

Draft California Onsite Wastewater Treatment System Regulations - 8/03 Revision

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1.0 Purpose and Objective

The purpose of these Regulations is to provide for safe, dependable and economical use of Onsite Wastewater Treatment Systems (OWTS) and provide consistency in system management, design and installation practices. It is the intent that this regulation be continually reviewed and updated as the industry and technology evolves.

1.1 Scope

The Onsite Wastewater Treatment System Regulations:

1. Establish minimum management programs that must be implemented by the authorized local agencies.
2. Provide performance and prescriptive requirements for the use of standard and enhanced Onsite Wastewater Treatment Systems.
3. Establish site evaluation, design, installation and equipment standards.
4. Provide education, training and certification requirements for professionals who design, install, monitor, repair, maintain and regulate OWTS.
5. Establish provisions for adopting maintenance and monitoring programs at the county level and enforcement procedures to ensure that monitoring programs are successful.
6. Develop public education programs for property owners to promote water conservation and periodic monitoring and maintaining of their septic system.
7. Encourage research and demonstration projects for innovative technology.
8. Establish protocol for mainstreaming experimental and innovative systems.

2.0 Ordinances

The Qualified Local Agency¹ (QLA) overseeing Onsite Wastewater Treatment Systems shall prepare an Onsite Wastewater Treatment System (OWTS) Ordinance after holding a public hearing on reasonable notice thereof, to control and enhance the quality of the ground and surface waters in order to eliminate the pollution, waste, and contamination of water flowing into, through, or originating within watercourses, both natural and artificial, to prevent contamination, nuisance, pollution, or otherwise rendering unfit for beneficial use the surface or ground water used or useful, and to expend such amounts as are necessary to exercise such powers from the funds of local authorized agency. Such regulations shall not be in conflict with state law or county ordinances.

¹ The permitting agency shall mean any agency that has authority to regulate the use of Onsite Wastewater Treatment Systems.

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12 The local ordinance shall be reviewed by the RWQCB for compliance with applicable
13 State Standards and Regulations and the RWQCB Basin Plan. The local ordinance shall
14 be reviewed and updated at least every 5 years.
15

16 3.0 Memorandum of Understanding

17 The QLA shall enter into a memorandum of understanding with the appropriate
18 Regional Water Quality Control Board(s) that establishes the authority to
19 implement the QLA program. The memorandum shall include the following:

- 20 (A) Applicability of systems: Including limits on flows, effluent types and
21 sources;
- 22 (B) General Provisions: Including assurance that siting, design, approval,
23 installation, maintenance and monitoring of all systems shall be in
24 conformance with the Act, these regulations and regional water quality control
25 board basin plan, policies and requirements;
- 26 (C) Term of agreement: The agreement shall be valid for a minimum of five years,
27 unless terminated by the local agency or the regional board for just cause;
- 28 (D) Established criteria for the review of local agency performance by regional
29 boards: Each qualified local agency program shall be reviewed for consistency
30 with these regulations no less frequently than every five years;
- 31 (E) Established criteria for the review of local agency performance by regional
32 boards: Each qualified local agency program shall be reviewed for consistency
33 with these regulations no less frequently than every five years;
- 34 (F) Local agency qualifications: Each local agency shall demonstrate adequate
35 qualified staffing with technical expertise in the following fields:
 - 36 (i) Permitting and inspection of OWTS.
 - 37 (ii) RWQCBs basin plan, policies and requirements.
 - 38 (iii) Appropriate soil and site evaluation expertise.
 - 39 (iv) System design, performance; system monitoring.
 - 40 (v) Personal safety associated with OWTS.
- 41 (G) Clear description of respective roles and responsibilities of regional board and
42 local agency with respect to enforcement and corrective action;
- 43 (H) Types of systems that may be permitted by the local agency commensurate
44 with its qualifications and approved management program;
- 45 (I) Criteria and process to be used by the local agency for granting any variance
46 from any individual requirement under these regulations. Such criteria shall
47 ensure that any such variance shall not result in a significantly greater impact
48 on public health or water quality than posed by systems in full compliance
49 with these regulations;
- 50 (J) Criteria and process to be used by the regional board for granting any
51 exemption of a system(s) from requirements established in these regulations.
52 Such criteria shall ensure that any such exemption shall not result in a
53 significantly greater impact on public health or water quality than posed by
54 systems in full compliance with these regulations.

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55 (K) The regional water quality control board shall develop a process for the
56 regional board to assume responsibility for implementing these regulations in
57 the event that the local agency does not elect to implement all or part of the
58 regulations or is determined by the regional board to be unqualified to
59 implement the regulations.

60 (L) In the event that a local agency falls in more than one regional board's
61 jurisdiction, a single MOU between the local agency and multiple regional
62 boards shall be established, but may contain separate provisions for each of
63 the regional basin plans with which the local agency shall comply.
64

65 4.0 Authority

66 The authorized local agencies shall have jurisdiction of OWTS up to a maximum
67 daily average discharge of 20,000 gallons per day (gpd)² or as otherwise
68 established by the memorandum of understanding between the QLA and the
69 RWQCB. All other Onsite Wastewater Treatment Systems with discharges
70 greater than 20,000 gpd shall be regulated by the RWQCB.

1 5.0 Qualified Local Agency Function and Duties

2 5.1 Function

3 The Qualified Local Agency (QLA) or its representative officers shall provide
4 oversight of OWTS to protect health and safety and preserve water quality
5 standards as prescribed in the RWQCB basin plan and the Federal and State water
6 quality requirements. The QLA shall provide relevant operation and maintenance
7 information and promote and distribute educational materials to assist the Owner
8 in preserving the performance and life of their system.

9 5.2 Representative Officers

10 Representative Officers may include; qualified septic tank contractors, registered
11 environmental health specialists or a qualified designer employed or contracted by
12 the QLA.

13 5.3 Duties

14 In addition to the other powers provided by law, the QLA, shall have all of the
15 following powers and shall promptly and effectively exercise such powers as may
16 be appropriate to ensure that onsite wastewater treatment systems, as defined in
17 Section 6952 of the Health and Safety Code (Section 6952. reads "On-site
18 wastewater disposal system" means any of several works, facilities, devices, or
19 other mechanisms used to collect, treat, recycle, or dispose of wastewater without

² Local authority must be established by Memorandum of Understanding with the RWQCB

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20 the use of community wide sanitary sewers or sewage systems), do not pollute
21 surface water and ground water.

22 The QLA shall develop administrative procedures to:

- 23 1. Establish the appropriate management levels necessary to comply with the
24 management standards of these regulations.
- 25 2. Establish a record keeping and reporting program to ensure that up-to-date
26 records are kept of location, ownership, site evaluation, design, and
27 compliance reports are maintained and performance of systems is
28 monitored.
- 29 3. To carry on technical and other investigations, examinations, or tests, of
30 all kinds, make measurements, collect data, and make analyses, studies,
31 and inspections pertaining water quality, nuisance, pollution, waste, and
32 contamination of water as such activities relate to the use of onsite
33 wastewater treatment systems.
- 34 4. Enter into agreements with qualified management entities to fulfill the
35 maintenance, operation and monitoring functions described for the
36 management program levels.
- 37 5. Issue appropriate permits for the installation and operation of Onsite
38 Wastewater Treatment Systems.
- 39 6. Inspect or cause to have inspected Onsite Wastewater Treatment Systems
40 as prescribed by this ordinance.
- 41 7. Coordinate with the Regional Water Quality Control Board Watershed
42 Management Initiative Program and other agencies to identify areas of
43 special concern.
- 44 8. Develop/adopt and provide an educational program that ensures that
45 system owners and service providers understand their roles,
46 responsibilities, requirements, and procedures for managing onsite
47 systems.
- 48 9. Monitor all OWTS performance throughout their jurisdiction or in
49 concentrated areas of special concern, whichever is considered appropriate
50 to protect public health and safety and evaluate the effects on ground and
51 surface water quality.
- 52 10. Enter any parcel where an OWTS is located for the purpose of inspecting
53 or evaluating the performance of the system. The QLA shall provide
54 appropriate notice as to the date and approximate time of the inspection in
55 writing to the owners and occupants before entering the property.
- 56 11. May enter property without written or verbal notification when there is
57 reasonable cause to suspect that the OWTS is failing³ and endangering
58 public health, safety and water quality.
- 59 12. When an owner or occupant denies entry to the QLA or its representative
60 officers during routine or emergency inspections, the QLA shall obtain a

³ A failing system shall be defined as any system where wastewater effluent and solids are no longer safely treated and/or discharged and pose a direct health and safety risk to humans, animals and water quality.

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61 Court Order (Inspection Warrant) pursuant to Title 13 (commencing with
62 Section 1822.50) of Part 3 of the Code of Civil Procedure for right of
63 entry to inspect and/or evaluate the system.⁴

64 13. When applicable, the QLA shall issue to the owner a correction notice to
65 pump the tank or correct any system deficiencies. The owner shall
66 comply with the directives of the QLA within the required time stated in
67 the notice. Failure of the owner to comply with the directive shall be in
68 violation; their operating permit will be suspended; and the system must
69 be abandoned until the requirements of the correction notice have been
70 met. Continued use of the OWTS without an operating permit is a
71 violation of law and subject to criminal action as may be set forth by the
72 QLA.
73

74 **5.4 Violation**

75 Any violation of a regulation is a misdemeanor punishable by a fine not to exceed five
76 hundred dollars (\$500), or imprisonment not to exceed 60 days, or by both such fine and
77 imprisonment. Each day of such a violation shall constitute a separate offense. Any
78 violation or threatened violation of a regulation may also be enjoined by civil suit.
79

80 **5.5 Eligible Management Entities**

81 Cities & towns, public utility districts, water & sewer districts, special-use
82 districts, and corporations and homeowner associations with demonstrated
83 capacity to assure long-term management.

84 **5.6 Areas of Special Concern**

85 The QLA may investigate and take appropriate action to minimize public health
86 and/or environmental risk in formally designated areas such as:

- 87 1. Shellfish protection districts or shellfish growing areas;
- 88 2. Sole Source Aquifers designated by the U.S. Environmental Protection
89 Agency;
- 90 3. Areas with a critical recharging effect on aquifers used for potable water;
- 91 4. Designated public water supply wellhead protection areas as identified in
92 the County Source Water Protection Program.
- 93 5. Up-gradient areas directly influencing water recreation facilities
94 designated for swimming in natural waters with artificial boundaries
95 within the waters;
- 96 6. Areas designated by the State Water Resources Control Board as special
97 protection areas;

⁴ See California Water Code Section 31143-31143.5 for possible abatement/enforcement language (Appendix III).

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- 98 7. Areas designated by the Regional Water Quality Control Board(s) as
99 special protection areas identified in the Watershed Management Initiative
100 program;
101 8. Wetland areas under production of crops for human consumption;
102 9. Frequently flooded areas delineated by the Federal Emergency
103 Management Agency; and
104 10. Areas identified and delineated by the local QLA in consultation with the
105 Regional Water Quality Control Board to address public health threat from
106 on-site systems.

107 The QLA may impose more stringent requirements on new development and
108 corrective measures to protect public health upon existing developments in areas
109 of special concern, including:

- 110 1. Additional location, design, and/or performance standards for OWTS;
111 2. Larger land areas for new development;
112 3. Prohibition of development;
113 4. Additional operation, maintenance, and monitoring of OWTS
114 performance;
115 5. Requirements to upgrade existing OWTS;
116 6. Requirements to abandon existing OWTS; and
117 7. Monitoring of ground water or surface water quality.

118 Within areas of special concern, to reduce risk of system failures, a person
119 approved or designated by the QLA shall:

- 120 1. Inspect every OWTS at least once every three years;
121 2. Submit the following written information to both the QLA and the
122 property owner within 30 days following the inspection:
123 3. Location of the tank;
124 4. Structural condition of the tank, including baffles;
125 5. Depth of solids in tank;
126 6. Problems detected with any part of the system;
127 7. Maintenance needed;
128 8. Maintenance provided at time of inspection; and
129 9. Other information as required by the QLA.
130 10. Immediately report failures to the QLA.
131

132 5.7 Exemptions

133 Each RWQCB shall establish a process or category of subsurface discharges that can
134 be exempted from these regulations. The following factors and criteria may be
135 considered in granting exemptions:

- 136 (1) The history of the area or system type with respect to documented failures of
137 OWTS.
138 (2) The hydrogeologic and surface hydrologic setting in which the proposed
139 exemption would be appropriate, including the proximity of potential surface

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- 140 water receptors, depth to groundwater, and the hydraulic conductivity of soils
141 extending from the surface to the underlying aquifer.
- 142 (3) The beneficial uses of the potential receiving waters, and whether any designated
143 beneficial uses may be adversely affected from OWTS releases not conforming to
144 these regulations.
- 145 (4) Any documentation or testimony that supports or is contrary to a determination
146 that an exemption would not contribute to further degradation of any water bodies
147 listed as impaired under Clean Water Act Section 303(d).
- 148 (5) Any documentation submitted by a State or local health agency that finds an
149 exemption, if granted, would not create a public health hazard, nuisance
150 conditions, or cause or contribute to other adverse environmental conditions.
- 151 (6) In assessing the potential degradation of water quality which may arise due to the
152 effects of cumulative impacts, the RWQCB may consider contributing factors
153 which include, but are not limited to, the following:
- 154 (A) The estimated population of residents affected by the proposed exemption;
155 (B) The location of areas or communities in relation to surface water bodies;
156 (C) The average parcel size eligible for inclusion in the exemption;
157 (D) The average population density of areas which may be granted an exemption;
158 (E) The location, general water quality, abundance, and potential vulnerability of
159 domestic and/or public water supplies to surface contamination (e.g. the
160 existence of unsealed or inadequately sealed water supply wells within the
161 areas deemed eligible for the exemption).

162

163 Standard systems that meet the following conditions are exempt from performance
164 standards unless required by the QLA as necessary for public health or environmental
165 protection:

- 166 (1) The system is designed to accommodate less than 2500 gallons per day of
167 domestic wastewater, such as the systems servicing single-family homes,
168 small apartment complexes, small office buildings, and other sites where the
169 type or water use is consistent with domestic use;
- 170 (2) The system meets all standard system requirements regarding horizontal
171 setbacks, soil texture and structure, soil permeability, soil depth, and depth to
172 bedrock, hardpan, mostly impermeable clay horizons, and groundwater
173 separation;
- 174 (3) The system is not required by the QLA to adhere to performance
175 standards.

176

177 5.8 Fees

178 Agencies shall establish fees for permits, plan checking, inspection and
179 monitoring and maintaining files and all other costs necessary to administer the
180 program.

181 5.9 Appeals

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182 QLAs shall establish an independent panel for hearing appeals. The panel shall be
183 comprised of at least one each of the following members: one agency staff, one
184 professional OWTS consultant, one OWTS Installer or Pumper, one industry
185 representative, one person from the public at large with alternates for each
186 position. Decisions of the panel shall be reviewed by the Administrative Officer
187 for compliance with the OWTS ordinance in force and the State Health and Safety
188 code.

189 **5.10 Abatement**⁵

190 In the event that the local QLA determines that a violation of the provisions of
191 this code exists, the local QLA shall require the owner of the property to abate
192 any system failure or nuisance that imposes a risk to public health and safety.⁶
193 Violation of any of the provisions of a regulation adopted pursuant to Section
194 xxxx may be abated as a public nuisance, and the governing body may by
195 regulation establish a procedure for the abatement of such a nuisance and to
196 assess the cost of such abatement to the violator. If the violator maintains the
197 nuisance upon real property in which he has a fee title interest, the assessment
198 shall constitute a lien upon such real property.
199

200 **6.0 Management Program**⁷

201 Authorized Local Agencies shall establish a management program that consists of
202 one or more of the five management levels (Table 1). Qualified Local Agencies
203 shall establish the appropriate management level(s) after:

- 204 1. consultation with and concurrence from the Regional Water Quality
205 Control Board(s) concerning the management level necessary to
206 implement the provisions of this ordinance. The management level shall
207 be determined by an assessment of the level of oversight and system
208 management necessary to protect public health and water quality.
- 209 2. public hearing
210

211 **6.1 Management Program Level 1 System Inventory and Awareness of** 212 **Maintenance Needs**

213 Management Program 1 is the required basic management program. It is suitable
214 where:

- 215
- 216 1. Standard Onsite Sewage Treatment Systems are/can be installed
- 217 2. There is no recognized water quality threat from OSTs use.
- 218 3. Onsite Sewage Treatment Systems are owned and operated by
219 individual property owners in areas of low environmental

⁵ This section was taken in part with additional changes from the Santa Cruz County Code.

⁶ See Appendix III for Water Code language

⁷ See Appendix IV for additional guidance for the management levels

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220 sensitivity. Areas of low environmental sensitivity are areas where
221 there is no demonstrated impairment of ground or surface water
222 resulting from the continued use of standard onsite sewage
223 treatment systems.

224 An onsite sewage treatment system managed at this level shall be issued a
225 standard operating permit. System operation and maintenance
226 responsibilities lie solely with the system owner.

227 **6.1.1 Program Objectives/Agency Responsibilities**

- 228 a. to ensure that all systems are sited, designed and constructed in
229 compliance with the prevailing rules for a Standard Onsite Wastewater
230 Treatment System,
- 231 b. ensure that all systems are recorded and inventoried,
- 232 c. ensure property owners are informed of maintenance needs of the systems,
233 and
- 234 d. to provide communities with basic data for determining whether higher
235 management levels are necessary.

236

237 **6.2 Management Program Level 2 - Renewable Operating Permits and** 238 **Maintenance Contracts**

239 Minimum management program necessary where enhanced onsite sewage
240 treatment system designs are employed to provide treatment to overcome
241 restrictive site conditions in areas of low environmental sensitivity. This program
242 is suitable where:

- 243 1. Sites have limiting soil/site conditions that do not allow for a standard
244 onsite sewage treatment system.
- 245 2. System owners retain responsibility for system operation and
246 maintenance.
- 247 3. Maintenance is provided for by means of a maintenance contract with a
248 public or private entity or by the system owner.

249 **6.2.1 Program Objectives/Agency Responsibilities**

- 250 a to ensure that all systems are sited, designed and constructed in
251 compliance with the prevailing rules for a Enhanced Onsite Sewage
252 Treatment System,
- 253 b ensure that all systems are recorded and inventoried,
- 254 c ensure property owners are informed of maintenance needs of the systems,
255 and
- 256 d to provide communities with basic data for determining whether higher
257 management levels are necessary.
- 258 e Utilize Renewable Operating Permits (ROP) that are of limited term and
259 are issued to the property owner. The owner must demonstrate that the
260 system is in compliance with the terms and conditions of the permit on a
261 predetermined frequency.

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- 262 f The ROP provides the local permitting agency a mechanism for
263 continuous oversight of system performance and negotiating corrective
264 actions or levying penalties if compliance with the permit is not
265 maintained.
- 266 g The ROP shall be renewed only upon certification of proper system
267 function.
- 268 h The property owner shall provide the necessary maintenance as stipulated
269 in the operating permit.

270 **6.3 Management Program Level 3 - Renewable Operating Permits, Maintenance** 271 **Contracts, and Performance Monitoring**

272 Minimum management program necessary where:

- 273 1. Onsite sewage treatment systems are located in areas with sensitive
274 receiving environments.
- 275 2. It is necessary to achieve specific water quality objectives.

276 **6.3.1 Program Objectives/Agency Responsibilities**

- 277 a to ensure that all systems are sited, designed and constructed in
278 compliance with the prevailing rules for a Onsite Sewage Treatment
279 System,
- 280 b ensure that all systems are recorded and inventoried,
- 281 c ensure property owners are informed of maintenance needs of the systems,
282 and to provide communities with basic data for determining whether
283 higher management levels are necessary.
- 284 d Establish a monitoring and reporting program that ensures onsite systems
285 continuously meet their performance requirements.
- 286 e Conduct sanitary surveys to provide assessment of existing onsite system
287 performance.
- 288 f Utilize renewable operating permits that are of limited term and are issued
289 to the property owner. The owner must demonstrate that the system is in
290 compliance with the terms and conditions of the permit on a
291 predetermined frequency
- 292 g The ROP provides the local permitting agency a mechanism for
293 continuous oversight of system performance and negotiating corrective
294 actions or levying penalties if compliance with the permit is not
295 maintained.
- 296 h The property owner shall contract with a maintenance provider to provide
297 the necessary maintenance as stipulated in the operating permit.
- 298 i Ensure that trained operators are under contract to perform timely
299 maintenance.

300 **6.4 Management Program Level 4 - Utility Operation and Maintenance**

301 This management level is for onsite sewage treatment systems where:

- 302 1. the sensitivity of the environment is high

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- 303 2. the need for properly functioning systems is essential to maintain public
304 health and environmental protection.
- 305 3. Operation and maintenance functions are delegated to a public or private
306 utility.

307 Applicable where: monitoring of a public drinking water supply has detected
308 pathogens or elevated levels of nutrients and a source water assessment has
309 identified onsite/decentralized systems as sources of concern, or a determination
310 has been made that ground water or surface water is impaired as a result of onsite
311 treatment systems (CWA , 303(d) & 305(b) reports).

312 **6.4.1 Program Objectives/Agency Responsibilities**

- 313 a. to achieve greater control over compliance by issuing the operating permit
314 to a utility instead of the property owner,
- 315 b. monitor and make assessments of watershed impacts from onsite systems
316 and replace existing systems with higher performance units where
317 necessary
- 318 c. to enable utilization of enhanced systems that provide the performance
319 required to mitigate public health or environmental concerns,
- 320 d. ensure higher level of maintenance by having a public or private utility
321 take responsibility for the operation and maintenance of systems,
- 322 e. ownership of the system remains with the property owner, and
- 323 f. the renewable operating permit is issued to a public or private utility that
324 meets the specified criteria as determined by the local permitting agency.

325 **6.5 Management Program Level 5 - Utility Ownership and Management,**

326 The designated management entity both owns and operates the onsite systems.
327 The utility maintains total control of all aspects of management, not just operation
328 and maintenance. This management level is for onsite sewage treatment systems
329 where:

- 330 1. the sensitivity of the environment is high
- 331 2. the need for properly functioning systems is essential to maintain public
332 health and environmental protection.

333 **6.5.1 Program Objectives/Agency Responsibilities**

- 334 a. provide professional management of all aspects including siting,
335 design, construction, operation and maintenance,
- 336 b. monitor and make assessments of watershed impacts from onsite
337 systems and replace existing systems with higher performance
338 units where necessary
- 339 c. provide comprehensive monitoring, maintenance and operation in
340 new, high-density development proposed in the vicinity of
341 sensitive receiving waters.
- 342 d. provides the highest level of management and allows for
343 integration of Onsite Wastewater Treatment Systems into the
344 wastewater treatment infrastructure of a community.
- 345

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Table 1 - Management Levels: Risk-based Approach

Management Level	Risk Level	Risk Level Characteristic (Can be assigned to an area or to a site.)	Site response	Minimum QLA Responsibility direct or delegated to service provider	Examples of currently available technologies that could provide necessary level of treatment	Examples of current programs
I	R 1	No water quality problem, no site limiting conditions.	Any type of system allowed by local code is acceptable.	Permit to Construct and Standard Operating Permit & System inventory	Standard septic tank and leachfield or seepage pit	Most local implementing agencies are currently at this level
II	R 2	Site limiting conditions (such as unsuitable soils and/or inadequate depth to limiting factor.)	Any type of system that physically replaces what site is lacking, to ensure that there is no human exposure to untreated sewage.	Renewable Operating Permit that ensures non-standard components are maintained. Physical monitoring by system owner.	Advanced treatment systems (media filter, ATU (?), etc., and/or advanced soil treatment & dispersal (mound, subsurface drip, LPP, etc.).	
III	R 3	Areal dependence on shallow ground water for drinking water, shellfish or recreational use. Documented nitrate or human bacterial water quality problem in ground water or nearby surface waters, or onsite system density exceeds area's assimilative capacity for contaminant	Risk level should be assigned to individual sites proposed for development. New systems should include advanced treatment. Repairs should include advanced treatment where feasible. Repairs and new systems should include advanced treatment that treats the contaminant of concern.	Renewable Operating Permit that ensures non-standard components are maintained. Physical monitoring by regulator or contracted service provider required. Effluent sampling and/or ground water monitoring required at permitting agency discretion.	Standard Systems and Advanced treatment systems (media filter, ATU, etc., and/or advanced soil treatment & dispersal (mound, subsurface drip, LPP, etc.) to address the contaminant(s) of concern; such as disinfection for bacteria, or treatment for nitrate removal/reduction	Placer County, Sonoma County PRMD, Santa Cruz County (San Lorenzo), Town of Paradise
IV	R 4	Documented water quality problem, nitrates and/or human pathogens, identified by the Regional Water Quality Control Board (RWQCB) through various water quality assessment processes (such as WMI, 303(d), or TMDL) or the Department of Health Services (Source Water Assessment)	Corrective action needed to mitigate, may require system upgrades and/or conversion to cluster or centralized sewer treatment.	Waste Discharge Requirements issued to RME. Physical monitoring by regulator or RME required. Effluent sampling and/or ground water monitoring required at state's discretion, in consultation with permitting agency.	Same as above, and: Utility managed onsite, clustered or centralized sewage treatment should be considered as an option if homeowners are unwilling or unable to upgrade systems and assume burden of demonstrating compliance	Stinson Beach, Sea Ranch, Georgetown Divide Public Utilities District

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V	R 5	Need for direct reuse (systems that irrigate, directly recharge a drinking water aquifer, or discharge fluids at surface or at depths less than minimum soil depth to restrictive horizon)	Denitrification and disinfection required. Chlorination is not an acceptable disinfection technology if disinfection by-products are of concern.	Waste Discharge Requirements issued to RME. Physical monitoring by regulator or RME required. Effluent sampling and/or ground water monitoring required.	Utility owned onsite, clustered or centralized sewage treatment should be considered as an option if homeowners are unwilling or unable to upgrade systems and assume burden of demonstrating compliance	
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1

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1 7.0 PERMITS

2 Permits are required prior to the construction, replacement, operation and repair
3 of any OWTS.

4 7.1 Onsite Wastewater Treatment System Installation Permits

5 The QLA shall require that Contractors installing or repairing OWTS have the
6 proper license to conduct business within their jurisdiction. The QLA will either
7 issue or deny the onsite wastewater treatment system installation permit within a
8 reasonable amount of time after the receipt of a completed application for all
9 standard or enhanced designs. The Permit shall be issued to the homeowner, the
10 contractor hired by the owner, the easement holder on which the system is to be
11 installed, or the utility that will own and manage the system. The approved onsite
12 sewage treatment installation permit will remain effective for a period of one
13 year, or as otherwise determined by the QLA, from the date of issuance for
14 construction of the system. The onsite wastewater treatment system installation
15 permit should not be transferable. If necessary, a renewal of an Onsite
16 Wastewater Treatment System installation permit may be granted to the original
17 applicant if the original permit has expired. The applicant should apply for a
18 renewal prior to the expiration date of the onsite wastewater treatment system
19 installation permit.

20 7.1.1 Application Requirements – New Installations

21 The application for an Onsite Wastewater Treatment System permit shall include
22 an approved Site Evaluation Report (SER) specified in Section 12.1 prepared by a
23 qualified designer as specified in Section 10.2.

24 7.1.2 Application Requirements – Existing Systems, Replacements and Repairs

25 The application for a repair Onsite Wastewater Treatment System permit shall
26 include the information deemed necessary by the QLA. Application requirements
27 shall be identified in the local ordinance.

28 7.2 Operating Permits

29 A valid Operating Permit shall be required for all OWTS. Operating permits are
30 not transferable. An operating permit shall not be issued until such time that the
31 system is in compliance with the terms and conditions of the onsite wastewater
32 treatment system installation permit.

33 7.2.1 Standard Operating Permit (SOP)

34 A Standard Operating Permit (SOP) shall be issued by the QLA upon final
35 approval of the completed Standard Onsite Wastewater Treatment System in
36 Management Program Levels 1 and 2. The issuing agency shall issue an SOP
37 when the system is in compliance with the requirements specified in the onsite
38 wastewater treatment system installation permit. The agency shall issue an
39 operating permit at such time that the as-built plans and the operations and

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40 maintenance instructions are submitted and the final inspection and testing of the
41 system has been performed.

42 **7.2.2 Renewable Operating Permit (ROP)**

43 A Renewable Operating Permit (ROP) shall be issued by the QLA upon final
44 approval of the completed Enhanced Onsite Wastewater Treatment System in
45 Management Program Level 2-5 and for Standard Onsite Wastewater Treatment
46 Systems in Management Program Level 3-5. The applicant shall also provide
47 evidence, when required, that a maintenance agreement has been established with
48 a qualified public or private entity. The issuing agency shall issue an ROP when
49 the system is in compliance with the requirements specified in the onsite
50 wastewater treatment system installation permit. The issuing agency shall issue a
51 renewable operating permit at such time that the as-built plans and the operations
52 and maintenance instructions are submitted, the final inspection and testing of the
53 system has been performed, and when required a satisfactory maintenance
54 agreement has been obtained.

55 7.2.2.1 Renewal Frequency

56 The maximum length of time a Renewable Operating Permit shall remain in effect
57 is three years. The local implementing agency may determine a shorter length of
58 time that the Renewable Operating Permit shall remain in effect based on one
59 or more of the following considerations:

- 60 a. System complexity
- 61 b. Public health concerns
- 62 c. Environmental concerns

63 7.2.2.2 Renewal Procedure

64 The QLA shall renew the ROP after a satisfactory compliance inspection. QLA
65 personnel or representative officers may conduct compliance inspections as
66 determined by the QLA. The QLA shall require any corrections necessary to
67 bring the OWTS into compliance with all applicable regulations. Failure to make
68 the corrections within thirty days after written notification or posting of a
69 Correction Notice at the site shall result in a violation of the permit process and
70 the issuance of a Violation Notice by the issuing agency.

71 **7.2.3 Change of Ownership**

72 The QLA personnel or representative officers at all changes in ownership shall
73 conduct an inspection of the OWTS in accordance with 11.4.3. The QLA shall
74 require any corrections necessary to bring the OWTS into compliance with all
75 applicable regulations. Permits shall only be renewed upon receipt of satisfactory
76 evidence that the corrections have been made. Failure to make the corrections
77 within thirty days after written notification or posting of a Correction Notice at
78 the site shall result in a violation of the permit process and the issuance of a
79 Violation Notice by the issuing agency.

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8.0 Maintenance, Operation and Monitoring

Onsite wastewater treatment systems require Maintenance, Operation and Monitoring (MO&M) consistent with the applicable Management Program Level and the type of system.

8.1 QLA Responsibilities

The QLA shall ensure that onsite wastewater treatment systems are maintained, operated and monitored in accordance with the Management Program Level in effect.

8.1.1 Maintenance, operation and monitoring assurance

The QLA may either establish it's own protocol to be administered by the agency personnel or representative officers or may require the owner of the OWTS to use one or more of the following methods to take effect within 12 months of implementation of the state regulations by the QLA:

- a. owners may manage their own system and provide to the QLA routine monitoring and evaluation reports per requirements set forth by the QLA;
- b. obtaining a Renewable Operating Permit (in addition to the initial onsite wastewater treatment system installation permit), with the maintenance requirements stipulated by the management level in effect for the OWTS;
- c. obtaining the services of a management entity⁸ to provide MO&M assurance.

8.1.2 Registration of Service Providers

- a. Permitting agencies shall establish a method to register service providers that includes at a minimum the following:
- b. Verification that the service provider has the demonstrated knowledge and ability to perform services on the system(s) or device(s) by possessing certification from the manufacturer or by some other method satisfactory to the QLA.
- c. Reciprocity: Service providers with a valid registration with a local QLA shall be deemed eligible for registration in all jurisdictions. The local QLA may impose a local registration fee to cover administrative costs of the registration program.
- d. Maintain a listing of registered service providers that shall be made available upon request.

8.1.3 Record Keeping

- a. The QLA shall establish a record keeping and tracking system to verify compliance with maintenance, operation and monitoring to include the following:

⁸ Examples of management entities include: cities & towns, public utility districts, water & sewer districts, special-use districts, and corporations and home-owner associations with demonstrated capacity to assure long-term management.

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- 40 b. System location including assessors' parcel number or some other
- 41 unique identification number established by the QLA.
- 42 c. Date of installation
- 43 d. Type of system
- 44 e. Owner of record
- 45 f. Maintenance, operation and monitoring requirements
- 46 g. Identification of service provider
- 47 h. Results of maintenance and monitoring reports

48 **8.2 Owners Responsibility**

49 Owners are responsible for proper operation and maintenance of their onsite
50 wastewater treatment system. Owners shall be responsible for the following:

- 51 a. Maintain their system to prevent surfacing of effluent. In the event
- 52 of surfacing effluent, the owner shall minimize use or cease
- 53 operation of the system until it is repaired. Until the system is
- 54 repaired, the owner shall prevent effluent from surfacing by having
- 55 the system continuously pumped and the waste disposed at an
- 56 approved septage handling facility until the system is repaired⁹.
- 57 b. Have their septic tank inspected and the scum and solid levels
- 58 measured at the prescribed frequency indicated on the operating
- 59 permit. Owners shall have their tanks pumped when the clear
- 60 liquid zone separation in the tank is less than 2/3 of the total depth
- 61 in the tank.
- 62 c. Owners shall preserve and protect their onsite wastewater
- 63 treatment system. Owners shall not place buildings, livestock,
- 64 impervious materials, equipment, parking areas, or driveways over
- 65 the treatment areas¹⁰. Surface and subsurface soils in the treatment
- 66 areas shall not be removed, ripped, contoured or compacted. The
- 67 treatment areas may be tilled with a light duty, hand operated
- 68 garden tiller (no tractor operated implements), hand graded and
- 69 covered with lawn or non-invasive plants. The treatment areas
- 70 may be irrigated with portable sprinklers or landscape irrigation.
- 71 Flood irrigation and surface drainage shall not encroach on or
- 72 impact the septic tank, treatment areas or other components of the
- 73 system. Building foundation and roof drains shall be located a safe
- 74 distance and directed away from the treatment areas.
- 75 d. The owner shall control the wastewater discharge to the system
- 76 within the design quantity and strength parameters. The owner
- 77 shall not introduce strong bases, acids, chlorine, formaldehyde,
- 78 thinners, solvents or other atypical wastewater components to their

⁹ The system shall be pumped by a certified liquid waste hauler as defined in this ordinance. The system shall be repaired under permit issued by the local agency. All repairs and improvements shall be performed by a qualified licensed contractor as defined in this ordinance.

¹⁰ Treatment areas include the primary and reserve areas

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- 79 systems other than in minute concentrations contained in mild
80 cleansers and chemicals used in normal household cleaning. The
81 owner should refrain from using septic tank additives and soil
82 amenders without first consulting with the system designer or QLA
83 as to any possible adverse affects to the system and ground water
84 quality.
- 85 e. The owner shall operate and maintain their system in conformance
86 with the conditions prescribed in the operating permit and the
87 Designer's and Installer's recommendations.

8.3 System Designer Responsibilities:

88 The onsite wastewater system designer must instruct, or assure that instruction is
89 provided to, the owner of the residence or facility regarding proper operation of
90 the entire onsite wastewater treatment system. This instruction should emphasize
91 operating and maintaining the entire onsite wastewater system within the
92 parameter ranges for which it is designed.
93

8.4 User's Manual - All Systems

- 94
- 95 a. A user's manual for the treatment system must be developed and / or
96 provided by the system designer and/or manufacturer. These materials
97 must contain the following, at a minimum:
- 98 i. Diagrams of the system components including schematic flow
99 diagrams.
 - 100 ii. Maintenance frequency of system components.
 - 101 iii. Explanation of general system function, operational expectations,
102 owner responsibility, etc.
 - 103 iv. Names and telephone numbers of the system designer, local health
104 authority, component manufacturer, supplier/installer, and/or the
105 management entity to be contacted in the event of a failure.
 - 106 v. Information on "Trouble-shooting" common operational problems
107 that might occur. This information should be as detailed and
108 complete as needed to assist the system owner to make accurate
109 decisions about when and how to attempt corrections of
110 operational problems, and when to call for professional assistance.

8.4.1 Enhanced Treatment System Operations and Maintenance Manual

111 For enhanced treatment systems/devices, a complete maintenance and operation
112 document must be developed and provided by the designer. This document must
113 be made available to the system owner and the service provider. This document
114 must include all the appropriate items mentioned below, plus any additional
115 general and site-specific information. A copy of this document must also be
116 provided to the QLA, prior to the issuance of the onsite wastewater treatment
117 system operating permit. The operation and maintenance manual(s) must be
118 written so as to be easily understood by the owner and O&M service provider and
119 include as a minimum:
120

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- 121 a. a maintenance schedule for all critical components;
- 122 b. requirements and recommended procedures for periodic removal,
- 123 treatment and disposal of residuals from the system;
- 124 c. a detailed procedure for visually evaluating function of system
- 125 components;
- 126 d. a description of olfactory and visual techniques for confirming
- 127 correct process parameters (i.e. mixed liquor concentration and
- 128 biomass health) and system performance;
- 129 e. a recommended method for collecting and transporting effluent
- 130 samples;
- 131 f. the effluent quality parameters expected to be produced by a
- 132 properly operating system as established through analytical
- 133 methods, and
- 134 g. safety concerns that may need to be addressed.

135 **8.5 Proprietary System/Device Manufacturer Responsibilities:**

136 The authorized representative for the Proprietary System/Device must instruct, or
137 assure that instruction regarding proper operation of the Proprietary
138 System/Device is provided to the owner of the residence or facility, the designer,
139 and the QLA.

140 **8.5.1 Operations and Maintenance Manual**

141 The authorized Proprietary System/Device representative must provide a
142 manufacturer-prepared manual to the wastewater system designer, the system
143 owner and, if requested, to the local QLA at the time of system installation. The
144 information in this manual(s) must be presented in a manner which can be easily
145 understood by the owner and include, at a minimum:

- 146 a. a parts list which includes all primary functional components,
- 147 equipment manufacturer(s) and model designations;
- 148 b. a statement of product performance demonstrated during testing;
- 149 c. a statement regarding the use of pre-treatment with the Proprietary
- 150 System/Device, including whether or not a pre-treatment tank was
- 151 used during product testing and any application-specific
- 152 recommendations for using pre-treatment tanks.
- 153 d. a functional description of how the process functions, including
- 154 diagrams which illustrate basic system design and flow-path;
- 155 e. a clear statement which provides examples of the types and
- 156 strength of waste that can be effectively treated by the system;
- 157 f. a list of household substances that, if discharged into to the system
- 158 could adversely affect system performance or groundwater quality;
- 159 g. comprehensive operating instructions that clearly delineate proper
- 160 function of the system, operating and maintenance responsibilities
- 161 of the owner and authorized service personnel, and service-related
- 162 obligations of the manufacturer(s);
- 163 h. requirements for periodic removal of residuals from the system;

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- 164 i. a course of action to be taken if the system is subjected to electrical
- 165 power interruption that could effect system performance
- 166 j. a course of action to be applied if the system will be used
- 167 intermittently or if extended periods of non-use are anticipated;
- 168 k. detailed methods and criteria for identifying system malfunction or
- 169 problems;
- 170 l. a statement instructing the owner to reference the Proprietary
- 171 System/Device data plate in the event that a problem is identified
- 172 or service obligations related to the Proprietary System/Device
- 173 needs to be met by the manufacturer;
- 174 m. the name and telephone number of a service representative to be
- 175 contacted in the event that the system experiences a problem;
- 176 n. a description of the initial and extended service policies;
- 177 o. electrical schematics for the system if not appearing as a
- 178 permanent attachment on the system; and,
- 179 p. emergency contact numbers for service providers, pumpers and
- 180 local health.

181 **8.6 Service Provider Responsibilities**

- 182 a. Register with the local QLA in a manner prescribed by the agency.
- 183 b. Provide maintenance and monitoring reports for systems they are
- 184 servicing to the QLA consistent with the terms of the renewable
- 185 operating permit. Reports shall be provided to the QLA no later than
- 186 90 days following the required service.
- 187 c. Report system malfunctions that result in _____ within
- 188 ____ hours/days to the QLA.
- 189 d. Maintain certification and training for operation and maintenance of
- 190 systems as determined by the manufacturer, proprietary device
- 191 manufacturer and the local agency.

192 **8.7 Service Contract**

193 A Service Contract for on-going service and maintenance of the entire wastewater
194 system is required for all OWTS in Management Program Level 3. The service
195 and maintenance requirements may be modified by the local QLA, but as a
196 minimum continued service and maintenance must be addressed for the life of the
197 system by an operation plan. OWTSs in Management Program Level 4 and 5
198 shall be deemed to comply with this section by nature of the management
199 oversight provided by the utility.

200 **8.8 Monitoring Easements**

201 The QLA may require the owner to dedicate easements for inspections,
202 maintenance and future expansion and replacement area for OWTS.

203 **8.9 Groundwater Quality Monitoring**

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204 When there is reasonable cause to suspect that an owner's OWTS is contributing
205 to groundwater quality degradation or contamination, the QLA may require
206 either:

- 207 a. the owner provide an easement to the agency to install and monitor
208 groundwater sampling wells on their parcel,
- 209 b. the owner install and sample monitoring wells at their own
210 expense. Water samples collected by the owner shall be given to
211 the QLA or to a certified water testing lab for analysis with the
212 results sent to the QLA. The owner shall follow the water
213 sampling procedures as directed by the QLA or water testing lab.

214 **9.0 Enhanced Treatment System Warranty Requirements**

215 All enhanced wastewater treatment systems and enhanced treatment system
216 components shall have a warranty provided. It shall be the responsibility of the
217 system designer to ensure that warranties are obtained. The system designer may
218 warranty the entire system or may secure part or all of the warranty from the
219 system component manufacturer and system installer. In all cases, the entire
220 treatment system shall be warranted through the designer, manufacturer, installer
221 or some combination acceptable to the QLA. The warranty shall be for a period
222 not less than five years in duration.

223 **9.1 Adoption and use.**

224 Warranted individual wastewater treatment systems meeting the requirements
225 under this section may be employed unless specifically prohibited in local
226 ordinance.

227 **9.2 Submittal requirements**

228 The designer or manufacturer must submit satisfactory information to the QLA as
229 follows:

- 230 a. how the system must be used and installed, how it is expected to
231 perform under those conditions, the anticipated design life, and the
232 period to be warranted;
- 233 b. pertinent existing data, including in-field testing data, that the
234 system will perform as expected;
- 235 c. a commonly accepted financial assurance document or
236 documentation of the designer's or manufacturer's financial ability
237 to cover potential replacement and upgrades necessitated by failure
238 of the system to meet the performance expectations for the
239 duration of the warranty period;
- 240 d. a full warranty effective for the designated warranty period, which
241 must be at least five years from the time of installation, covering
242 design, labor, and material costs to remedy failure to meet
243 performance expectations for systems used and installed in
244 accordance with the designer's or manufacturer's instructions; and

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- 245 e. additional information requested by the QLA to ensure compliance
246 with this part.

247 **9.3 Allowable designer, manufacturer, installer conditions for warranty.**¹¹

248 **9.3.1 Enhanced Onsite Wastewater Treatment Systems**

249 Designer, manufacturer and installers of treatment systems and system
250 components may set exclusions, limitations and conditions on warranties. These
251 shall be made available in writing prior to entering into a contract for installation
252 to the system owner and the QLA. Exclusions, limitations and conditions voiding
253 the warranty must be specified by the designer or manufacturer and are limited to
254 following reasons unless otherwise stipulated by the QLA:

- 255 a. Failure of the System Owner to maintain an active service contract
256 with a service provider who is trained and certified as required by
257 the designer and/or manufacturer and registered with the QLA.
- 258 b. System or component failure is determined to have occurred as a
259 result of improper operation or maintenance of any component of
260 the System.
- 261 c. Failure is a result of introduction of toxic contaminants not
262 normally present in the area water supply or derived from normal
263 human wastes or gray water.
- 264 d. Discharge of any garbage grinders, grinder pumps, or vacuum
265 pumps into the system.
- 266 e. Construction, installation, and/or start up of the system are not
267 done by a licensed and/or certified installer.
- 268 f. Any materials, parts, or equipment used in the construction or
269 maintenance of the system do not conform to the plans and
270 specifications or have not been approved by the system designer or
271 manufacturer.
- 272 g. Flows exceed the design capacity of the system.
- 273 h. The system is not operated and maintained according to the
274 Operation and Maintenance Manual provided by designer and/or
275 the manufacturer.
- 276 i. Unauthorized changes in system settings or operation of pumps,
277 metering devices, effluent distribution
- 278 j. The System Owner changes components or other parts that can
279 affect the integrity and proper functioning of the system without
280 consultation with, and the concurrence of, a System service
281 provider trained and certified by the designer and/or manufacturer.
- 282 k. Failure of the System Owner to allow the designer and/or
283 manufacturer, or any agent or service provider designated by the
284 designer and/or manufacturer to enter the System Owner's property
285 where the System is located at any reasonable time, to inspect,

¹¹ Designer, manufacturer, and installer include duly authorized persons acting on behalf of the designer, manufacturer or installer.

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286 sample, test and monitor System for the purpose of assuring proper
287 operation and warranty compliance.

288 **9.3.2 Enhanced Treatment Systems with Performance Requirements**

289 Designer, manufacturer and installers of treatment systems and system
290 components that must meet performance requirements may set 'influent
291 constituent standards' to limit their liability as it relates to system performance by
292 specifying influent quality and quantity limits for constituents of concern. The
293 influent quality and quantity standards specified may include limits for the
294 following:

- 295 a. Hydraulic load
- 296 b. BOD
- 297 c. TSS
- 298 d. TN
- 299 e. pH
- 300 f. Total Coliform
- 301 g. Alkalinity
- 302 h. Fats, Oil and Grease (FOGs)
- 303 i. Temperature
- 304 j. Toxic/Chemical Contaminants

305 **9.4 Administrative requirements**

- 306 1. Individual wastewater treatment systems meeting the requirements of section 9.3
307 shall be listed as an approved enhanced treatment system by the QLA.
- 308 2. Changes made to a warranted individual wastewater treatment system that are not
309 included in the original warranty submittal require resubmittal to the QLA.
- 310 3. The QLA may remove a warranted individual wastewater treatment system from
311 consideration as an approved enhanced treatment system upon a finding of fraud,
312 system failure, failure to meet warranty conditions, or failure to meet the
313 requirements of this part or other matters that fail to meet with the intent and
314 purpose of this chapter. Removal of a technology or design does not alter or end
315 warranty obligations for systems installed under the previously approved
316 warranty.
- 317 4. A copy of the warranty must be provided to the owner and included with the
318 design records.

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1 10.0 License, Certification, Training and Education

2 Any person who is responsible for the investigation, design, installation, inspection and
3 regulation of onsite wastewater systems is subject to the requirements contained in this
4 section.

5 10.1.1 Qualifications

6 The following professions are authorized to perform the functions listed under Table 10-
7 1.

8 10.1.1.1 Table 10-1

Occupation	Soil investigation	Design	Installation	Inspection	Regulation
Civil Engineer	X	X		X	X
Geologist	X	X		X	
REHS	X	X		X	X
Soil Scientist	X				
A1, B1, C42, C36 Contractor			X		

9

10 10.1.2 Experience

11 Licensed or registered persons shall work within their field of expertise and
12 demonstrate reasonable knowledge and experience in onsite wastewater systems.

13 10.1.3 Responsibility for Design

14 All soils evaluations and designs shall be stamped and signed by the licensed or
15 registered person responsible for the work. Unregistered individuals may perform
16 the above work under the supervision¹² of the registered individual in control of
17 the work.

18 10.1.4 Responsibility for Installation

19 A Contractor, the Contractor's responsible managing employee or subcontractor
20 working directly for the Contractor of Record, shall perform all installations and
21 repairs requiring the work of a licensed Contractor. The installation shall be the
22 sole responsibility of the Contractor of Record.

23 10.2 Education and Training

24 Persons involved in the design and installation of OWTS shall have received
25 sufficient training and education to be competent in performance of their work.
26 Civil Engineers, Environmental Health Specialists, and Engineering Geologist,
27 shall be registered in the State of California. Soil Scientists are required to show
28 proof of registration from any State in the U.S. Any person qualified under
29 section 10.1 that is responsible for soils evaluations, design, plan review and

¹² Supervision shall mean the direction and responsibility for a subordinate's work by a registered professional. A subordinate can perform office and field work outside the physical presence of the registered supervisor in control of the work.

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1 inspection of OWTS shall have completed a total of 9 college semester units, with
2 3 units each from the following group of courses:

- 3 a. 3 semester units of soil science, soil morphology or soil mechanics,
- 4 b. 3 semester units of fluid mechanics or hydraulics,
- 5 c. 3 semester units of biology, microbiology or chemistry.

6 All persons actively engaged in and responsible for work related to the design,
7 installation, inspection and regulation of OWTS shall have completed a minimum
8 of 6 months in-service training under the direct supervision of qualified
9 professional working in the OWTS profession. It is recommended that
10 professionals earn at least 3 units of continuing education every 2 years in related
11 subjects, workshops and seminars in OWTS technology.

12 **10.3 Certification**

13 Persons who are actively engaged in the design, installation, repair, inspection,
14 maintenance, and regulation of OWTS shall have completed a State-recognized
15 training and/or testing program and obtained a certificate in onsite wastewater
16 systems. Such persons shall submit a copy of certification to be kept on record
17 with the State Department of Consumer Affairs. Permitting agencies responsible
18 for the regulation of OWTS systems shall require that OWTS professionals
19 working in their jurisdiction provide proof of certification. Individuals or entities
20 who are currently engaged in work in the OWTS profession in California will be
21 required to obtain a Certificate of training from a State recognized training and/
22 or testing program within two years of establishment of a statewide OWTS
23 certification program.

24 **10.4 Violation**

25 It shall be a misdemeanor for persons who misrepresent, ignore or willfully
26 violate any portion of section 10.0; those who do may be subject to fines or legal
27 action as set forth by the QLA.

28 **11.0 Parcel Development and Requirements**

29 This section addresses existing undeveloped parcels, developed parcels with
30 OWTS systems, developed parcels requiring modifications to the existing OWTS
31 and creation of new parcels for commercial and residential use.

32 **11.1 Variance/waiver**

33 Developed and undeveloped parcels shall comply with the requirements of this
34 Regulation whenever feasible. Portions of this Regulation may be waived by the
35 QLA to provide for reduced setbacks or incorporate adjacent lands through
36 recorded easements or allow for use of enhanced treatment systems to mitigate
37 any of the following conditions:

- 38 a. Insufficient parcel size or
- 39 b. Insufficient effective soil depth or
- 40 c. Insufficient ground or surface water clearance

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1 The waiver shall be granted only if QLA makes a finding that the proposed
2 system does not degrade water quality, impact beneficial uses or create a health
3 hazard or nuisance condition

4 **11.1.1 Repairs to Failing Systems**

5 When a failed system is repaired, no increased usage or expansion to the system
6 will be permitted unless the system can be upgraded and sized in accordance with
7 the applicable sections in this Ordinance.

8 **11.1.2 Modifications to existing systems**

9 Expansion or modifications to the existing system to allow for increased usage
10 shall conform to the Technical Standards of this document. Waiver of these
11 standards to expand or modify an existing system for increased usage is not
12 permitted.

13 **11.1.3 Off-Parcel Systems**

14 When additional land is required outside the boundaries of the parcel where
15 sewage is to be generated, an easement binding to the land shall be executed and
16 recorded describing the location, dimension and components of the system that
17 cross property lines and which lies in part or wholly on land different from the
18 parcel from which the wastewater generates.

19 The QLA on case-by-case basis may waive portions of these regulations to
20 accommodate repairs.

21 **11.2 New land division**

22 **11.2.1 Residential and Subdivisions**

23 Any residential land division including single and multi-family parcels that will
24 use OWTS shall be subject to the following criteria for approval:

- 25 a. Documented site and soils evaluation by a qualified consultant or
26 the QLA.
- 27 b. Any additional evaluation or testing deemed necessary to satisfy
28 the standards set forth in these regulations.
- 29 c. A plot or site plan prepared by the consultant performing the site
30 and soils evaluation noting the dimension and location of the
31 proposed waste treatment area. The soil treatment area shall note
32 the size and dimension of the primary treatment and expansion
33 fields. The site plans shall be recorded with the parcel or
34 subdivision map. A copy of the site plan and recommended type of
35 OWTS shall be placed on file with the QLA.
- 36 d. Each parcel within the proposed land division shall have a
37 designated sewage treatment area. The location of the treatment
38 area shall be determined from evaluation of the site and soil
39 characteristics, and absorption capacity of the soil in gallons per
40 day, per square foot. The treatment areas for all parcels shall be
41 sufficient to accommodate a minimum daily flow of 300 gallons
42 and the recommended type of treatment system.

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1 11.2.2 Commercial Land Divisions

2 The creation of parcels for commercial use shall conform to Section 11.3.1 except
3 that the reserved treatment area shall be sized according to the estimated strength
4 and volume of waste flow generated by the commercial facility and shall be sized
5 to accommodate a minimum of 200% expansion. The use of OWTS for any
6 waste discharge other than sewage and gray water shall not be allowed without
7 Waste Discharge Requirements issued by the RWQCB or an Underground
8 Injection Control (UIC) permit from the U.S. Environmental Protection Agency.

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1 **12.0 Evaluation Procedures**

2 The purpose of the site and soils evaluation is to assess the suitability of a given
3 site and location to be used for wastewater treatment

4 **12.1 Site Evaluation Report (SER)**

5 A Site Evaluation Report (SER) is required for every individual parcel proposing
6 use of an OWTS.

7 **12.2 SER Minimum Requirements**

8 The SER shall include information regarding soil conditions, characteristics and
9 estimated permeability, depth of zones of saturation, depth to bedrock,
10 surrounding geographic and topographic features, direction of ground contour and
11 % slope, distance to drainages, water bodies and potential for flooding, location of
12 existing or proposed roads, structures, utilities, domestic water supplies, wells and
13 ponds, existing wastewater treatment systems and facilities, relevant geographic
14 and topographic information and drainage features. Site limitations and special
15 conditions shall be listed in the SER. The QLA shall establish the specific
16 information and format required for a complete SER.

17 **12.2.1 Site Limitations**

18 During the preparation of the SER, the consultant shall address the direction
19 treated water will travel once it enters the soil treatment area. Additional work
20 may include a geotechnical report and a site capacity study (SCC). Special
21 designs and site conditions are required for systems on slopes over 30 percent.
22

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1 12.2.1.1 Table 12-1(Horizontal Setbacks)

MINIMUM REQUIRED HORIZONTAL SETBACKS – STANDARD SYSTEMS				
	Septic Tank & Other Treatment Unit	Soil Treatment System		
		Primary Effluent	Secondary Effluent	
Public Water Supply Well	100'	150'		
Water Well	100'	100'		100'
Springs or Seeps				
Upgradient	50'	50'		50'
Downgradient	50'	100'		50'
Flood Plain (10 year event)	50'	100'		100'
Lava Outcropping	50'	100'		50'
Surface Waters				
Perennial Streams	50'	100'		100'
Intermittent Streams	50'	100'		50'
Ephemeral Streams	50'	25'		25'
Lakes & Reservoirs	50'	200'		100'
Wetlands	50'	100'		100'
Ocean – mean high water mark	50'	100'		100'
Groundwater Interceptors				
Upgradient	20'	20'		20'
Downgradient	25'	75'		25'
Irrigation Canal				
Lined	25'	50'		25'
Unlined				
		Upgradient		50'
		Downgradient		50'
Storm Drainage Pipe ²	5'	25'		5'
Cutbanks				
Intersect effective soil depth within 48" of ground surface	25'	4X Height		4X Height
Effective soil depth not intercepted	10'	4X Height		4X Height
Fill	10'	4X Height		4X Height
Escarpment				
Intersect effective soil depth within 48" ground surface	25'	75'		50'
Effective soil depth not intercepted	10'	50'		25'
Roadway Setback	20'	20'		20'
Property Line	5'	5'		5'
Swimming Pool	5'	5'		5'
Water Pipe				
Main Line	10'	10'		10'
Service Line	5'	10'		5'
Driveway or Parking Area				
Perc Rate < 30 MPI	0'	0'		0'
Perc Rate > 30 MPI	0'	Not Allowed		0'
Foundation				
Footing	5'	5'		5'
Basement	5'	25'		25'
Absorption Trench	1'	10'		6'
Footnotes:				
	1 If domestic water supply, setback shall be 100'			
	2 Watertight			

2
3
4

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12.3 Soil evaluation

12.3.1 Procedure

The number of soil observations shall be determined by the QLA and the professional judgment of the individual conducting the site evaluation. Soil observations shall be performed in an exposed pit. Underground utilities must be located before soil observations are undertaken. Required safety precautions¹³ must be taken before entering soil pits. Soil observations shall be conducted prior to any required hydraulic tests to determine whether the soils are suitable and to determine if and at what depth hydraulic tests are warranted. The depth of the soil profile test pits shall be to the seasonally saturated layer, the bedrock, or three feet below the proposed depth of the system, whichever is less.

a. Soil observations. The soil profile pit shall be observed and described measuring the thickness of each major horizon and depth relative to the ground surface. The soil description shall be based on the USDA soils definition of textural classes, structure, color, chroma, size and percentages of roots, pores, rocks, clay skins and redoximorphic features and the USDA soils chart¹⁴ for estimating soil permeability. The soil profile description shall identify soil characteristics that may enhance or limit treatment of wastewater.

b. Soil description. Each soil observed at the proposed soil treatment area shall be evaluated under adequate light conditions with the soil in a moist state.

(1) The depth of each soil horizon measured from the ground surface. Soil horizons are differentiated by changes in soil texture, soil color, redoximorphic features, bedrock, consistence, and any other characteristic that may affect water percolation or treatment of effluent.

(2) The soil matrix and mottled color described per horizon by the Munsell Soil Color Charts, 1992 Revised Edition or equivalent, which is incorporated by reference. This document is available from Macbeth Division, Kollmorgen Instruments Corporation, 405 Little Britain Road, New Windsor, New York 12553.

(3) A description of the soil texture and consistence using the United States Department of Agriculture (USDA) soil classification system as specified in the Soil Survey Manual, Agricultural Handbook No. 18 (October 1993), which is incorporated by reference. The manual is issued by the United States Department of Agriculture and is available through the Superintendent of Documents, United States Government Printing Office, Washington, D.C.

(4) Depth to the bedrock.

(5) Depth to the seasonally saturated soil for new construction or replacement as determined by redoximorphic features.

(6) Any other soil characteristic that may need to be described to properly design a system such as hardpans or restrictive layers must be classified in

¹³ See CALOSHA requirements for entering open excavations

¹⁴ Soil texture based on USDA soil triangle

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1 accordance with chapter 3 of the Soil Survey Manual, Agricultural Handbook No.
2 18, which is incorporated by reference in sub item (3).

3 **12.3.2 Classification**

4 Soils shall be classified using the U.S. Department of Agriculture soils
5 classification system for soil name, type and particle size limits. The soil type
6 shall be classified in the field by the consultant and/or representative officers of
7 the QLA having jurisdiction for OWTS. Soil classification may include
8 supplemental laboratory procedures along with the field work. Where the soil
9 permeability or infiltration rate cannot be reasonably estimated, additional testing
10 procedures may be required by the QLA. These tests may include traditional
11 percolation testing and other methods approved by the QLA.

12 **12.3.3 Evaluation of Groundwater**

13 A static water table that lasts longer than three weeks in any given season shall be
14 considered groundwater. The water table shall be evaluated using peizometers
15 constructed in accordance with _____.

16 12.3.3.2 Data and Information

17 The groundwater evaluation shall include an assessment of the hydraulic gradient
18 and direction of flow of the groundwater. The collected data shall be reviewed
19 by the consultant and QLA to determine if wastewater can be applied without
20 contamination of the groundwater or creating significant groundwater mounding.

21 12.3.3.3 Monitoring

22 Groundwater monitoring shall be performed at the time of year when the
23 maximum groundwater elevation is expected to occur. The monitoring shall be
24 performed during the normal wet season after 80% of the expected average
25 rainfall has occurred. Monitoring shall be performed 48 to 72 hours after a
26 rainfall. In areas that experience high groundwater due to flood irrigation,
27 monitoring shall be done when flooding is at its maximum.

28 **12.3.4 Estimating Soil Permeability**

29 The estimated soil permeability shall be based on the USDA soil classification
30 chart for soil structure and texture. Hydraulic testing may be required to provide
31 additional data for the design of absorption fields.

32 **12.3.5 Hydraulic Tests**

33 Hydraulic tests shall be required for the following:

- 34 a. Soils with an estimated clay fraction greater than 30% as
35 determined from the USDA soil chart.
- 36 b. For any proposed system that will serve more than one single-
37 family residence.
- 38 c. Any site where in the opinion of the consultant or the QLA, the
39 soil permeability is questionable.
- 40 d. The hydraulic tests shall either be a percolation test, infiltration
41 test, or absorption test, as determined by the QLA. The type of test
42 depends on the type and size of soil absorption system needed.

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1 **13.0 Design and Performance Parameters**

2 **13.1 Minimum discharge standards**

3 Onsite Wastewater Treatment Systems shall be designed to meet the minimum
4 treatment standards in table 13-1:

5 Table 13-1

Predominant soil below soil treatment system bottom	Min. Soil (ft) below soil treatment system	BOD5	TSS	NH3- N	N	TKN	PO4-P	Coliform CFU's
Sand / Loamy Sand	4	?	?	?	?	?	?	?
Sandy Loam	4							
Loam	3							
Silt / Silt Loam	3							
Sandy Clay Loam	2							
Clay Loam	2							
Silty Clay Loam	2							
Sandy Clay	2							
Silty Clay	2							
Clay	2							

6 * Values for BOD5, TSS, NH3-N, N, TKN, and PO4-P are discretionary and all are
7 to be determined by the QLA with concurrence from the Regional Water Quality Control
8 Board.

9 **13.2 Determining design flows**

10 Design flows shall be estimated by one of two methods:

- 11 1. by number of bedrooms for the proposed dwelling or by estimating the
12 treatment capacity of the soil treatment area/leachfield in gpd/sf. In sizing
13 by number of bedrooms the designer shall use a minimum of 120 gpd
14 /bedroom with low flow fixtures, otherwise 150 gpd/bedroom. The
15 minimum design flow for single-family residences shall be 300 gal/day.
- 16 2. The dwelling shall be designed not to exceed the maximum number of
17 fixture units or number of bedrooms that can be supported by the
18 estimated maximum daily flow in relation to the capacity of the soil
19 treatment area to treat and accept effluent.

20 **13.3 Replacement area**

21 There shall be a minimum of 100% reserve area set aside for replacement of the
22 soil treatment area.

23 **13.4 Determining design application rates (gpd/sf)**

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1 Soil application rates may be determined from either table 13-2 Table 13-3, or the
2 USDA soil chart. Empirical methods may be used in conjunction with the USDA
3 soil chart.

4 13.4.1 Table 13-2¹⁵

5 To determine the design application rate, read the table below in sequence
6 beginning at the top row and continue downward. Find the soil description that
7 best matches the predominant soil type found below the soil treatment system
8 (bottom of trench, bed, etc.). Use the corresponding application rate in the right
9 hand columns.

10

Table 13-2		
Soil Texture	Structure	Application rate Gallons per Day / SQ. Ft.
Gravelly coarse sand & coarser	loose or cemented	0.0
Clay, sandy or silty clay silt loam	weak or massive	0.0
	massive	0.0
Sandy clay loam, clay loam or silty clay loam	massive	0.0
Sandy clay, clay or silty clay	moderate to strong	0.2
Sandy clay loam, clay loam or silty clay loam	weak	0.2
Sandy clay loam, clay loam or silty clay loam	moderate to strong	0.4
Sandy loam, loam or silt loam	weak	0.4
Sandy loam, loam or silt loam	moderate to strong	0.6
Fine, very fine, loamy fine and very loamy fine sand	na	0.8
coarse, single grain sand	na	1.2

11

12 13.4.1.1 Empirical Methods Used to Determine Application Rates

13 Empirical Methods may include use of hydraulic tests. Enhanced treatment
14 systems shall be used for soils with rates faster than 5 minutes per inch and slower
15 than 60 minutes per inch. Soils with percolation rates greater than 240 minutes
16 per inch are generally considered to be unsuitable.

¹⁵ Compiled from Wisconsin Small Scale Waste Management Project and North Coast Regional Water Quality Control Board Guidelines.

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1 **13.4.2 Table 13.3 Suggested hydraulic and organic loading rates for sizing**
 2 **infiltration surfaces – USEPA Manual (modified)**

Texture	Structure		Typical Perc Rate min/inch	EPA 2002			
				Hydraulic loading rate (gal/ft ² /day)		Organic (lb BOD/Loading 1000ft ² /day)	
	Shape	Grade		BOD=150	BOD=30	BOD=150	BOD=30
Coarse sand, sand, loamy coarse sand, loamy sand	Single grain	Structureless	<0.1-5	0.8	1.6	1.00	0.40
Fine sand, very fine sand, loamy fine sand, loamy very fine sand	Single grain	Structureless	0.1-5	0.4	1.0	0.50	0.25
Coarse, sandy loam, sandy loam	Massive	Structureless		0.2	0.6	0.25	0.15
	Platy	Weak		0.2	0.5	0.25	0.13
		Moderate, strong					
	Prismatic, blocky, granular	Weak		0.4	0.7	0.50	0.18
Moderate, strong		6-15	0.6	1.0	0.75	0.25	
Fine sandy loam, very fine sandy loam	Massive	Structureless		0.2	0.5	0.25	0.13
	Platy	Weak, mod., strong					
		Weak		0.2	0.6	0.25	0.15
	Prismatic, blocky, granular	Moderate, strong		0.4	0.8	0.50	0.20
Massive		Structureless		0.2	0.5	0.25	0.13
Loam	Platy	Weak, mod., strong					
		Weak		0.4	0.6	0.50	0.15
	Prismatic, blocky, granular	Moderate, strong	16-30	0.6	0.8	0.75	0.20
		Massive	Structureless			0.2	0.00
Silt loam	Platy	Weak, mod., strong					
		Weak		0.4	0.6	0.50	0.15
	Prismatic, blocky, granular	Moderate, strong	31-45	0.6	0.8	0.75	0.20
		Massive	Structureless				
Sandy clay loam, clay loam, silty clay loam	Platy	Weak, mod., strong	46-60				
		Weak	46-60	0.2	0.3	0.25	0.08
	Prismatic, blocky, granular	Moderate, strong	46-60	0.4	0.6	0.50	0.15
		Massive	Structureless				
Sandy clay, clay, silty clay	Platy	Weak, mod., strong					
		Weak					
	Prismatic, blocky, granular	Moderate, strong	61-120	0.2	0.3	0.25	0.08

3
 4 Source: USEPA Onsite Wastewater Treatment Systems Manual – Adapted from Tyler,
 5 2000.

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1 **13.5 Adequate separation from groundwater**

2 **13.5.1 Determining Depth to Groundwater or Seasonal Water Table**

3 The level of groundwater or seasonal water table shall be determined in
4 accordance with Section 11.3.2.

5 **13.5.2 Minimum Groundwater Separation**

6 Table 13.4 shall be used to determine the minimum required separation from
7 groundwater. Groundwater shall be defined as the highest seasonal level of the
8 permanent water table in the soil. Perched water or seepage observed in the
9 profile hole shall be monitored to determine if the water is a localized
10 phenomenon or if the water reaches a standing level in the soil mantle.

11 **13.5.3 Table 13.4 Groundwater Separation**

12

Table 13-4		
Soil Texture	Structure	Separation/ft
Gravelly coarse sand & coarser	loose or cemented	Enhanced treatment required
Clay, sandy or silty clay silt loam	weak or massive	3
	massive	3
Sandy clay loam, clay loam or silty clay loam	massive	3
Sandy clay, clay or silty clay	moderate to strong	3
Sandy clay loam, clay loam or silty clay loam	weak	3
Sandy clay loam, clay loam or silty clay loam	moderate to strong	5
Sandy loam, loam or silt loam	weak	5
Sandy loam, loam or silt loam	moderate to strong	5
Fine, very fine, loamy fine and very loamy fine sand	na	5
coarse, single grain sand	na	40 or enhanced treatment

13

14 **13.5.4 Groundwater Mounding**

15 Groundwater mounding analysis shall be used to predict the highest rise of the
16 water table during the wet weather season taking into account background
17 groundwater conditions. The maximum acceptable short term rise of the water
18 table under treatment systems are as follows:

19 Systems with design flows of <1,500 gpd.....50% reduction in separation

20 Systems with design flows > 1,500 gpd.....Minimum of 24” separation

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13.5.5 Assessing Cumulative Impacts¹⁶

Assessing Cumulative Impacts: As required by the QLA or as specified in XXX of these regulations, cumulative impacts shall be evaluated in specific areas where such impacts on the waters of the state may occur. The owners, project proponents or operators of OWTS on such sites shall evaluate the conditions below to determine the existing or potential water quality degradation and public health problems which may result from groundwater mounding or the addition of nitrates and salts to groundwater and nutrient enrichment of surface water.

(a) General.

(1) In addition to meeting basic siting criteria, an analysis of cumulative impacts shall be required for all large capacity OWTS and for High Strength Wastes documented or expected to have an average effluent nitrogen content in excess of X lbs/day except as specified in section xxx.

(2) Other systems or geographic areas of local concern may be identified for cumulative impact analysis by the QLA or RWQCB.

(3) At a minimum, cumulative impact analysis shall include an assessment of groundwater mounding and nitrogen loading effects on groundwater water quality. In areas tributary to a 303(d) nitrogen impaired water body, cumulative impact analysis shall include an assessment of nitrogen loading effects on surface water quality.

(4) Other water quality constituents of local concern may be identified for analysis by the QLA or the RWQCB on a case-by-case basis or for specific local watershed areas. For these constituents, compliance criteria and methodology shall be established by the RWQCB.

The requirements of this section do not apply if the QLA determines that cumulative impacts are unlikely to occur due to specific site conditions or location.

The QLA and Regional Board shall determine the need for a cumulative impact assessment of OWTS for subdivisions, commercial development and for single systems with a design capacity greater than 1,500 gpd. The assessment shall include, but not be limited to, effects of groundwater mounding, nitrate loading and pathogen contamination. Analysis of cumulative impact effects shall be conducted using principles of groundwater hydraulics and shall reference the methodology and literature used in the analysis. The wastewater flow used for the analysis shall be as follows:

Individual Residential Homes.....120 gpd per bedroom (150 gpd per bedroom without low flow fixtures) or number of fixtures units
Multi-family and Non-Residential Systems.....System design flows

13.5.6 Nitrate Loading

Analysis of nitrate loading effects shall be based, at a minimum, on an estimate of an annual chemical - water mass balance. The minimum values used for the total

¹⁶ Portions of this section are reprinted from the North Coast Regional Water Quality Control Board Basin Plan for On-Site Wastewater Systems.

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1 nitrogen concentration of septic tank effluent shall be 40 mg/l as N (for average
2 flow conditions) for residential wastewater, or as determined from the sampling of
3 comparable system(s) or literature values. Onsite Wastewater Treatment Systems
4 shall not cause the groundwater nitrate concentration to exceed 10.0 mg/l N at any
5 source of drinking water on the property nor on any off-site potential drinking
6 water source.

7 **14.0 Onsite Wastewater Treatment Systems**

8 **14.1 Classification and description**

9 **14.1.1 Standard Onsite Wastewater Treatment System**

10 Standard onsite wastewater treatment systems consist of a septic tank and gravity
11 distribution of effluent to a soil treatment system consisting of leaching trenches,
12 fields, or beds. Effluent is discharged from the septic tank to the leachfield by
13 gravity.

14 14.1.1.1 Design

15 Standard system designs may be prepared by a certified design consultant or by
16 the QLA. The septic tank shall be sized in accordance with the design flow rate
17 (section 13.2). Soil treatment system sizing shall be determined using the
18 estimated application rate as defined in Section 13.5.

19 **14.1.2 Enhanced Onsite Wastewater Treatment Systems**

20 Enhanced treatment systems are defined as any system other than a standard
21 system. Enhanced treatment systems shall be used on parcels where site and soil
22 conditions will not support a standard system or where increased treatment is
23 needed. These systems are designed by professional consultants deemed eligible
24 under Section 10. Enhanced treatment systems are characterized as having
25 increased design and performance criteria. Unlike standard systems, enhanced
26 treatment systems vary in design and concept depending on the site and soil
27 conditions and are usually required in specific applications.

28 **14.1.3 Experimental Systems**

29 Experimental systems are individual or proprietary designs that are considered to
30 be new or recent innovations in the industry, or in use in other states and countries
31 but uncommon to California.

32 14.1.3.2 Approval of Experimental Systems

33 Experimental systems shall be reviewed on a case-by-case basis at the local level.
34 The use of experimental systems may be considered combined with a reasonable
35 testing and monitoring protocol subject to approval by the Regional Water
36 Quality Control Board having jurisdiction.

37 14.1.3.3 Testing and Monitoring

38 Experimental systems shall be tested and evaluated for a minimum of three years
39 and shall be limited in number of installations per year by agreement between the
40 RWQCB and the local permitting agencies. The RWQCB shall issue a
41 wastewater discharge permit during the testing period. The owner and the design

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1 consultant of the system shall be responsible for the performance, operation and
2 evaluation of the system for the first five years. Thereafter, the owner shall
3 assume responsibility to operate and monitor the system. The owner shall also
4 have a contingency system approved for replacement should the experimental
5 system fail to perform in accordance with the local ordinance and the wastewater
6 discharge permit requirements.

7 **14.1.4 Proprietary Systems**

8 Proprietary systems are components or units used for treatment of wastewater.
9 Proprietary systems may include filters, aeration units, treatment processes and
10 distribution equipment. Proprietary systems are distinguished as being
11 manufactured equipment that is patented and sold commercially through the
12 manufacturer and their distributors. The proposed application or use of the
13 proprietary system shall determine what classification requirements govern its
14 use.

15 **14.2 Final effluent handling**

16 **14.2.1 Surface Treatment**

17 Treated effluent can either be applied to land or discharged to surface water.

18 14.2.1.4 Surface Water Discharge

19 Onsite Wastewater Treatment Systems designed for surface water discharge of
20 effluent require that a National Pollutant Discharge Elimination System (NPDES)
21 Permit be obtained from the RWQCB with jurisdiction. (Comment: An NPDES
22 permit for a small system is extremely difficult to obtain and is strongly
23 discouraged due to CEQA constraints and cost.)

24 14.2.1.5 Land Application

- 25 a. Use of treated effluent for irrigation is allowed when it can be
26 applied safely and effectively and when it can meet state
27 wastewater discharge requirements contained in Title 22
28 reclamation regulations.
- 29 b. Land application subject to storm water runoff requires
30 disinfection to a median 23 MPN/100 ML total coliform (240 max)
31 (California Department of Health Services).
- 32 c. For applications requiring disinfection, Title 22 requires an
33 engineering report, redundancy features, and daily coliform
34 monitoring.
- 35 d. Wastewater used for crop irrigation for non-milking animals (with
36 no storm water runoff) requires secondary undisinfecting effluent.

37 **14.2.2 Subsurface Treatment**

38 Approved methods of subsurface treatment of effluent include leaching trenches,
39 beds, sub-surface drip dispersal (SDD), and seepage pits.

40 **14.2.3 Evapotranspiration and Wetland Systems**

41 Evapotranspiration systems are shallow lined holding ponds with large exposed
42 surface areas. The performance of evapotranspiration systems is dependent upon

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1 optimum climate conditions and therefore has limited applications. Most
2 evapotranspiration systems are site specific and vary in design and concept.
3 Artificial wetlands use aquatic plants to filter nutrients and pathogens from the
4 wastewater. The wastewater is dispersed to the atmosphere through
5 evapotranspiration.

6 14.2.3.6 Evapotranspiration requirements

7 Evapotranspiration systems shall be sited designed and constructed in accordance
8 to: *Guidelines for Evapotranspiration Systems*, State Water Resources Control
9 Board, 1980, or other design criteria as determined by the QLA.

10 14.2.3.7 Wetland systems requirements

- 11 (1) The bottom slope is a maximum of 1 percent. For larger flows, the bottom
12 slope should be based on hydraulic loading rates.
13 (2) To assist in providing adequate retention time, the length-to-slope ratio shall
14 be between 2-to-1 and 3-to-1.
15 (3) Sufficient cross-sectional areas must exist in the bed/channel for water to
16 move through it without surfacing.
17 (4) Hydraulic retention time in the bed/channel (amount of time the effluent
18 remains in the bed/channel), is a minimum of 2 – 3 days.
19 (5) Discharges other than into the soil require disinfection (maximum two log reduction in
20 fecal coliform) and aeration (they are anaerobic).

21 **14.2.4 Holding Tanks**

22 Use of holding tanks is generally limited to recreational areas, parks and
23 commercial facilities where sewer facilities are not available and where
24 installation of OWTS is not feasible. Operating permits for installing holding
25 tanks shall include a routine pumping schedule. Holding tanks shall be equipped
26 with high water alarms and have sufficient reserve storage capacity. Holding
27 tanks shall be watertight and have sampling wells installed to monitor
28 contamination. Use of holding tanks for individual and multi-family residences is
29 not permitted for new development. Holding tanks may be used as a temporary
30 facility in emergencies or during repairs to an existing septic system. Sampling
31 wells are not required on temporary installations.

32 **14.2.5 Graywater Systems**

33 Graywater systems are to be designed in accordance with the provisions of the
34 Uniform Plumbing Code (UPC) except as otherwise provided for in Appendix G
35 Graywater Systems, Title 24, Part 5, California Administrative Code, and any
36 additional requirements set forth by the QLA. The use of graywater systems shall
37 conform to the requirements of the General and Technical Standards in this
38 Ordinance.

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15.0 Material and Component Requirements

All pipes, fittings and appurtenances used in onsite wastewater systems shall be made of non-degradable, corrosion resistant PVC, ABS or polyethylene plastic materials. Use of ferrous metal, aluminum, copper, brass or bronze coated materials is not allowed. Fittings with solid stainless steel parts are acceptable. Stainless steel coated parts and fittings should not be used.

15.1 Septic and dosing tanks

Septic and Dosing tanks shall be water tight and tested when installed in accordance with section 15.1.8.

15.1.1 Septic Tank Sizing

15.1.2 Tank Construction

Tanks shall be constructed as described in Appendix II of this ordinance. Tanks shall maintain their rigidity and structural integrity when filled with water. Any tank that deforms sufficiently to distort, bend or separate the baffle, tees, fittings, connections and risers from the tank shall be rejected and removed from the site. The inlet and outlet ports of tanks shall be fitted with a molded or cast in place IAPMO approved flexible neoprene waterproof boot gasket. Tank openings requiring that fittings be mortared or connected with screw or bolt on adapters are not allowed except for repairs or necessary modifications as approved by the QLA. A registered civil engineer shall design all septic and dosing tanks. Septic tanks shall be capable of supporting a vertical load of a least 500 lbs./sf when the maximum coverage does not exceed three feet. Tanks installed with more than three feet of cover shall be reinforced to support the load. All Tanks shall be designed for lateral loads of at least 62.4 lbs. / cf. All tanks shall be marked on the uppermost exterior tank surface with the liquid capacity of the tank and the manufacturer's identification.

15.1.3 Tank Configuration

- a. Concrete tanks shall be "one-piece" whenever practical. Joints between tank sections and between the cover and access riser shall be tongue and groove, sealed watertight using a bituminous compound or epoxy. All tanks shall be fitted with access risers.
- b. Septic Tanks shall have multiple compartments. The primary (inlet) compartment shall have a minimum liquid capacity of at least two-thirds of the required liquid capacity, as measured from the invert of the outlet tee fitting.

15.1.3.1 Pump Systems

Pump systems shall require a septic tank and a separate dosing tank. The septic tank may be single or multi chambered. The dosing tank (where the pump is located) may be a single chamber tank. In certain applications where expected waste flows will be low and intermittent (e.g. office with few employees with restroom and no other facilities) a two chamber baffled septic tank may be used as

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1 a combination septic and dosing tank with the pump located in the secondary
2 chamber. Any tank equipped with a pump shall conform to the requirements of
3 section 14.1.6.

4 15.1.3.2 Dosing tanks

5 The pump intake port shall be located in the clear liquid zone of the minimum
6 liquid level or a minimum of 8 inches above the bottom of the tank; whichever is
7 the greater distance from the bottom.

8 **15.1.4 Tank Fittings and Appurtenances**

9 Pipes, valves and appurtenances located in septic and dosing tanks shall be
10 installed for easy access, repair and replacement through the tank access hole and
11 risers. Electrical splice boxes may be installed internally in the tank risers or
12 externally mounted on a weatherproof, non-degradable pedestal, securely
13 anchored to prevent settlement or tilting. Splice boxes shall be gas and water
14 tight and corrosion resistant and installed in conformance with the manufacturer's
15 specifications and local electrical codes where applicable. All electrical conduits
16 exiting the tank shall be sealed against gas vapor and moisture with silicone or
17 other National Electrical Manufacturers Association (NEMA) approved materials.

18 **15.1.5 Effluent Filter**

19 All effluent discharged from the septic tank shall be screened with a 1/8th inch
20 mesh screen filter. The area of the screen shall be of sufficient size to
21 accommodate anticipated flow through the screen. If a dosing tank is used
22 following a septic tank, the effluent filter shall be located at the dosing tank outlet.

23 **15.1.6 Access Riser Assembly**

24 The septic and dosing tanks shall have at least one 24"Ø access riser with
25 removable lid set to grade for access and inspection. The diameter of the riser
26 shall be increased depending on the depth of the tank to facilitate access to the
27 tank. Septic tanks with pump chambers and dosing tanks shall have the access
28 riser installed where the pump assembly is located. Risers and lids shall be
29 concrete, fiberglass or PVC. The lids shall have a gas and watertight seal. Risers
30 shall be permanently attached to the tank by epoxy or a bituminous mastic
31 compound. Risers shall not be attached to the tank lid with cement or mortar
32 products. No-shrink cement grout may be applied as an additional coating sealant
33 at the joints after the riser is installed with epoxy or bituminous mastic. Risers
34 shall be subject to the testing requirements of section 15.1.8.

35 15.1.6.3 Access Riser Cover Security

36 Access risers shall be equipped with tamper proof covers that require the use of
37 entry tools or procedures or strength not normally possessed by children under 11.
38 Access risers at or above the ground surface in areas accessible to the public shall
39 be locked to prevent unauthorized access and entry.

40 **15.1.7 Pump and Suspended Pump Assemblies**

41 Pumps shall be rated for wastewater use. Pumps shall be appropriately sized so
42 that the pump does not operate near its shut-off head. When appropriate, pumps

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1 shall be fitted with anti-siphon and back-flow check valves. Mechanical floats or
2 timers shall control each pump. Pumps may be seated on a level and stable
3 platform of poured concrete or cement block or placed in suspended pump
4 assemblies with the pump intake port placed in the clear liquid zone whenever
5 feasible. In all cases the pump inlet port shall be located a minimum of 8 inches
6 above the tank bottom or per the pump manufacturers requirements, whichever is
7 greater. The pump or suspended pump assemblies shall be installed in accordance
8 with the manufacturers requirements and recommendations. Suspended pump
9 packages shall be held in place with PVC or other non-corrosive brackets inside
10 the tank riser. Package Assemblies need not rest on the tank bottom or platform
11 unless specified by the manufacturer. The Pump discharge should not exceed a
12 rate that causes the pump to stir the liquid or solids in the tank.

13 **15.1.8 Emergency Storage Reserve**

14 Tanks with pumps shall maintain emergency reserve storage area measured below
15 the invert of the inlet tee. The minimum reserve storage shall be 200 gallons or
16 one-day average daily flow (gpd), whichever is greater. The average daily flow
17 shall be determined by the number of bedrooms of the home multiplied by 120
18 gallons per day per bedroom (150 gpd/bedroom without low flow fixtures). Local
19 jurisdictions regulating onsite wastewater systems may consider enhanced
20 treatment system proposals for providing emergency storage they feel are
21 reasonable and appropriate. The tank shall be equipped with a high water alarm
22 float. The minimum liquid level shall be set no lower than what is necessary to
23 provide the minimum required emergency storage + dosing volume. Setting the
24 “off” floats arbitrarily low to maximize emergency storage capacity is
25 discouraged. The off float shall not be set as to expose any portion of the pump.
26 Tanks and pump configurations should be selected which will optimize the use of
27 the tank volume during operation and not compress the clear liquid zone. The
28 minimum liquid level should be kept as high as practical to minimize the exposed
29 interior surface of the tank to corrosive gases and stress from exterior hydrostatic
30 and earth pressures.

31 **15.1.9 Testing Tanks for Leakage**

32 Tanks are to be tested in place prior to backfill using a 24 hr. hydrostatic water
33 test. The tank shall have the inlet and outlet sanitary tees and riser installed. The
34 inlet and outlet tees shall be temporarily sealed to hold water. The tank shall be
35 filled with water to 2 inches above the tank lid and riser interface to check for
36 leakage. Tanks shall not have a drop in water greater than 1 inch in a 24-hour
37 period.

38 **15.1.10 Control and Alarm Assembly**

39 Pumps used in an OWTS shall be connected to and operated from an approved
40 control panel assembly. Pump controls and alarms shall be located in an exterior
41 rated, water proof, non-corrosive service panel, mounted outside dwellings and
42 buildings in a location that is visible and easily accessible for service. Each pump
43 shall be controlled either by a mechanical float or timer assembly. Each pump

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1 shall have an event counter and hour meter included in the control panel. The
2 conduits enter pump control and service panels shall be sealed against gas vapor
3 and moisture with silicone or other approved NEMA sealant.

4 **15.1.11 Control Panel Access and Security**

5 Control panels shall be equipped with covers that require the use of entry tools or
6 procedures or strength not normally possessed by children under 11. Control
7 panels in areas accessible to the public shall be locked to prevent unauthorized
8 access and entry.

9 **15.2 Effluent distribution and soil treatment system**

10 **15.2.1 Gravity Distribution**

11 Gravity distribution of effluent through the soil treatment system can be either
12 serial or uniform distribution. In a serial distribution system the trenches are
13 constructed in such a way that effluent is discharged continuously into one trench
14 with the excess effluent flowing to the next trench in serial fashion. A system
15 using uniform distribution applies the effluent equally to all of the trenches.

16 **15.2.2 Distribution Boxes, Flow Splitter and Divider Assemblies**

17 Distribution boxes and flow divider assemblies shall be made of concrete, ABS,
18 PVC, PE plastic or fiberglass. Concrete assemblies shall have a corrosion
19 resistant coating applied to interior surfaces. D-boxes and flow divider
20 assemblies shall be installed outside of traffic and pedestrian areas with the lids
21 and inspection ports set at or above grade for easy access and inspection.

22 **15.2.3 Pipe and Filter Media and Plastic Leaching Chambers**

23 Distribution pipe in the treatment field shall conform to Section 15.0. Filter
24 media used in the treatment field shall be approved by the QLA. Plastic Leaching
25 Chambers may be used for private and commercial applications in lieu of pipe
26 and filter media. Installation of plastic leaching chambers shall conform to the
27 manufactures specifications and recommendations.

28 **15.2.4 Pressure Distribution Systems**

29 Pressure distribution systems shall be engineered to distribute the effluent
30 uniformly under low pressure throughout the soil treatment system. The pipe
31 laterals in a pressure distribution treatment field shall be CL 200 or greater PVC
32 plastic pipe with 1/8 to 1/4 inch \varnothing orifices of uniform size drilled at even spacing
33 along the length of the pipe.

34 **15.2.4.4 Pressure Distribution Hydraulics**

35 Pressurized distribution systems shall be designed for the appropriate head and
36 capacity and shall be demonstrated to produce a minimum residual head or squirt
37 height of five feet. All pressure distribution lines shall be squirt tested to verify
38 adequate squirt height. The designer shall determine the maximum length of
39 pressure laterals used in each design in conformance to section 14.2.4.2.

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15.2.4.5 Pressurized Laterals

Pressure laterals in treatment fields shall be a minimum 1"Ø diameter pipe. Lateral orifices may be pointed up or down. Orifices pointed up shall have orifice shields or other protection to prohibit media particles from blocking or clogging the orifice. Lateral distribution lines shall not exceed a maximum allowable 15% loss in head between the first and last orifice in each lateral and a maximum 15% loss across the entire field between the first and last lateral. Pressure laterals can be designed with variable lengths and configurations limited to the following design parameters:

- a. Maximum allowable head loss in each line as defined above,
- b. Orifice diameter and maximum allowable spacing determined by the designer and QLA,
- c. Adequate placement of cleanouts (maximum of one cleanout every 70 feet for lines 1" to 1 1/4" ID and every 100ft for laterals 1 1/2" ID and up).¹⁷
- d. A maximum of 35-gpm design pump discharged from the dosing tank, other hydraulic and mechanical limitations which may impair performance and operation.¹⁸

15.2.5 Infiltrative surface sizing requirements

15.2.6 Subsurface Drip Dispersal Soil Treatment Systems

Subsurface drip dispersal distribution systems are enhanced treatment systems that are engineered.

15.2.6.6 Requirements

- a. self-cleaning filters shall be designed to remove particles larger than 100 to 115 microns
- b. backflush water generated from a self-cleaning filter and dripline flushing shall be returned to the headworks
- c. time dosing shall be used to dose effluent to the distribution system
- d. uniform pressure distribution at 15-45 psi
- e. turbulent flow emitters require that filtered wastewater must first pass through a pressure regulator to control the maximum pressure in the dripline.
- f. the difference in discharge rates between emitters shall be no more than 10 percent
- g. vacuum relief valves are required at the high points of both the supply and return manifolds

¹⁷ Pressure laterals 3/4" to 1 1/4" ID may be greater than 70 if with proper location of cleanouts. Cleanouts can be located in line with laterals and are not limited to terminal ends. Most plumbing outfits and roofer services carry on hand a standard plumber's snake 75 ft. in length and can rod pipe 1" ID and greater. Most roofer services have plumber snakes 100 ft. in length. Plumbers and roofer services can clean 3/4" ID pipe and up.

¹⁸ Pump discharge from the dosing tank should not exceed 35 gpm to prevent stirring the tank.

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- 1 h. manufacturer recommended hydraulic loading rates shall be used
- 2 in design to establish the square foot of drip distribution footprint
- 3 area necessary
- 4 i. operations and maintenance manual

5 **15.3 Inspection Wells**

6 A sufficient number of inspection wells, as determined by the QLA, shall be
7 strategically placed directly in the subsurface treatment beds and trenches to
8 observe the standing liquid level. Inspection wells shall extend to the bottom of
9 the trench or leaching bed and anchored sufficiently to prevent disturbance or
10 removal. The inspection wells shall have removable caps and may either extend
11 above grade or be enclosed in service boxes set to grade with removal lids. The
12 boxes shall be made of non-degradable material such as PVC, fiberglass or
13 concrete. Additional inspection and sampling wells may be installed outside the
14 leaching area to monitor groundwater and movement of effluent through the soil.

15 **15.4 Cleanouts**

16 Cleanouts are recommended on all gravity and pressure laterals in leaching beds
17 and trenches. The cleanouts should be installed above grade or at grade enclosed
18 in a service box with removable lid. Gravity leach lines may benefit from having
19 cleanouts installed to provide periodic flushing of sludge and grease that settles in
20 the pipe. Pressure pipes require cleanouts and should be flushed annually to
21 prevent clogging of distribution orifices. Cleanouts are required at mid section or
22 both ends of pressure laterals over seventy-five feet in length.

23 **15.5 Diversion Ditches and Curtain Drains**

24 Use of diversion ditches or curtain drains shall conform to the set back
25 requirements in table 12-1. Diversion ditches and curtain drains may be used to
26 intercept seasonal surface and subsurface lateral seepage on the uphill slope above
27 the treatment field. Curtain drains should not be used to attempt to de-water sites
28 or lower the water table to install a treatment field.

29 **16.0 Design Review & Plan Checking**

30 All design submittals for new OWTS and for repairs shall be reviewed by the
31 QLA or its representative officers.

32 **16.1 Design submittals**

33 Designs submittals shall conform to these regulations and any additional
34 requirements of the QLA. Designs shall be signed and stamped by the person
35 responsible for the design.

36 **16.1.1 Design Review**

37 Competent staff or representative officers of the QLA who possess the
38 appropriate training, certificates and experience in OWTS as prescribed in section
39 10.0 of the General Standards of these regulations shall review designs.
40 Jurisdictions that do not have qualified personnel to review designs shall contract

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1 with outside agencies or consultants to perform design review and plan checking.
2 Any person who provides OWTS designs, plan review and checking and who is
3 not trained and certified in accordance with section 10.0 may be subject to
4 misdemeanor violation and penalties under sub-section 10.4.0.

5 **16.1.2 Design Approval**

6 Designs that are judged to be in substantial compliance with the regulations of the
7 QLA shall be approved for construction. Designs shall be valid for a minimum of
8 one year from date of approval. Permitting agencies may extend the approval
9 date beyond one year at their discretion.

10 **16.2 General Installation Requirements for OWTS**

11 All materials, fixtures or equipment used in the installation, repair or alteration of
12 any sewage treatment system shall conform to the standards referenced in this
13 code. All materials installed in sewage treatment systems shall be handled and
14 installed so as to avoid damage. The quality of the material shall not be impaired.
15 Defective or damaged materials, equipment or apparatus shall not be installed or
16 maintained.

17 **16.3 Workmanship**

18 All construction shall be completed in a professional manner in conformance with
19 the accepted industry standards and shall be of such character as to secure the
20 results necessary to comply with this code.

21 **16.4 Inspection**

22 All sewage treatment systems shall be inspected after construction is completed
23 and prior to backfill. Any system that has been backfilled before being inspected
24 shall be uncovered to allow for inspection. The Installer shall make arrangements
25 with the QLA to perform an inspection and the operation of the system. The
26 Installer is required to provide all the necessary apparatus, equipment, power, and
27 water for testing the system. The design consultant shall certify in writing that the
28 system installation has been completed in substantial conformance with the
29 approved plans and specifications and that all necessary construction inspections
30 have been completed. Where inspection discloses defective material, design,
31 siting or un-workmanlike construction not conforming to the requirements of this
32 ordinance, the owner and Installer shall be issued a correction notice to bring the
33 system into compliance and to schedule for re-inspection of the system by the
34 QLA.

35 **16.4.1 Precover Inspection**

36 The system installer shall request a precover inspection after completion of
37 construction, alteration or repair of the system and before the system is backfilled
38 and covered. The QLA shall inspect the system to determine if the system
39 conforms to the design and regulatory requirements. The precover inspection
40 may be waived at the discretion of QLA. Once the system is installed, it shall be
41 backfilled (covered), only after the permittee is notified by the QLA that the

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1 precover inspection has been completed or was waived. The designer shall
2 provide the QLA with a detailed, as-built plan (drawn to scale) of the system at
3 the completion of work and before the initial operating permit is issued. Unless
4 otherwise required by the QLA, the installer should backfill the system within a
5 reasonable amount of time after issuance of the Initial Operating Permit.
6

7 16.4.2 Recommended Minimum Inspection Intervals

Standard Systems	Every 5 years
Enhanced Treatment Systems	Twice during the first year and every three years thereafter.*
Experimental Systems	Twice during the first year and once a year for 5 years, every three years thereafter.*

8 *Or as defined in the maintenance and operation plan submitted by the system
9 designer or manufacturer, but no less than indicated in this table.
10

11 In addition to the above inspections are required for the following:

- 12 1. Whenever the septic tank is pumped.
- 13 2. Whenever the property is sold.
- 14 3. Whenever a complaint is filed with the QLA.
- 15 4. Every 3 years for residences identified by the issuing agency as having a high
16 rate of water use or being located in an area of water quality concern.

17 16.4.3 Exceptions

18 Systems treating high strength or atypical wastewater shall be inspected annually
19 by representatives or officers of the QLA or by entities eligible under Section 4.2.

20 16.4.4 Inspection During Sale Or Transfer Of Property

21 The owner's OWTS shall be inspected at the time of property sale prior to close
22 of escrow. Certified staff or representative officer of the QLA, at the expense of
23 the property owner, shall prepare an inspection report. The report shall be
24 presented to the buyer, lender and QLA. The report shall contain the following
25 information:

- 26 a. The type, configuration and condition of the septic tank, the
27 primary soil treatment system (and reserve treatment area if
28 known) and any enhanced treatment components and treating
29 devices.¹⁹
- 30 b. The operational status of the system as observed in the field or
31 taken from recent monitoring reports on file with the QLA.
- 32 c. If the tank requires pumping based on a measurement of
33 accumulated scum and solids greater than 25% of the total tank
34 depth.

¹⁹ Enhanced as opposed to a standard gravity septic tank and leachfield system.

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- 1 d. Any observable problems or needed repairs requiring immediate
- 2 attention.
- 3 e. An estimate of remaining usable area on the parcel to support
- 4 repair or expansion of the existing leachfield if no known
- 5 expansion site has been designated for the system.
- 6

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1

2 Appendix I – Septic Tank Construction Requirements

3

4 General Design Criteria

5 a. Top = 500 psf (*The tank shall be capable of supporting long-term unsaturated*
6 *soil loading in addition to the lateral hydrostatic load.*)

7 b. Lateral Load = 62.4 pcf (*The tank shall be capable of withstanding long-term*
8 *hydrostatic loading with the water table maintained at ground surface.*)

9 c. Concentrated Wheel Load = 2500 lb. (*The tank and accesses shall be capable of*
10 *supporting short-term wheel load in addition to the unsaturated soil loading.*)

11 d. Soil Bearing = 1000 psf (*Soil bearing is site specific and must reflect the worst*
12 *case conditions.*)

13 e. Cold weather installations requiring deep burial need special consideration.

14 f. All tanks shall successfully withstand an above ground static hydraulic test.

15 g. The inlet plumbing shall penetrate at least 30.5 cm (*12 in.*) into the liquid from the
16 inlet flow line. If the submerged scum depth is expected to be greater than 30.5 cm (*12*
17 *in.*), the inlet fixture should be extended into the liquid two inches below the expected
18 lowest scum depth.

19

20 General Specifications

21 a. Manufacturer's Guarantee shall be for a period of two years.

22 b. All tanks shall be installed in strict accordance with the manufacturer's
23 instructions.

24

25 Concrete tanks

26 The walls, bottom and top of reinforced-concrete tanks are usually designed spanning the
27 shortest dimension using one-way slab analysis. Stresses in each face of monolithically
28 constructed tanks are determined by analyzing the tank's cross-section as a continuous
29 fixed frame.

30

31 The walls and bottom slab should be required to be poured monolithically. When a tank
32 is expected to be submerged, subjected to heavy traffic loads, or buried deeply, the top
33 slab must be cast onto the walls with wall reinforcement extending into the top slab.

34

35 The bottom thickness of the wall should be equal to the thickness of the floor, which is
36 usually thicker. At the wall-floor joint the stress is equally shared; therefore, steel
37 spacing is more efficient and cost effective if the wall thickness is equal to the thickness
38 of the floor. The wall can taper to *three* inches at the top. Tapering the interior mold at
39 the bottom improves the flowability of the concrete around the walls and into the floor.
40 Chamfering the wall-floor junction on the inside reduces the effect of suction between the
41 tank-mold and concrete surfaces; thus the integrity of the concrete at the joint is better
42 maintained and less effort is needed to remove the interior mold.

43

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1 Casting the top in place will produce a much stronger tank than will setting the top in
2 place. A cast on lid, with wall reinforcement adequately tied to the top reinforcement,
3 improves the structural capacity of the top and bottom by more than 40 percent and the
4 walls by about 25 percent. The required rebar spacing will be wider, which reduces
5 materials cost and labor in fabrication. With the wall and top joint cast together there is
6 greater assurance that if differential settlement occurs the top will not separate from the
7 wall causing loss of lateral support at the top. Separation of the top lid from the wall
8 would significantly reduce the tank's strength and its watertightness would be lost. Set in
9 place lids must be mechanically attached to the walls to assure the joint does not separate
10 when the tank shifts or settles.

11 Concrete Specifications

12 *Concrete* must achieve a minimum compressive strength of 4,000 psi in 28 days. The
13 design of the concrete mix depends on the gradation of the aggregate and should be
14 determined by a professional engineer. A common 4000 psi ready-mix design has a
15 cement content of six and one half ($6\frac{1}{2}$) sacks per cubic yard and maximum aggregate
16 size of 19 mm ($\frac{3}{4}$ in.) (*Ready-mix cement conforming to ASTM C-150, Type II.*)

17
18
19 *Water/Cement Ratio.* To ensure proper curing and ultimate strength, it's important to
20 keep the water/cement ratio low, 0.35 \pm .

21
22 *Air-entraining* agents may be required depending on the mix design, although they are
23 not usually necessary for small concrete tanks. Air-entrainment without additives is
24 usually 1 to 2 %.

25
26 *Fiber Additives* may be used to enhance watertightness by controlling concrete shrinkage.

27
28 *Protective Coatings.* Heavy *cement-based* sealants may be used inside and out. The
29 manufacturer's directions must be followed exactly. *Bituminous coatings are not*
30 *necessary.*

31
32 *Reinforcing Steel* shall be Grade 60, $f_y = 60,000$ psi (*ASTM A-615 Grade 60*). Size and
33 placement must be determined by a structural engineer. Wire fabric is not acceptable.
34 Weldable steel may be specified if the reinforcing cage is to be tack welded during
35 assembly. Misalignment of reinforcement in a three-inch thick section can significantly
36 reduce the strength of the tank; for instance, a quarter inch of misalignment will reduce
37 the capacity of that section by about thirty percent, one-half inch of misalignment will
38 reduce the capacity by fifty percent.

39
40 *Form Release* must be Nox-Crete or equal. Diesel or other petroleum products are not
41 acceptable.

42

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1 *Vibration.* Tank molds must have attached vibrators to ensure adequate flow of concrete
2 down the walls and across the bottom. Excess vibration can cause the aggregate to
3 segregate.

4
5 *Curing.* Proper curing techniques are necessary to ensure watertight tanks. Tanks must
6 not be moved until they have cured for seven (7) days or have reached two-thirds of the
7 design strength.

8
9 *Test Cylinders* must be taken from each batch of concrete and tested until the minimum
10 compression strength has been obtained.

11 Fiberglass Tanks

12 *Glass fiber and resin* content must comply with IAPMO IGC 3-74, and there should be
13 no exposed glass fibers.

14
15
16 *Metal parts* must be 300 series stainless steel.

17
18 *Wall thickness* must average at least 6.3 mm ($1/4$ in.) with no wall thickness less than 4.8
19 mm ($3/16$ in.) No delamination is allowable.

20
21 *Holes* specified in the tank must be protected with an application of resin on all cut or
22 ground edges sufficient so that no glass fibers are exposed and all voids are filled.

23
24 *Neoprene gaskets*, or an approved equal, must be used at the inlet to join the tank wall
25 and the ABS inlet piping. ABS Schedule 40 pipe and fittings must be used at the inlets.

26 Testing

27
28 Follow these test procedures to ensure watertightness. Test every tank at the factory and
29 again after installation:

30
31 1) Fill the tank to its brim with water and let it stand for 24 hours. To help expedite
32 larger orders a vacuum test may be substituted at the factory, and after the tanks are
33 delivered to the job site. A vacuum test may not, however, take the place of the final
34 installed static water test.

35 2) Measure the water loss; if there is no water loss during the first 24 hours the tank
36 is acceptable for installation. Some water absorption, however, may occur during this
37 first time period. If so, refill the tank and determine any exfiltration by measuring the
38 water loss over the next two (2) hours. Any water loss is cause for rejection.

39 3) Install the tank and repeat steps 1 and 2. These procedures should be followed
40 after setting and after backfilling. Test the seal between the riser and the tank top for
41 watertightness by filling the riser with water to a level 2" above the top brim of the tank.

42 *Caution: To prevent hydrostatic uplift damage to the top joint of the tank, do not allow*
43 *the level of water in the riser to exceed the level of the backfill.*

44

California Onsite Wastewater Treatment System Ordinance

TECHNICAL STANDARDS

1 Buoyancy

2 Improper septage pumping of a buried tank may result in the tank suddenly “floating” to
3 the surface, causing damage to piping, landscaping or worse, injuring maintenance
4 personnel. The following precautions help to ensure tank submergence in areas with high
5 groundwater:

6

- 7 • Require a minimum cover where high groundwater conditions are suspected
8 (evaluation must be provided after identifying site specific soil conditions).
- 9 • After setting the tank, pour an additional 15.25 cm (*6 in.*) of concrete over the top;
10 extend a minimum of 30.5 cm (*12 in.*) beyond the sides of the tank. Lightweight plastic
11 tanks (400 lbs) require concrete or other counter measures sufficient to exceed the
12 buoyant force.
- 13 • The weight of concrete tanks can be increased by adding thickness to the walls,
14 top and/or bottom.
- 15 • Operation and maintenance instructions should clearly state that tanks must never
16 have more than half (50%) of their contents pumped out during periods when the
17 groundwater is high; especially if they are located in sandy soil. This recommendation is
18 for cautionary purposes only, and is not a substitute for physical buoyancy restraints.

19

California Onsite Wastewater Treatment System Ordinance

TECHNICAL STANDARDS

1 Appendix II – California Codes

2 CALIFORNIA CODES

3 WATER CODE

4 SECTION 31143-31143.5

5
6 31143. In addition to the other powers provided by law, the San Lorenzo Valley Water
7 District, Santa Cruz County, shall have all of the following powers and shall promptly
8 and effectively exercise such powers as may be appropriate to ensure that onsite waste
9 water disposal systems, as defined in Section 6952 of the Health and Safety Code, along
10 the San Lorenzo River do not pollute the river, its tributaries, and ground water:

11 (a) To carry on technical and other investigations, examinations, or tests, of all kinds,
12 make measurements, collect data, and make analyses, studies, and inspections pertaining
13 to the water supply, use of water, water quality, nuisance, pollution, waste, and
14 contamination of water within the district as such activities relate to the use of public,
15 combined, or private onsite waste water disposal systems.

16 (b) To require all persons discharging from onsite waste water disposal systems within
17 the district to register the system with the district, and to charge annual registration fees
18 in such amount as will defray all or a portion of the costs of exercising the powers
19 provided in this article. Applications for permits for onsite waste water disposal systems
20 within the district to the County of Santa Cruz shall be referred to the district for the
21 district's review and comment.

22 (c) To adopt and enforce regulations for onsite waste water disposal systems within the
23 district, after holding a public hearing on reasonable notice thereof, to control and
24 enhance the quality of the ground and surface waters of the district, in order to eliminate
25 the pollution, waste, and contamination of water flowing into, through, or originating
26 within watercourses, both natural and artificial, within the district, to prevent
27 contamination, nuisance, pollution, or otherwise rendering unfit for beneficial use the
28 surface or ground water used or useful in the district, and to expend such amounts as are
29 necessary to exercise such powers from the funds of the district. Such regulations shall
30 not be in conflict with state law or county ordinances.

31
32 31143.1. The district shall immediately do all such acts as are reasonably necessary to
33 secure compliance with any federal, state, regional, or local law, order, regulation, or rule
34 relating to water pollution or discharges from onsite waste water disposal systems within
35 the area of the district. For such purpose, any authorized representative of the district,
36 upon presentation of his credentials, or, if necessary under the circumstances, after
37 obtaining an inspection warrant pursuant to Title 13 (commencing with Section
38 1822.50) of Part 3 of the Code of Civil Procedure, or with the permission of the owner,
39 shall have the right of entry to any premises on which an onsite waste water disposal
40 system is located for the purpose of inspecting such system, including securing samples
41 of discharges therefrom, or any records required to be maintained in connection therewith
42 by federal, state, or local law, order, regulation, or rule.

43

California Onsite Wastewater Treatment System Ordinance

TECHNICAL STANDARDS

1 31143.2. (a) Violation of any of the provisions of a district regulation adopted pursuant
2 to Section 31143 may be abated as a public nuisance by the district, and the board of
3 directors may by regulation establish a procedure for the abatement of such a nuisance
4 and to assess the cost of such abatement to the violator. If the violator maintains the
5 nuisance upon real property in which he has a fee title interest, the assessment shall
6 constitute a lien upon such real property.

7 (b) The amount of any costs incurred by the district in abating such a nuisance upon
8 real property shall be added to the annual taxes next levied upon the real property subject
9 to abatement and shall constitute a lien upon that real property as of the same time and in
10 the same manner as does the tax lien securing such annual taxes. All laws applicable to
11 the levy, collection, and enforcement of district taxes shall be applicable to such
12 assessment, except that if any real property to which such lien would attach has been
13 transferred or conveyed to a bona fide purchaser for value, or if a lien of a bona fide
14 encumbrancer for value has been created and attached thereon, prior to the date on which
15 the first installment of such taxes would become delinquent, then a lien which would
16 otherwise be imposed by this section shall not attach to such real property and the
17 delinquent and unpaid charges relating to such property shall be transferred to the
18 unsecured roll for collection. Any amounts of such assessments collected are to be
19 credited to the funds of the district from which the costs of abatement were expended.
20

21 31143.3. (a) The owner of any real property upon which is located an onsite waste water
22 disposal system, which system is subject to abatement as a public nuisance by the district,
23 may request the district to replace or repair, as necessary, such system. If replacement or
24 repair is feasible, the board of directors, in its sole discretion, may provide for the
25 necessary replacement or repair work.

26 (b) The person or persons employed by the board of directors to do the work shall have
27 a lien, subject to the provisions of subdivision

28 (b) of Section 31143.2, for work done and materials furnished, and the work done and
29 materials furnished shall be deemed to have been done and furnished at the request of the
30 owner. The district, in the discretion of the board of directors, may pay all, or any part,
31 of the cost or price of the work done and materials furnished; and, to the extent that the
32 district pays the cost or price of the work done and materials furnished, the district shall
33 succeed to and have all the rights, including, but not limited to, the lien, of such person or
34 persons employed to do the work against the real property and the owner.

35 (c) As an alternative power to the enforcement of the lien provided in subdivision (b),
36 the board of directors may, by ordinance adopted by two-thirds vote of the members, fix
37 the costs of replacement or repair; fix the times at which such costs shall become due;
38 provide prior to the replacement or repair for the payment of the costs in installments
39 over a period not to exceed 15 years; establish a rate of interest not to exceed 8 percent
40 per annum, to be charged on the unpaid balance of the costs; and provide that the amount
41 of the costs and the interest shall constitute a lien, subject to the provisions of subdivision
42 (b) of Section 31143.2, against the respective lots or parcels upon which the work is
43 done.

California Onsite Wastewater Treatment System Ordinance

TECHNICAL STANDARDS

1 (d) With the written consent of the owner and the lien holder, if other than the district,
2 the board of directors may issue an improvement bond pursuant to the improvement bond
3 provisions of the
4 Improvement Act of 1911 (Part 5 (commencing with Section 6400) of Division 7 of the
5 Streets and Highways Code), to represent and be secured by the lien established pursuant
6 to subdivision (b). The bond may be delivered to the lien holder if other than the district
7 or may be sold by the board of directors at public or private sale. The amount of the bond
8 shall be the amount of the lien, including incidental expenses allowable under the
9 Improvement Act of 1911. The bond term and interest rate shall be determined by the
10 board of directors within the limits established by the Improvement Act of 1911 and other
11 applicable provisions of law.

12
13 31143.4. In order to avoid duplication, either the district or the County of Santa Cruz
14 may contract with the other party for any services or activities authorized to be performed
15 pursuant to this article.

16
17 31143.5. Any violation of a regulation of the district adopted pursuant to Section 31143
18 is a misdemeanor punishable by a fine not to exceed five hundred dollars (\$500), or
19 imprisonment not to exceed 60 days, or by both such fine and imprisonment. Each day of
20 such a violation shall constitute a separate offense. Any violation or threatened violation
21 of a regulation of the district may also be enjoined by civil suit.

22 23 24 CALIFORNIA CODES 25 HEALTH AND SAFETY CODE 26 SECTION 6950-6954

27
28 6950. "Board" or "board of directors" means the governing authority of a public agency.

29
30 6951. "Public agency" means a city, a county, a special district, or any other political
31 subdivision of the state which is otherwise authorized to acquire, construct, maintain, or
32 operate sanitary sewers or sewage systems.

33 "Public agency" does not mean an improvement district organized pursuant to the
34 Improvement Act of 1911 (Division 7 (commencing with Section 5000), Streets and
35 Highways Code), or the Municipal
36 Improvement Act of 1913 (Division 12 (commencing with Section 10000), Streets and
37 Highways Code) or the Improvement Bond Act of 1915 (Division 10 (commencing with
38 Section 8500), Streets and Highways
39 Code), or a county maintenance district.

40
41 6952. "On-site wastewater disposal system" means any of several works, facilities,
42 devices, or other mechanisms used to collect, treat, recycle, or dispose of wastewater
43 without the use of communitywide sanitary sewers or sewage systems.

California Onsite Wastewater Treatment System Ordinance

TECHNICAL STANDARDS

1 6952.5. "Owner of real property" means any public agency owning land and any person
2 shown as the owner of land on the last equalized assessment roll; provided that where
3 such person is no longer the owner, the term means any person entitled to be shown as
4 owner on the next assessment roll and where land is subject to a recorded written
5 agreement of sale, the term means any person shown therein as purchaser.

6
7 6953. "Zone" means an on-site wastewater disposal zone formed pursuant to this
8 chapter.

9
10 6954. "Real property" means both land and improvements to land which benefit, directly
11 or indirectly from, or on behalf of, the activities of the zone.

12
13
14 CALIFORNIA CODES
15 HEALTH AND SAFETY CODE
16 SECTION 6975-6982

17
18 6975. An on-site wastewater disposal zone may be formed to achieve water quality
19 objectives set by regional water quality control boards, to protect existing and future
20 beneficial water uses, protect public health, and to prevent and abate nuisances.
21 Whenever an on-site wastewater disposal zone has been formed pursuant to this chapter,
22 the public agency shall have the powers set forth in this article, which powers shall be in
23 addition to any other powers provided by law. A public agency shall exercise its powers
24 on behalf of a zone.

25
26 6976. An on-site waste water disposal zone shall have the following powers:

27 (a) To collect, treat, reclaim, or dispose of waste water without the use of
28 communitywide sanitary sewers or sewage systems and without degrading water quality
29 within or outside the zone.

30 (b) To acquire, design, own, construct, install, operate, monitor, inspect, and maintain
31 on-site wastewater disposal systems, not to exceed the number of systems specified
32 pursuant to either Section 6960 or Section 6960.1, within the zone in a manner which will
33 promote water quality, prevent the pollution, waste, and contamination of water, and
34 abate nuisances.

35 (c) To conduct investigations, make analyses, and monitor conditions with regard to
36 water quality within the zone.

37 (d) To adopt and enforce reasonable rules and regulations necessary to implement the
38 purposes of the zone. Such rules and regulations may be adopted only after the board
39 conducts a public hearing after giving public notice pursuant to Section 6066 of the
40 Government Code.

41
42 6977. The public agency shall do all such acts as are reasonably necessary to secure
43 compliance with any federal, state, regional, or local law, order, regulation, or rule
44 relating to water pollution or the discharge of pollutants, waste, or any other material

California Onsite Wastewater Treatment System Ordinance

TECHNICAL STANDARDS

1 within the zone. For such purpose, any authorized representative of the public agency,
2 upon presentation of his credentials, or, if necessary under the circumstances, after
3 obtaining an inspection warrant pursuant to Title 13 (commencing with Section 1822.50)
4 of Part 3 of the Code of Civil Procedure, shall have the right of entry to any premises on
5 which a water pollution, waste, or contamination source, including, but not limited to,
6 septic tanks, is located for the purpose of inspecting such source, including securing
7 samples of discharges therefrom, or any records required to be maintained in connection
8 therewith by federal, state, or local law, order, regulation, or rule.

9
10 6978. (a) Violation of any of the provisions of a rule or regulation adopted pursuant to
11 subdivision (d) of Section 6976 may be abated as a public nuisance by the board. The
12 board may by regulation establish a procedure for the abatement of such a nuisance and
13 to assess the cost of such abatement to the violator. If the violator maintains the nuisance
14 upon real property in which he has a fee title interest, the assessment shall constitute a
15 lien upon such real property in the manner provided in subdivision (b).

16 (b) The amount of any costs, which are incurred by the zone in abating such a nuisance
17 upon real property, shall be assessed to such real property and shall be added to, and
18 become part of, the annual taxes next levied upon the real property subject to abatement
19 and shall constitute a lien upon that real property as of the same time and in the same
20 manner as does the tax lien securing such annual taxes. All laws applicable to the
21 collection and enforcement of county ad valorem taxes shall be applicable to such
22 assessment, except that if any real property to which such lien would attach has been
23 transferred or conveyed to a bona fide purchaser for value, or if a lien of a bona fide
24 encumbrancer for value has been created and attached thereon, prior to the date on which
25 such delinquent charges appear on the assessment roll, then a lien which would otherwise
26 be imposed by this section shall not attach to such real property and the delinquent and
27 unpaid charges relating to such property shall be transferred to the unsecured roll for
28 collection. Any amounts of such assessments collected are to be credited to the funds of
29 the zone from which the costs of abatement were expended.

30
31 6979. (a) The owner of any real property upon which is located an on-site wastewater
32 disposal system, which system is subject to abatement as a public nuisance by the public
33 agency, may request the public agency to replace or repair, as necessary, such system. If
34 replacement or repair is feasible, the board may provide for the necessary replacement or
35 repair work.

36 (b) The person or persons employed by the board to do the work shall have a lien,
37 subject to the provisions of subdivision (b) of Section 6978, for work done and materials
38 furnished, and the work done and materials furnished shall be deemed to have been done
39 and furnished at the request of the owner. The zone, in the discretion of the board, may
40 pay all, or any part, of the cost or price of the work done and materials furnished; and, to
41 the extent that the zone pays the cost or price of the work done and materials furnished,
42 the zone shall succeed to and have all the rights, including, but not limited to, the lien, of
43 such person or persons employed to do the work against the real property and the owner.

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1 6980. A board may exercise all of the public agency's existing financial powers on
2 behalf of a zone, excepting that any assessment or tax levied upon the real property of a
3 zone shall be subject to the provisions of Sections 6978 and 6981.

4
5 6981. Notwithstanding any other provision of law, a public agency may levy an
6 assessment reasonably proportional to the benefits derived from the zone, as determined
7 by the board, and subject to the approval of the voters pursuant to the provisions of
8 Article 6 (commencing with Section 2285) of Chapter 3 of Part 4 of Division 1 of the
9 Revenue and Taxation Code. Such benefit assessment shall be in addition to any other
10 charges, assessments, or taxes otherwise levied by the public agency upon the property in
11 the zone.

12
13 6982. (a) Notwithstanding Section 6952, the West Bay Sanitary District may use the
14 procedures in this chapter to provide alternative or innovative waste water technologies in
15 the district's jurisdiction.

16 (b) The determination of a public health officer pursuant to Section 6955.1 shall include
17 written findings, adopted by the district board of directors, regarding the existing or
18 potential public health hazard.

19 (c) If the district uses the procedures in this chapter to provide alternative or innovative
20 waste water technologies pursuant to this section, the district shall submit to the
21 Legislature, by January 1, 1991, a report on the effectiveness of alternative waste water
22 technologies and the procedures in this chapter, recommend changes, if any in the
23 requirements, and make recommendations as to the desirability of continuing the
24 requirements after January 1, 1992.

25 (d) "Alternative or innovative waste water technologies" means either (1) an onsite
26 waste water disposal system, as defined in Section 6952, or (2) such a system in
27 conjunction with communitywide sewer or sewage systems, if one or more of the
28 components of the system is located on or in close proximity to the real property and
29 employs innovative or alternative waste water technologies, including, but not limited to,
30 grinder pump pressure sewer systems, septic tank effluent pump pressure sewer systems,
31 vacuum sewer systems, or small-diameter gravity septic tank systems.

32
33 Chapter 4.5 (commencing with Section 13290) to Division 7 of the Water Code

34 BILL NUMBER: AB 885 CHAPTERED

35 INTRODUCED BY Assembly Member Jackson

36
37 FEBRUARY 25, 1999

38
39 An act to add Chapter 4.5 (commencing with Section 13290) to Division 7 of the Water Code, relating to
40 water.

41 LEGISLATIVE COUNSEL'S DIGEST

42 AB 885, Jackson. Onsite sewage treatment systems. Existing law authorizes a California regional water
43 quality control board to prohibit, under specified circumstances, the discharge of waste from individual
44 disposal systems or community collection and disposal systems that use subsurface disposal. This bill
45 would require the State Water Resources Control Board, on or before January 1, 2004, and in consultation
46 with the State Department of Health Services, the California Coastal Commission, the California

California Onsite Wastewater Treatment System Ordinance

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1 Conference of Directors of Environmental Health, counties, cities, and other interested parties, to adopt,
2 specified regulations or standards for the permitting and operation of prescribed onsite sewage treatment
3 systems that meet certain requirements.

4 The bill would require each regional board to incorporate the state board's regulations or standards into the
5 appropriate regional water quality control plans.

6 The bill would make a statement of legislative intent relating to assistance to private property owners with
7 onsite sewage treatment systems.

8 THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

9 SECTION 1. Chapter 4.5 (commencing with Section 13290) is added to Division 7 of the Water Code, to
10 read:

11 CHAPTER 4.5. ONSITE SEWAGE TREATMENT SYSTEMS

12 13290. For the purposes of this chapter:

13 (a) "Local agency" means any of the following entities:

14 (1) A city, county, or city and county.

15 (2) A special district formed pursuant to general law or special act for the local performance of
16 functions regarding onsite sewage treatment systems within limited boundaries.

17 (b) "Onsite sewage treatment systems" includes individual disposal systems, community collection
18 and disposal systems, and alternative collection and disposal systems that use subsurface disposal. 13291.

19 (a) On or before January 1, 2004, the state board, in consultation with the State Department of Health
20 Services, the California Coastal Commission, the California Conference of Directors of Environmental
21 Health, counties, cities, and other interested parties, shall adopt regulations or standards for the permitting
22 and operation of all of the following onsite sewage treatment systems in the state and shall apply those
23 regulations or standards commencing six months after their adoptions:

24 (1) Any system that is constructed or replaced.

25 (2) Any system that is subject to a major repair.

26 (3) Any system that pools or discharges to the surface.

27 (4) Any system that, in the judgment of a regional board or authorized local agency, discharges waste
28 that has the reasonable potential to cause a violation of water quality objectives, or to impair present or
29 future beneficial uses of water, to cause pollution, nuisance, or contamination of the waters of the state.

30 (b) Regulations or standards adopted pursuant to subdivision (a), shall include, but shall not be limited
31 to, all of the following:

32 (1) Minimum operating requirements that may include siting, construction, and performance
33 requirements.

34 (2) Requirements for onsite sewage treatment systems adjacent to impaired waters identified pursuant
35 to subdivision (d) of Section 303 of the Clean Water Act (33 U.S.C. Sec. 1313(d)).

36 (3) Requirements authorizing a qualified local agency to implement those requirements adopted under
37 this chapter within its jurisdiction if that local agency requests that authorization.

38 (4) Requirements for corrective action when onsite sewage treatment systems fail to meet the
39 requirements or standards.

40 (5) Minimum requirements for monitoring used to determine system or systems performance, if
41 applicable.

42 (6) Exemption criteria to be established by regional boards.

43 (7) Requirements for determining a system that is subject to a major repair, as provided in paragraph
44 (2) of subdivision (a).

45 (c) This chapter does not diminish or otherwise affect the authority of a local agency to carry out
46 laws, other than this chapter, that relate to onsite sewage treatment systems.

47 (d) This chapter does not preempt any regional board or local agency from adopting or retaining
48 standards for onsite sewage treatment systems that are more protective of the public health or the
49 environment than this chapter.

50 (e) Each regional board shall incorporate the regulations or standards adopted pursuant to
51 subdivisions (a) and (b) into the appropriate regional water quality control plans.

52 13291.5 It is the intent of the Legislature to assist private property owners with existing systems who incur
53 costs as a result of the implementation of the regulations established under this section by encouraging the

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1 state board to make loans under Chapter 6.5 (commencing with Section 13475) to local agencies to assist
2 private property owners whose cost of compliance with these regulations exceeds one-half of one percent
3 of the current assessed value of the property on which the onsite sewage system is located. 13291.7.
4 Nothing in this chapter shall be construed to limit the land use authority of any city, county, or city and
5 county.
6
7