports lacking any of the above information shall not be accepted as complete. Processing of the application shall be held in abeyance until the above required information is provided.

The major subdivision soils report will be considered sufficient when all required data and information is provided. The accepted report is considered a feasibility study only. At the time a building permit is sought for an individual lot within a subdivision, planned development or area covered by a specific plan, rules and regulations set forth in Section .061 will apply.

Upon approval, a notation on the tentative and recorded final map and public report is to be made to notify prospective buyers that the subject property has tentatively been approved for on-site sewage disposal systems. However, further testing in accordance with Section .061 of this chapter may be required.

.065 Gift Deeds/Certificates of Compliance:

All parcels created by means other than the minor or major subdivisions process will be required to meet the requirements of Section .061 and related sections of these rules and regulations and other provisions of Mariposa County Code and State law prior to issuance of a Certificate of Compliance and/or a Building Permit.

.066 Specially Designed Systems:

Specially designed systems are required for commercial, industrial and institutional facilities where on-site sewage disposal systems are proposed and flows exceed 450 gallons/day.

Specially designed systems are required where existing lots, after site evaluation, show restrictive conditions or as required by these rules and regulations. Specially designed sewage disposal systems may be designed by California Registered Sanitarians, Civil Engineers or Certified Engineering Geologists who are knowledgeable and experienced in on-lot sewage disposal system design.

Responsibility for design, inspection and certification lie solely with the registered professional designing the sewage disposal system. The County Health Department will, however, perform a preapproval site evaluation, a post construction inspection and will monitor the system periodically.

Where it is apparent that a submitted design does not conform to established design practice and it is probable that the design if installed would create a nuisance or unsanitary condition, the County Sanitarian with the concurrence of the Health Officer may refuse to issue permits and/or return the plans and specifications to the designing professional for modification. General guidelines for special system designs are included in the appendix of these rules and regulations.

.070 Minimum Setbacks: Minimum setbacks are shown in the table below:

Facility	Domestic Well	Public Well	Flowing Stream[1]	Drainage Course or Ephemeral Stream[2]	Cut Or Fill Bank[3]	Property Line[4]	Lake Or Reservoir[5]
Septic Tank or Sewer Line	50	100	50	25	10	25	50
Leaching Field	100	100	100	50	4 Times the Height	50	200
Seepage Pit	150	150	100	50	4 Times the Height	75	200

1. As measured from the line which defines the limit of a 10-year frequency flood.

2. As measured from the edge of the drainage course or stream.

3. Distance in feet equal four times the vertical height of the cut or fill.

4. This distance shall be maintained when individual wells are to be installed and the minimum distance between waste disposal and wells cannot be assured.

5. As measured from the high water line.

6. Leachfields must be located in areas of less than 30% slope.

.080 Minimum Requirements:

A. Septic Tank:

1. Minimum septic tank is as follows:

Capacity of Septic Tanks

Number of Bedrooms	Liquid Capacity in Gallons
1 - 3	1,000
4	1,200
5	1,500

Tank capacity shall be three hundred (300) gallons per bedroom for each additional bedroom over 5.

2. Materials of Construction:

a. The septic tank shall have a minimum of two compartments and be constructed of reinforced concrete or precast concrete with a reinforced top. The tank shall be watertight.

b. Wood tanks are not permitted.

3. Tanks constructed of durable and non-corrodible synthetic materials may be allowed subject to the approval of the County Sanitarian.

4. The inlet and outlet baffles (tees) shall extend at least four (4) inches above and twelve (12) inches below the water level in the tank.

5. The inlet compartment shall not be less than 2/3 of the total capacity of the tank.

6. Access to the septic tank shall be provided by at least two (2) manholes twenty (20) inches in diameter. One shall be located over the inlet compartment and the other over the outlet compartment.

7. Septic tank construction shall conform with applicable Uniform Plumbing Code regulations. Inlet and outlet baffles or compartment partitions shall have a free vent area equal to the required cross sectional area of the house sewer or private sewer discharging there into to provide free ventilation above the water surface from the disposal field through the septic tank, house sewer and stack to the outer air.

8. Horizontal drainage piping from the building to the septic tank shall be a uniform slope of not less than 1/4 inch per foot. In special cases, the slope may be reduced to 1/8 inch per foot. Pipe size shall be four (4) inches and shall be water tight.

9. Minimum distance from septic tank to building foundation is five (5) feet.

10. The building sewer stub shall exit the building no less than six (6) inches nor more than eighteen (18) inches below the final grade.

B. Drainfield:

1. Drainfield trench absorption area shall be based on the infiltration of the sidewall area adjacent to the drainrock and below the distribution pipe.

2. Distribution pipe (perforated pipe) shall be laid level to six (6) inches of fall per 100 feet, with a maximum length of 100 feet.

3. Drain rock shall be between 3/4 inches to 2 1/2 inch washed gravel.

4. In clay soils, smeared or compacted surfaces must be scored prior to filling with rock.

5. Distribution boxes shall be designed to assure equal flow and installed on a level concrete slab with areas around inlets and outlets sealed. All solid piping shall be four (4) inches chemically welded plastic pipe to provide water-tight joints. Polyethylene solid pipe is prohibited.

6. Drainfields shall not be installed in wet or damp clay soils.

7. Lines must be ten (10) feet away from any building foundation.

8. Minimum distance between lines is six (6) feet measured center to center.

9. A 50 foot setback is required from all perimeter lot lines unless waived by the Health Department.

10. Perforated pipe shall not be less than four (4) inches in diameter and contain 1/4 - 1/2 inch minimum perforations. Tile lines are prohibited.

11. Before drainlines are laid, approved rock shall be placed in the trench to a minimum depth of 18 inches. A minimum cover of two (2) inches of gravel over the drainline is required. A cover of straw or untreated building paper is required to prevent the dirt backfill from entering the voids in the gravel.

12. A distribution box shall be constructed at the head of each subsurface disposal field. The box shall be at least 12 inches across inside and of water tight construction. The box or

boxes shall rest on undisturbed soil or compacted fill, such that settling will not occur. The box or boxes shall be placed at least five (5) feet from the beginning of the leachfield.

13. Leachline trenches should be 18 to 24 inches wide.

14. A copy of the approved plot plan and permit must be on the site during construction.

C. Sewage Flow Specifications:

1. The sewage flow from individual sewage disposal systems serving single or multiple dwellings of five (5) units or less shall be based on one hundred and fifty (150) gallons per bedroom per day.

2. Other design flows may be approved by the County Sanitarian upon submission of supporting data and calculations.

.090 Plumbing Code exceptions and superseding provisions:

The following provisions and sections of the latest adopted addition of the Unified Plumbing Code are deleted as follows:

Sections 1-1, the last sentences of Section 1-2, Section 1-3. Tables 1-1, 1-2, 1-4, 1-5, 1-6, 1-7 and 1-8 are deleted. Table 11-1.

.100 Authority of Health Officer:

Nothing contained in these rules and regulations shall be construed to prevent the Health Officer or his authorized representative from requiring compliance with higher requirements than those contained herein where such higher requirements are essential to maintain and protect the public health, safety and welfare.

.110 Liability to the County Officials:

These rules and regulations shall not be construed as imposing upon the County or its officials any liability or responsibility for damage resulting from any sewage disposal system as herein provided; nor shall the County or any official employee thereof be held as assuming such liability or responsibility by reason of the activities authorized herein.

.120 Appeals:

In the event that approval of a proposed system is denied by the Health Department, an appeal may be made to the Board of Supervisors whose decisions shall be final. The appeal shall be filed with the Clerk of the Board of Supervisors within ten (10) calendar days following the denial, and shall specifically state the grounds on which the appeal is based.

.130 Violation – Penalty:

Violations of this chapter are misdemeanors punishable as set forth in Chapter 1.08 of Mariposa County Code.

APPENDIX B

DESIGN CRITERIA
RECOMMENDED RATES OF WASTEWATER APPLICATION
FOR TRENCH AND BED BOTTOM AREAS[a]

Soil Texture	Percolation Rate	Application Rate[6]
	Min/In	gpd/ ft^2
Gravel, coarse sand	1	Not suitable[c]
Coarse to medium sand	1 - 5	1.2
Fine sand, loamy sand	6 - 15	0.8
Sandy loam	16 - 30	0.6
Loam, porous silt loam	31 - 60	0.45
Silty clay loam, clay loam[d]	61 - 120	0.2[e]

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a. May be suitable estimates for sidewall infiltration rates.

b. Rates based on septic tank effluent from a domestic waste source. A factor of safety may be desirable for wastes of Significantly different character.

c. Soils with percolation rates 1 min/in. can be used if the soil is replaced with a suitably thick (2 ft) layer of loamy sand or sand.

d. Soils without expandable clays.

e. These soils may be easily damaged during construction.

APPENDIX C

GENERAL GUIDELINES FOR SPECIALLY DESIGNED SYSTEMS

Specially designed systems are applicable where conditions on existing lots do not meet minimum standards as set forth in these rules and regulations. Specially designed systems may be designed by California Registered Sanitarians, Civil Engineers, or Certified Engineering Geologists who are knowledgeable and experienced in the field of on-site sewage disposal.

Each specially designed system must contain the following:

1. Regional or vicinity map.

2. North arrow and scale(s).

3. Plot plan, accurately showing location of improvements, restrictions and slopes.

4. Design details.

5. Specifications for material and workmanship.

6. Soil profile hole logs "Unified Soil Classification System" including description of color, approximate percentages of gravel, sand and fines, moisture content, plasticity or dalatency, structure, cementa- tion, degree of compactness, consistency, mineralogy, typical name and group symbol.

7. Percolation test results, including field data.

8. Calculation sheets, justifying the design.

9. Signature and stamp of registered professional preparing the design.

10. Authorization from owner allowing Health Department personnel to inspect system during normal working hours.

11. Three (3) complete sets of plans, specifications and data must be submitted.

Responsibility for construction inspection lies with the designer. After installation, the designer shall certify in writing to the Health Department that the system was located and installed in compliance with the approved plans and specifications. Minor deviations from the approved plan and specifications arising from prior unknown site conditions shall be accurately included in the certification and "as built" plans. Major deviations shall be reported to the Health Department prior to installation and new written approval shall be required.

Specially designed systems must be approved by the County Sanitarian. Contemporary design practice for non-conventional systems is thoroughly described in several recent publications including:

A. 1979 State of the Art Manual

On-Site Wastewater Management
National Environmental Health Association

B. State Water Resources Control Board Guidelines for Mound and Evapotranspiration Beds.

C. EPS Design Manual - On-Site Wastewater Treatment and Disposal Systems.

MARIPOSA COUNTY HEALTH DEPARTMENT
PROCEDURE FOR PERFORMING PERCOLATION TESTS IN MARIPOSA COUNTY — POLICY 89-10 (Supersedes 7/25/91)

1. Dig or bore a hole with minimum diameter of six (6) inches. The bottom of the test hole shall be located at the same depth as the bottom of the proposed leaching field. There shall be at least five (5) feet of undisturbed soil extending around all sides of the percolation test hole.

2. Roughen or score the bottom and sides of the holes to provide a natural surface. Removal all loose material from the hole.

3. Spread two (2) inches of coarse sand or fine gravel into the hole to protect the bottom surface and insert a perforated pipe in the hole. The pipe should be secured in place in order to prevent movement during the test.

4. Pour clean water into the pipe to a minim depth of twelve (12) inches above the bottom of the hole. Recheck the water level in a few hours and refill, if necessary, in order to keep the hole saturated. The hole shall be presoaked for a minimum of 24 hours.

5. After the overnight saturation period, adjust the water level to six (6) inches above the two (2) inch gravel layer. From a fixed reference point, measure the drop in water level at approximately 30 minute intervals (10 minute or shorter intervals in sandy soils.) When the water level within the percolation test hole lowers to four (4) inches, refill back to the six (6) inch level and continue measuring the absorption. Percolation rates will be considered stabilized when four (4) consecutive readings demonstrate a consistent (less than 20% variance) rate of fall has been obtained. The smallest drop that occurs during the stabilized period will be used to calculate the percolation rate. If gravel is used around the pipe to secure it, then the percolation rate will be adjusted by multiplying the rate X 1.6. Percolation test should be read for no less than three (3) hours for soils containing clay or silt. Tests in sands can be read for one hour.

Copies of the field data must be submitted with reports including date, time of presoaking, date and time of testing, soil type, readings, depth, location and percolation rates.

APPENDIX D

"USE OF CHAMBERED DEVICES IN LEACHFIELDS

1. As an alternative to drainfields utilizing drainrock and perforated pipe, approved chambered devices constructed for the specific purpose shall be allowed utilizing absorption area calculations detailed below.

2. Drainfield trench absorption area, when chambered devices are utilized, shall be based on the infiltration of side wall area and bottom area utilizing a calculation of the wetted perimeter. The application rate shall be the same as would be used for a drainrock-filled trench on the specific site.

3. Leachfields shall be constructed in such a manner as to divert water from flowing over the leachfield in a sheeting manner that would saturate the leachfield.

4. At least one observation pipe shall be installed in each leachline.