County of San Diego
Department of Environmental Health and Quality

Local Agency Management Program (LAMP) for Onsite Wastewater Treatment Systems

FINAL

Effective February 1, 2025

LAMP REVISIONS HISTORY				
Effective Date	**Revision**	**Description**	**Board of Supervisor Approval/ Received Date**	**San Diego Regional Board Approval/ Resolution Date**
7/24/2015	Original	Original LAMP	Consent 6/24/2015	Executive Officer Letter 4/29/2015
02/01/2025	Update	Revisions to original LAMP based on results of 5-Year LAMP evaluation and stakeholder feedback	8/28/2024	11/13/2024

TABLES AND FIGURES

LIST OF ACRONYMS	
AASHTO	American Association of State Highway and Transportation Officials
ABS	Acrylonitrile Butadiene Styrene
ACI	American Concrete Institute
ANSI	American National Standards Institute
APMP	Advanced Protection Management Program
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
COSD	County of San Diego
CWC	California Water Code
DEHQ	Department of Environmental Health and Quality
EDF	Electronic Deliverable Format
EPA	Environmental Protection Agency
FOG	Fats, Oils, Grease
GPD	Gallons Per Day
IAMPO	International Association of Plumbing and Mechanical Officials
LA	Load Allocation
LAMP	Local Agency Management Program
MMS	Millimeters
MPI	Minutes Per Inch
MPN	Most Probable Number
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NSF	National Sanitation Foundation
OWTS	Onsite Wastewater Treatment System
PVC	Polyvinyl Chloride
PSI	Pounds Per Square Inch
ROWD	Report of Waste Discharge
RV	Recreational Vehicle
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
TSS	Total Suspended Solids
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WQAP	Water Quality Assessment Program
WDR	Waste Discharge Requirement
WLA	Waste Load Allocation

CHAPTER 1.0 INTRODUCTION

1.1 Introduction

The Local Agency Management Program (LAMP) is the culmination of the actions required by Assembly Bill 885 (AB 885). AB 885 was introduced to the California State Assembly on February 25, 1999 and approved on September 27, 2000. This legislation directed the State Water Resources Control Board (SWRCB) to develop regulations or standards for onsite wastewater treatment systems (OWTS) to be implemented by qualified local agencies. The SWRCB adopted the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems on June 19, 2012 (OWTS Policy). The policy was subsequently approved by the Office of Administrative Law on November 13, 2012 and became effective on May 13, 2013. As required by the OWTS Policy, the OWTS Policy was subsequently adopted into the California Code of Regulations, Title 23, sections 2924, 3969.5, and 3991.1, and the Water Quality Control Plans (Basin Plans) for the Colorado River Basin and San Diego Regional Water Quality Control Boards (RWQCB). In addition to local ordinance authority to permit the installation of OWTS to address health and safety concerns, the OWTS Policy provides the option for a local agency to submit a LAMP (a Tier 2 program under the OWTS Policy) to the RWQCB for approval, and, upon approval, manage the installation of new and replacement OWTS to the extent authorized under that program and local authority. LAMPs approved under Tier 2 of the OWTS Policy provide an alternative method from Tier 1 programs to achieve the same policy purpose, which is to protect water quality and public health. In order to address local conditions, LAMPs may include standards that differ from Tier 1 requirements contained in Sections 7 and 8 of the OWTS Policy for new and replacement OWTS.

The purpose of the LAMP is to implement minimum standards to allow the continued use of OWTS or other sanitation facilities while protecting water quality and public health. To address the diverse range of geological and climatic conditions in the region, the County of San Diego (COSD), Department of Environmental Health and Quality (DEHQ) developed a LAMP as an alternative method to the Tier 1 requirements for new and replacement OWTS. The COSD LAMP was approved by the RWQCB on April 27, 2015 and by the County Board of Supervisors on June 24, 2015. This LAMP is effective unless withdrawn by DEHQ or revoked by the RWQCB and may be modified or updated upon approval by the COSD Board of Supervisors and the RWQCB.

The OWTS installation permitting process and the prescribed standards contained in the LAMP are designed to protect groundwater sources and surface water bodies from pollution through the proper siting, design installation, operation, and maintenance of individual new and replacement OWTS and other sanitation facilities in accordance with the provisions of the OWTS Policy and San Diego County Regulatory Code.

1.2 State/County Coordination

As OWTS discharge wastewater to the subsurface and may impact water quality, they are discharges regulated under California Water Code (CWC) section 13260, the Waste Discharge Requirements program implemented by the SWRCB and the RWQCBs. The SWRCB's OWTS Policy is regulation that was

required pursuant to CWC section 13290 et seq. and provides statewide minimum standards for small OWTS. The OWTS Policy includes a conditional waiver from the requirement for waste discharge requirements for OWTS owners when their OWTS meet the requirements and conditions contained within the OWTS Policy. OWTS are also typically regulated and permitted by local agencies under local ordinance authority derived from the California Constitution. CWC section 13002 provides that the provisions of CWC Division 7, the Porter-Cologne Water Quality Control Act (sections 13000-16104), and any ruling of the SWRCB, does not impose limitations on a county to adopt and enforce regulations not in conflict with these rules, or to declare, prohibit, and abate nuisances.

The OWTS Policy provides a tiered approach: Tier 0-Existing OWTS. No action needed except for those OWTS requiring Tier 3 or Tier 4 corrective actions; Tier 1-Statewide minimum siting, design, and construction standards for new and replacement OWTS; Tier 2-Allows for local agencies to implement alternative minimum standards to Tier 1 for new and replacement OWTS with an equivalent level of protection through a LAMP approved by the RWQCBs; Tier 3-Provisions for OWTS near impaired water bodies; and Tier 4-Requirements for OWTS needing corrective action.

The OWTS Policy and any OWTS provisions adopted in the RWQCB's Basin Plans provide the State's requirements for small OWTS regulation. State and Regional Boards are responsible for implementation of the OWTS Policy with local implementation of minimum standards contained in Tier 1 or Tier 2 for siting and design; minimum, interim actions in Tier 3 for OWTS near impaired water bodies; and minimum requirements for OWTS needing corrective actions in Tier 4. All actions by a local agency are limited to the extent of their local authority.

The COSD DEHQ implements a local OWTS permitting program for new and replacement OWTS and other sanitation facilities under local ordinance and a OWTS Policy Tier 2 program LAMP approved by the San Diego Regional Water Quality Control Board in 2015. The local program includes provisions for corrective action when an OWTS has defective components and OWTS that are no longer containing waste to the subsurface.

Except for implementing the minimum standards in the LAMP for new and replacement OWTS, the local program does not contain special provisions for addressing OWTS near impaired water bodies. OWTS near impaired water bodies are best regulated under the Federal and State programs established for these water bodies, such as the Total Maximum Daily Load (TMDL) and Waste Discharge Requirements programs. However, the local program does provide for the interim regulation of new and replacement OWTS near the impaired water bodies identified in the OWTS Policy, Attachment 2, at such time any are listed, until a TMDL implementation plan is adopted by the water boards. The OWTS Policy, Attachment 2 contains tables identifying impaired water bodies where OWTS are likely contributing to the impairment and would likely receive a loading reduction as part of a TMDL. The State Water Board, in consultation with the Regional Boards, determines which impaired water bodies are to be added or removed from the OWTS Policy, Attachment 2 tables and includes the dates by which a TMDL should be adopted for that water body (the TMDL should address all sources, including OWTS). Until a TMDL is adopted, new and replacement OWTS (not existing) within 600 feet of a listed water body must install supplemental treatment in accordance with OWTS Policy, Section 10-Tier 3 requirements.

1.3 Definitions

"303 (d) list" means the same as **"Impaired Water Bodies."**

"Advanced Protection Management Program" or "APMP" means the minimum required management program for all OWTS located near a water body that has been listed as impaired due to nitrogen or pathogen indicators pursuant to Section 303(d) of the Clean Water Act. The geographical area of an APMP is defined by the applicable TMDL. If no TMDL has been adopted, the geographical area is defined by special provisions in a LAMP, but only if the LAMP contains special provisions for the impaired waterbody. If there is no adopted TMDL or LAMP with special provisions, then it is defined as 600 linear feet from a water body listed in the OWTS Policy, Attachment 2. OWTS near impaired water bodies that are not listed in the OWTS Policy, Attachment 2, and do not have a TMDL, and are not covered by a LAMP with special provisions, are not addressed by Tier 3 of the OWTS Policy.

"Alternative toilet" means a holding tank, vault, composting, chemical toilet or other approved means of sewage disposal for non-residential uses in isolated areas, such as campsites, parks or trails, when no public sewer is available and it is impracticable to connect water to the area where the toilet is to be located, or for temporary or occasional uses authorized by the San Diego Regulatory Code or other County Code.

"Annual Operating Permit" means an annual operating permit issued to an owner of an OWTS where ongoing maintenance monitoring and report submittal is required.

"Basin Plan" means the same as "water quality control plan" as defined in Division 7 (commencing with Section 13000) of the Water Code. Basin Plans are adopted by each Regional Water Board, approved by the State Water Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region's boundaries and establish, for each, its respective beneficial uses and water quality objectives. Copies are available from the Regional Water Boards, electronically at each Regional Water Boards website, or at the State Water Board's *Plans and Policies* web page (http://www.waterboards.ca.gov/plans_policies/).

"Bedrock" means the rock, usually solid, that underlies soil or other unconsolidated, surficial material.

"Cap/Cap depth" means the depth measured from natural ground surface to the top of the gravel-fill in deep bed and vertical seepage pit dispersal systems.

"CEDEN" means California Environmental Data Exchange Network and information about it is available at the State Water Boards website or http://www.ceden.org/index.shtml.

"Cesspool" means an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools are not authorized under this LAMP. Cesspools differ from seepage pits because cesspool systems do not have septic tanks.

"Clay" means a soil particle; the term also refers to a type of soil texture. As a soil particle, clay consists

of individual rock or mineral particles in soils having diameters <0.002 mm. As a soil texture, clay is the soil material that is comprised of 40 percent or more clay particles, not more than 45 percent sand and not more than 40 percent silt particles using the United States Department of Agriculture (USDA) soil classification system.

"Cobbles" means rock fragments 76 mm or larger using the USDA soil classification systems.

"Cut/Slope" means any natural slope greater than 60% or man-made contour that exposes the vertical soil profile.

"Deep bed dispersal system" (formerly horizontal seepage pit) means a gravel filled excavation, four to six feet wide, six to seven feet deep with a cap depth of two to five feet, and length determined by the percolation rate of the soil, that receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.

"Defective system" (also referred to as a failing system) means an OWTS or other sanitation facility that allows sewage, human excrement, or other liquid wastes to be disposed of such that the waste is not confined underground or within its tank, or that constitutes a safety hazard. An onsite wastewater treatment system that requires frequent pumping to remove accumulated wastes in order to confine sewage underground is also a defective system whether or not pumping the system allows waste to be confined underground. An OWTS that becomes inundated during a storm event such that wastewater rises to the surface is also a defective system. OWTS that are suspected of inundation, including based on nearby stormwater testing, are not considered defective until confirmed by testing of that OWTS. Testing may include dye testing, performance evaluation, or other approved method.

"Dispersal system" means a leach field, shallow or deep bed, seepage pit, subsurface drip field, or other type of dispersal system for subsurface discharge and final wastewater treatment.

"Domestic wastewater" means wastewater with a measured strength less than high-strength wastewater and is the type of wastewater normally discharged from, or similar to that discharged from, plumbing fixtures, appliances and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may include wastewater from commercial buildings such as office buildings, retail stores, and some restaurants, or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater does not include wastewater consisting of recreational vehicle (RV) holding tank wastewater, such as at RV dump stations, but may include approved discharges of RV holding tank wastewater that do not contain any of the chemicals prohibited by Health and Safety Code Section 25210.2. Domestic wastewater does not include wastewater from industrial processes.

"Domestic well" means a groundwater well that provides water for human consumption and is not regulated by the State Water Resources Control Board.

"Dump station" means a facility intended to receive the discharge of wastewater from a holding tank

installed on a RV. A dump station does not include a full hook-up sewer connection at an individual space in a recreational vehicle park.

"Effluent" means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, supplemental treatment component, dispersal system, or other OWTS component.

"Electronic deliverable format" or **"EDF"** means the data standard adopted by the State Water Board for submittal of groundwater quality monitoring data to the State Water Board's internet-accessible database system GeoTracker (http://geotracker.waterboards.ca.gov/).

"Ephemeral stream" means a natural water course that carries only stormwater in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel, the aquatic bed is always above the water table, and stormwater runoff is the primary source of water. An ephemeral stream typically lacks the biological, hydrological, and physical characteristics commonly associated with the continuous or intermittent conveyance of water. The term intermittent means surface water flowing continuously during certain times of the year and more than in direct response to precipitation such as seasonally when the groundwater table is elevated or when snowpack melts.

"Existing OWTS" means an OWTS that was constructed and operating prior to the effective date of the OWTS Policy, May 13, 2013, and OWTS for which a valid construction permit has been issued prior to the effective date of the OWTS Policy.

"Flowing water body" means a body of running water flowing over the earth in a natural water course, where the movement of the water is readily discernible or if water is not present it is apparent from review of the geology that when present it does flow, such as in an ephemeral drainage, creek, stream, or river.

"Groundwater" means water below the land surface that is at or above atmospheric pressure.

"High-strength wastewater" means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams-per-liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.

"IAPMO" means the International Association of Plumbing and Mechanical Officials.

"Impaired water bodies" means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by US EPA pursuant to Section 303(d) of the federal Clean Water Act.

"Installation Permit" means a document issued by a local agency that allows the installation, construction, reconstruction, repair, addition, modification, or abandonment of an OWTS.

"Licensed installer" means a licensed General Engineering Contractor (Class A), General Building Contractor (Class B). Sanitation System Contractor (Specialty Class C-42), or Plumbing Contractor (Class C-36). Such licensed installer shall install all new and replacement OWTS in accordance with California Business and Professional Code Sections 7056, 7057, and 7058 and Article 3, Division 8, Title 16 of the California Code of Regulations.

"Local agency" means any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries; typically a county, city, or special district.

"Major repair" means either: (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater effluent from the dispersal field and/or wastewater backed up into plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served, or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating.

"Mound system" means an aboveground dispersal system (covered sand bed with effluent leach field elevated above original ground surface inside) used to enhance soil treatment, dispersal, and absorption of effluent discharged from an OWTS treatment unit such as a septic tank. Mound systems have a subsurface discharge.

"New OWTS" means an OWTS permitted after the effective date of the OWTS Policy, May 13, 2013, that is not a repair or a replacement.

"Nonconforming OWTS" means any existing, replaced, or repaired OWTS that does not conform to the current requirements related to system sizing, setbacks, groundwater separation, or allowable cover.

"NSF" means NSF International (a.k.a. National Sanitation Foundation), a not for profit, non-governmental organization that develops health and safety standards and performs product certification.

"Oil/grease interceptor" means a passive interceptor that has a rate of flow exceeding 50 gallons-per-minute and that is located outside a building. Oil/grease interceptors are used for separating and collecting oil and grease from wastewater.

"Onsite wastewater treatment system(s)" or "OWTS" means a system on a property not connected to a public sewer, that treats and disposes of sewage and other wastes produced on the property where the system is located using subsurface dispersal. The short form of the term may be singular or plural. OWTS includes a standard system consisting of a septic tank with effluent discharging into a subsurface dispersal system of a leach trench dispersal system, a chamber dispersal system, or a seepage pit dispersal system. OWTS also includes an OWTS with supplemental treatment. OWTS do not include "gray water" systems pursuant to Health and Safety Code Section 17922.12.

"Owner-Builder" means an individual or group of individuals who own the property on which they plan to construct, alter, repair, improve, or remodel a building or structure or appurtenance thereto in accordance with the requirements and limitations set forth in the Business and Professions Code, Section 7044. Business and Professions Code, Section 7026.1 defines any person who acts as consultant to an owner-builder is a contractor.

"Percolation test" means a method of testing water absorption of the soil. The test is conducted with clean water and test results can be used to establish the dispersal system design taking into consideration differences between hydraulic loading rates and the infiltrative rates associated with wastewater, especially higher strength wastewater.

"Person" means any individual, firm, association, organization, partnership, business trust, corporation, company, State agency or department, or unit of local government who is, or that is, subject to this LAMP.

"Pit-privy" (outhouse, pit-toilet, vault) means self-contained waterless toilet used for disposal of non-water carried human waste; consists of a shelter built above an underground self-contained, water-tight, concrete-lined tank, pit or vault into which human waste is discharged.

"Policy" means the *State Water Resources Control Board's Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems*.

"Pollutant" means any substance that alters water quality of the waters of the State to a degree that it may potentially affect the beneficial uses of water, as listed in a Basin Plan.

"Potable water" means water provided from a permitted public water system, as defined in Section 116275(h) of the California Health and Safety Code, that meets state and federal standards for consumption, a state small water system, as defined in Section 116275(n) of the California Health and Safety Code, that meets state standards for consumption, or groundwater from a permitted water well that is not part of a public water system or state small water system and that meets the following minimum water quality monitoring requirements: 1) at least one water sample obtained from the well within twelve (12) months of submittal to DEHQ for review shall be negative for the presence of total coliform bacteria and fecal coliforms or *Escherichia coli* (E. coli); 2) at least one water sample obtained from the well within twelve (12) months of submittal to DEHQ for review and analyzed for Nitrate (as nitrogen) shall be less than the maximum contaminant level as specified in the California Code of Regulations, Section 64431 (10 mg/L); 3) other sampling that may be required by the Director of Environmental Health based on known or suspected sources of pollution in the area that may affect the water quality of the well. The samples shall be analyzed by a laboratory certified by the State Water Resources Control Board for that analysis pursuant to California Health and Safety Code, Division 101, Part 1, Chapter 4, Article 3, commencing with Section 100825.

"Projected flows" means wastewater flows into the OWTS determined in accordance with provisions contained in this LAMP.

"Public water system" is a water system as defined in Section 116275(h) of the California Health and Safety Code and regulated by the State Water Resources Control Board or a Local Primacy Agency pursuant to the California Safe Drinking Water Act (California Health and Safety Code, Division 104, Part 12, Chapter 4).

"Public water well" is a ground water well serving a public water system. A spring which is not subject to the California Surface Water Treatment Rule, California Code of Regulations, Title 22, sections 64650 through 64666 is a public well.

"Qualified professional" means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist.

"Qualified service provider" means a person capable of operating, monitoring, and maintaining an OWTS in accordance with the OWTS Policy and local requirements. The individual must also be certified and/or competently trained by the manufacturer of an OWTS with supplemental treatment to install, maintain, service, and repair the specific model/type of OWTS.

"Regional Water Board" or "RWQCB" is any of the Regional Water Quality Control Boards designated by Water Code Section 13200. Any reference to an action of the Regional Water Quality Control Board in this LAMP also refers to an action of its Executive Officer, including the conducting of public hearings, pursuant to any general or specific delegation under Water Code Section 13223.

"Repair" is any action that modifies/replaces the existing dispersal system, replaces an existing septic tank, or modifies/replaces a major component of the onsite wastewater treatment system. Repairs require an Installation Permit issued by the DEHQ and must be inspected by DEHQ staff.

"Replacement OWTS" means an OWTS that has its treatment capacity expanded, or its dispersal system replaced or added onto, after the effective date of this LAMP. Replacements require an Installation Permit issued by the DEHQ and must be inspected by DEHQ staff.

"Sand" means a soil particle; this term also refers to a type of soil texture. As a soil particle, sand consists of individual rock or mineral particles in soils having diameters ranging from 0.05 to 2.0 mm. As a soil texture, sand is soil that is comprised of 85 percent or more sand particles, with the percentage of silt plus 1.5 times the percentage of clay particles comprising less than 15 percent using the USDA soil classification system.

"Sanitation facilities" means the method used to collect, store, or dispose of sewage, human excrement, or other liquid wastes associated with human habitation or activities. Sanitation facilities include but are not limited to holding tanks, vaulted privies, and chemical toilets.

"Septic tank" means a watertight, covered receptacle designed for primary treatment of wastewater and constructed to 1) Receive wastewater discharged from a building; 2) Separate settleable and floating solids; 3) Digest organic matter by bacterial action; 4) Store undigested solids; and 5) Clarify wastewater for further treatment.

"Silt" means a soil particle; this term also refers to a type of soil texture. As a soil particle, silt consists of individual rock or mineral particles in soils having diameters ranging from between 0.05 and 0.002 mm. As a soil texture, silt is soil that is comprised as approximately 80 percent or more silt particles and not more than 12 percent clay particles using the USDA soil classification system.

"Site" means the location of the OWTS and a reserve dispersal area capable of disposing of 100% of the design flow from all sources the OWTS is intended to serve.

"Site evaluation" means an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this LAMP.

"Soil" means the naturally occurring body of porous mineral and organic materials on the land surface, which is composed of unconsolidated materials, including sand-sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material. The various combinations of particles differentiate specific soil textures identified in the soil textural triangle developed by the USDA as found in Soil Survey Staff, USDA; *Soil Survey Manual, Handbook 18*, U.S. Government Printing Office, Washington, DC, 1993, p. 138. For the purposes of this Policy, soil shall contain earthen material of particles smaller than 0.08 inches (2 mm) in size.

"Soil structure" means the arrangement of primary soil particles into compound particles, peds, or clusters that are separated by natural planes of weakness from adjoining aggregates.

"Soil texture" means the soil class that describes the relative amount of sand, clay, silt and combinations thereof as defined by the classes of the soil textural triangle developed by the USDA (see definition of "Soil").

"Standard OWTS" means an OWTS consisting of a septic tank with effluent discharging into a subsurface dispersal system of a leach trench dispersal system, a chamber dispersal system, or a seepage pit dispersal system.

"State Water Board" or "SWRCB" is the State Water Resources Control Board.

"Stormwater feature" means a man-made private and public drainage facilities by which stormwater run-off may be conveyed to receiving waters, and includes but is not limited to, constructed channels and ponds, inlets to storm drains or pipes, or catch basins. For the purposes of this LAMP, "stormwater feature" does not include roads, streets, or street gutters.

"Supplemental treatment" or "STS" means any OWTS or component of an OWTS, except a septic tank

or dosing tank, that performs additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field.

"Surface runoff channel or swale" is a natural depression or channel that directs stormwater runoff over the land surface to the nearest flowing water or surface water body.

"SWAMP" means Surface Water Ambient Monitoring Program and more information is available at: http://www.waterboards.ca.gov/water_issues/programs/swamp/

"Telemetric" means the ability to automatically measure and transmit OWTS data by wire, radio, or other means.

"Total maximum daily load" or "TMDL" is a calculation of the maximum amount of a pollutant that a waterbody can accept and still meet the state's water quality standards. A TMDL is the sum of individual waste load allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. Section 303(d)(1) of the Clean Water Act requires each State to establish a TMDL for each impaired water body to address the pollutant(s) causing the impairment. In California, TMDLs are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained.

"Unstable land mass" means areas showing evidence of mass downslope movement such as debris flow, landslides, rockfall, and hummock hill slopes with undrained depressions upslope. Examples are landforms exhibiting slip surfaces roughly parallel to the hillside; landslide scars and curving debris ridges; fences, trees, and telephone poles that appear tilted; and tree trunks that bend uniformly as they enter the ground. Active sand dunes are unstable landforms.

"Vaulted-privy" means the same as pit-privy.

"Vertical seepage pit" means a drilled excavation that is gravel filled and receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.

"Waste discharge requirement" or **"WDR"** means an operation and discharge permit issued for the discharge of waste pursuant to Section 13260 of the California Water Code.

CHAPTER 2.0 LAMP SCOPE OF COVERAGE

2.1 Scope of Coverage

The scope of coverage under this LAMP encompasses the permitting of the installation of new and replacement OWTS, or one or more OWTS serving a single premise, up to a maximum of 3,500 gallons per day of low strength domestic wastewater only.

Any OWTS not regulated under the scope of the LAMP fall within the RWQCB jurisdiction for regulation. The DEHQ may issue an installation permit only after the siting and design have been approved by the RWQCB.

The scope of coverage under this LAMP for existing OWTS is limited to the permitting of OWTS for repairs to a septic tank, other structural repairs, defective component repairs, and for repairs to the dispersal system due to surfacing wastewater from the dispersal field and/or wastewater backup into plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served.

2.1.1 The following OWTS are not included in the LAMP scope of coverage:

2.1.1.1 OWTS (one or more) serving a project or premise with a cumulative projected wastewater flow of over 3,500 gallons per day.

2.1.1.2 OWTS that receives high strength wastewater unless the waste stream is from a commercial food service facility.

2.1.1.3 OWTS that receives high strength wastewater from a commercial food service facility with a BOD higher than 900 mg/L or that does not have a properly sized and functioning oil/grease interceptor.

2.1.1.4 OWTS receiving discharges of waste that are not domestic wastewater.

2.1.1.5 OWTS within an incorporated city or tribal jurisdictions, unless the authority has been delegated through specific municipal ordinance, memorandum of understanding, or another appropriate mechanism.

2.1.1.6 Existing OWTS where the RWQCB has determined the discharges are impacting groundwater to an extent requiring corrective actions.

2.1.1.7 OWTS where the RWQCB has determined that the discharges require effluent limitations and ongoing sampling, monitoring, and reporting, similar to activities related to waste discharge requirements issued by the RWQCB. These effluent limitations, ongoing sampling, monitoring, and reporting requirements are different from the requirement for OWTS utilizing supplemental treatment approved by DEHQ to be monitored/inspected biannually, as noted in Section 2.2.5.

2.1.1.8 Approval of siting, design and construction for OWTS proposed as the means of sewage disposal for subdivisions of land that exceed the minimum density allowed as shown in Table 3.7-1 for standard OWTS or the requirements in Section 3.7.9.2 for OWTS with supplemental treatment for nitrogen reduction and drip dispersal with vegetative uptake design.

2.1.1.9 New OWTS proposed for any development project or building permit that does not meet the minimum requirements of this LAMP.

2.1.1.10 Existing OWTS, except where the owner or owner's contractor has applied for a repair or replacement permit, or where the specific OWTS has been confirmed as defective for surfacing sewage or safety hazards and corrective action is required.

2.2 Use Limitations

The oversight of OWTS by DEHQ is limited to those systems as defined in this LAMP. Limitations exist for the use of OWTS related to the amount and type of wastewater flows that will be generated, types of systems, availability of public sewer and setbacks to public water supplies. The following are not allowed to be authorized by DEHQ.

2.2.1 Cesspools of any kind or size.

2.2.2 OWTS receiving a projected flow over 3,500 gallons per day of any strength or type of wastewater.

2.2.3 OWTS that utilize any form of effluent dispersal that discharges on or above the post installation ground surface such as sprinklers, exposed drip lines, free-surface wetlands, or a pond.

2.2.4 Slopes greater than 30 percent without a slope stability screening and/or report approved by a qualified professional.

2.2.5 OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections. The required biannual inspections performed by a qualified service provider and the annual operating permit, as specified in Chapter 9.0 of this LAMP, meet this requirement for OWTS utilizing supplemental treatment approved by DEHQ.

2.2.6 OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks.

2.2.7 Separation of the bottom of dispersal system to groundwater of less than two (2) feet for OWTS with supplemental treatment for nitrogen reduction, of less than three (3) feet for OWTS with supplemental treatment for pathogen reduction (disinfection), and of less than ten (10) feet for vertical seepage pits.

2.2.8 Installation of new or replacement OWTS where public sewer is available. Public sewer availability is defined as follows:

2.2.8.1 The property on which the structure is located abuts a public sewer, or a public sewer is located within 200 feet of the building.

2.2.8.2 The property is within the boundaries of the sewer district or annexation to the sewer district had been completed.

2.2.8.3 No easements must be obtained to access the sewer line.

2.2.8.4 This provision does not apply to replacement OWTS where the connection fees and construction costs are greater than twice the total cost of the OWTS and an OWTS can be installed that will meet the minimum requirements of this LAMP and not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses.

2.2.8.5 When a public sewer is not available, because one or more of the conditions above have not been satisfied, the drainage system of a building shall be connected to an approved and permitted OWTS.

2.2.9 Except as provided for in Item 2.2.10 and 2.2.11, new or replacement OWTS with minimum horizontal setbacks less than any of the following:

2.2.9.1 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth.

2.2.9.2 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet in depth.

2.2.9.3 Where the effluent dispersal system is within 600 feet of a public water well and exceeds 20 feet in depth, the horizontal setback required to achieve a two-year travel time for microbiological contaminants shall be evaluated by a qualified professional. In no case shall the setback be less than 200 feet.

2.2.9.4 Where the effluent dispersal system is within 1,200 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high-water mark of the reservoir, lake, or flowing water body.

2.2.9.5 Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high

water mark of the reservoir, lake or flowing water body.

2.2.10 For replacement OWTS that do not meet the horizontal separation requirements in Item 2.2.9 above, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such case, the replacement OWTS shall utilize supplemental treatment and other mitigation measures, unless the permitting authority finds that there is no indication that the previous system is adversely affecting the public water source, and there is limited potential that the replacement system could impact the water source based on topography, soil depth, soil texture, and groundwater separation.

2.2.11 For new OWTS, installed on parcels of record existing before May 13, 2013, which is the effective date of the State's OWTS Policy, that cannot meet the horizontal separation requirements in Item 10 above, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens as specified in Section 10.8 of the State's OWTS Policy and any other mitigation measures prescribed by DEHQ.

2.3 Prohibited Discharges

Discharges into an OWTS shall be limited to low strength domestic wastewater and wastewater from a commercial food service building with a BOD less than 900 mg/L and with a properly sized and functioning oil/grease interceptor. Owners and persons who maintain an OWTS shall ensure prohibited discharges, including those listed below, are not allowed to enter into an OWTS. Although not allowed to be discharged to an OWTS under the local permitting program, other discharges to land may be allowed by RWQCB and/or local stormwater discharge programs. For information on the requirements for other discharges to land, contact the appropriate RWQCB and local stormwater control program.

2.3.1 Automobile and Garage Waste. Wastewater from automobile washing or garage/shop floors.

2.3.2 Storm Drainage. Roof drainage or drainage waste resulting from natural runoff or irrigation.

2.3.3 Solvents and Toxics. Gasoline, cleaning solvents, paints, thinners, oils, or greases other than normal residential kitchen wastes, from hazardous materials.

2.3.4 Solids. Cloth, rope, metals, and solids of any kind.

2.3.5 Garbage. Garbage and similar waste material except when processed by approved garbage disposal units.

2.3.6 Kitchen Wastewater. Wastewater from any commercial food service building, such as a restaurant, bar, or other kitchen where food is prepared for public consumption, unless first directed through an approved oil/grease interceptor.

2.3.7 Air Conditioners. Waste drainage from water cooled refrigeration air conditioning.

2.3.8 Backwash. Backwash from water softeners, iron filters, and swimming pools.

2.3.9 Truck Terminal Wastes. Oil, grease, grit, and miscellaneous waste from operation of truck terminal, including wash water from trucks and garage floors.

2.3.10 Recreational Vehicle Holding Tank Waste. Wastes dumped from recreational vehicle holding tanks containing harmful chemical additives or other additives that may impact the functioning and effectiveness of the OWTS. Pursuant to California Health and Safety Code Section 25210.2, the use of products in recreational vehicle holding tanks, including deodorizers, that contain bronopol, dowicil, formalin, formaldehyde, glutaraldehyde, paraformaldehyde, para-dichlorobenzene, benzene, toluene, xylene, ethylene glycol, 1,1,1-trichloroethane, trichloroethylene, or perchloroethylene is prohibited. Additives may be biodegradable or enzyme-based, shall meet all state and local laws, and shall not impair water quality.

2.3.11 Industrial and Manufacturing Wastes. Wastes from non-domestic sources, including from industrial or manufacturing processes.

2.3.12 Food Processing Wastes. Wastes from commercial food manufacturing or food production processes, excluding retail food facilities.

2.4 Basin Plan Special Provisions for OWTS

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for adopting water quality policy, and any local ordinance and this LAMP must be consistent with these policies. This section reviews any special provisions contained in an applicable basin plan relating to OWTS within the scope of coverage of this LAMP.

2.4.1 Water Quality Control Plan for the Colorado River Region

The current version (including amendments effective on or before March 30, 2023) of the Water Quality Control Plan for the Colorado River Region (Colorado River Basin Plan) addresses OWTS in serval areas.

In Chapter 4-Implementation, Section II-Point Source Controls, Subsection H-Septic Systems, the Colorado River Basin Plan provides for OWTS to be regulated pursuant to the OWTS Policy and includes OWTS prohibitions and exceptions for three specific areas. None of these prohibition areas are located in San Diego County. The reference in this section to the Colorado River Basin Regional Board's 1979 *Guidelines for Sewage Disposal from Land Developments* was deleted in September of 2013 when the OWTS Policy was incorporated into the Colorado River Basin Plan (R7-2013-0049).

In Chapter 5-Plans, Policies, and Issues, Section II-Regional Water Board Policies, Subsection B-Sewage Disposal from Land Developments, there is a reference to the Colorado River Basin Regional Board's 1979 *Guidelines for Sewage Disposal from Land Developments* which had been deleted from Chapter 4-Implemenation as noted above. This section does not include a discussion on how this guidance is implemented within the scope and requirements of the OWTS Policy and its continued reference may

be an oversight.

In Chapter 5-Plans, Policies, and Issues, Section III-Regional Board Issues, Subsection A-Septic System Impacts to Ground Water Basins, the Colorado River Basin Plan identifies seven areas where unsewered communities with high densities of OWTS have the potential to negatively impact groundwater. Of the seven communities identified, only one, Borrego Springs, lies within San Diego County. This section provides, as staffing and finances permit, for the Regional Water Board to conduct investigations to determine the relative priority for sewering these identified communities.

2.4.2 Water Quality Control Plan for the San Diego Region

The current version (including amendments effective on or before September 1, 2021) of the Water Quality Control Plan for the San Diego Region (San Diego Basin Plan) addresses OWTS in several areas.

In Chapter 4-Implementation, OWTS is identified as a point source category (page 4-4, which is controlled by the Regional Board under the Waste Discharge Requirements (WDRs) permitting program (page 4-2). OWTS is also listed as an example of waste discharges subject to WDRs (page 4-11). In the section *Nitrogen in Interconnected Ground Waters and Surface Waters* (page 4-16), OWTS are listed as discharges with significant total nitrogen loads that may require total nitrogen effluents limits for projects or facilities that discharge to land near surface water bodies. The control mechanism included in this section is that the Regional Board may and most likely will adopt WDRs that require a reduced concentration in the proposed discharge effluents, reduction in total nitrogen loads, and or compliance with more stringent water quality objectives in receiving waters for the protection of beneficial uses of water resources.

This section identifies the OWTS Policy conditional waiver of WDRs for smaller OWTS that meet minimum design and siting conditions, including setbacks to surface water bodies, which allow for diffusion, dilution, and dispersion of an effluent plume before the affected ground water discharges to a surface stream. This section provides for OWTS that do not qualify for the waiver must be regulated with WDRs and includes as examples OWTS located at rural parks, schools, campgrounds, mobile home parks, roadside rest stops, small commercial or residential subdivisions, restaurants, resort hotels/lodges, small correctional facilities, temporary fire-fighting camps, and RV dump locations, including RV parks. For OWTS that pose a threat to surface water quality due to their size or proximity to a surface water body, the Regional Board will most likely require a Report of Waste Discharge (ROWD) to include a nitrate study.

OWTS are specifically addressed in the San Diego Basin Plan in the section *Onsite Wastewater Treatment Systems* (page 4-46). This section provides guidelines for new or replacement OWTS to proponents of projects involving new discharges of wastes to individual OWTS and also provides certain actions by local agencies to minimize water quality problems resulting from new OWTS. These include prohibiting OWTS where existing community sewerage collection systems are reasonably available, prohibiting use of new OWTS for any subdivision of land unless the governing body having jurisdiction determines that the use of individual OWTS will be in the best public interest, assuring individual OWTS are maintained to the satisfaction of the responsible health officer through local ordinances, and considering the cumulative

impacts of individual OWTS discharges as part of the approval process for development.

This section also provides information on the OWTS Policy and its conditional waiver (page 4-49). It provides that the Regional Board will review specific proposals for OWTS that do not meet waiver conditions specified in the OWTS Policy or conditions specified in the applicable LAMP at the request of the local agency. For such OWTS proposals, a ROWD must be filed with the Regional Board and WDRs must be obtained or waived by the Regional Board prior to recordation of the final map and/or issuance of a building permit (page 4-51).

In the section *Control of Nonpoint Source Pollution* (page 4-131), OWTS are included in a list of examples of categories of nonpoint source pollution. This section provides that the Regional Board will generally refrain from imposing effluent requirements on dischargers who are implementing Best Management Practices (BMP) in accordance with a waiver of waste discharge requirements. The BMPs become the primary mechanism for meeting water quality standards.

The Total Maximum Daily Loads section (page 4-185) of the San Diego Basin Plan provides information on the TMDL program regulating the amount of a pollutant that can be discharged into a water body and still maintain its water quality standards. Pollutant loadings in excess of the TMDL are expected to have an adverse effect on water quality by causing exceedances of the applicable water quality standards. Allowable pollutant loadings are calculated and assigned to all point source (as waste loading allocations) and nonpoint source (as load allocations) discharges to ensure that the applicable water quality standards are not exceeded in the receiving water. The TMDL for a pollutant in the receiving water, and the waste loading and loading allocations for a pollutant discharged from different sources into a water body are calculated at levels that, when each are met, are expected to result in the attainment of the associated water quality objectives for the pollutant and protection of the applicable beneficial uses in the receiving water. TMDLs are programs for the implementation of existing water quality standards and are incorporated into the Basin Plan. TMDLs are not self-implementing or directly enforceable for sources in the watershed but are implemented through the programs and authorities of the San Diego Water Board, including incorporating discharge prohibitions in the Basin Plan, issuing individual or general WDRs, or conditional waivers of WDRs.

In Chapter 5-Plans and Policies, the OWTS Policy is referenced but provides no additional details (page 5-13). In the Regional Board Resolutions section describing San Diego Regional Board resolutions important to the implementation of the Basin Plan, the following resolutions are referenced that have a nexus to OWTS:

- Resolution 79-44: *A Resolution Concerning 'Guidelines for New Community and Individual Sewerage Facilities*.'
- Resolution No. R9-2005-0036: *A Resolution Adopting an Amendment to the Water Quality Control Plan for the San Diego Region (9) to Incorporate Total Maximum Daily Loads (TMDLs) for Total Nitrogen and Total Phosphorus in the Rainbow Creek Watershed, San Diego County*.
- Resolution No. R9-2010-0001: *A Resolution Amending the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)*.

Chapter 7 of the San Diego Basin Plan provides information on TMDLs adopted into the Basin Plan. OWTS have been identified as a source or a potential source in the following TMDLs.

- TMDLs for Total Nitrogen and Total Phosphorus in the Rainbow Creek Watershed (2005)
    - Identifies OWTS, along with agricultural operations, as a source of total nitrogen to Rainbow Creek through the groundwater pathway (groundwater/surface water interface at Rainbow Creek.
    - Establishes numeric targets of 10 mg NO_3-N/L for Nitrate (as Nitrogen) and 1.0 mg/L for Total Nitrogen.
    - Establishes a Total Nitrogen Mass Load of 3,834 kg N/yr to Rainbow Creek, including 200 kg N/yr assigned to OWTS. It should be noted that although agricultural operations were also identified as contributing to this total nitrogen mass load through the groundwater pathway, they were omitted as a source for the total nitrogen mass load allocation.
    - Establishes an Annual Nutrient Loading Capacity for Total Nitrogen of 1,658 kg/yr for Rainbow Creek with a compliance date for attainment set at December 31, 2021.
    - Provides for OWTS owners, as nonpoint source dischargers, to implement pollution prevention methods and increase the use of applicable management measures and practices where needed to control and reduce nutrient discharges to Rainbow Creek.
    - Provides for the Regional Board to incorporate the OWTS Policy into the Basin Plan to address OWTS.
    - Provides for non-point source (source does not arise from a single identifiable source) dischargers to be subject to Regional Board enforcement action for failing to comply with applicable waiver conditions, WDRs, discharge prohibitions.
    - As the OWTS Policy was adopted into the Basin Plan in 2015 with no other conditions relating to OWTS, OWTS discharges are currently regulated by DEHQ under the LAMP and conditional waiver contained in the OWTS Policy, or by the Regional Board under SWRCB Order WQ 2014-0153-DWQ or individual waste discharge requirements.

- Revised TMDLs for Indicator Bacteria, Project 1-Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (2010)
    - Identifies persons as responsible for controllable nonpoint sources bacteria discharges causing or contributing to the impairments at beaches and creeks to include the owners and operators of individual OWTS.
    - Does not assign a Load Allocation to individual OWTS, which is equivalent to being assigned a load allocation of zero (not expected to or allowed to discharge a pollutant load as part of the TMDL).
    - Provides that nonpoint sources are or can be regulated under WDRs or conditional waivers of WDRs and for the San Diego Regional Board to utilize their regulatory tools and work with the nonpoint source dischargers and/or stakeholders when developing the WDRs.
    - Currently OWTS discharges within the geographical area of this TMDL regulated by DEHQ under the LAMP and conditional waiver contained in the OWTS Policy, or by the Regional Board under SWRCB Order WQ 2014-0153-DWQ or individual waste discharge

requirements.

2.5 LAMP Water Quality Assessment Program

The OWTS Policy Section 9.3.2 requires the local agency with an approved LAMP to maintain a Water Quality Assessment Program (WQAP). The WQAP's purpose is to determine the general operation status of OWTS, to evaluate the impact of OWTS discharges, and to assess the extent to which groundwater and local surface water quality may be adversely impacted.

2.5.1 The focus of the WQAP are the areas with characteristics or conditions listed below:

2.5.1.1 Degree of vulnerability to pollution from OWTS due to hydrogeological conditions.

DEHQ has identified two conditions that fall within this focus category and that are not addressed under a specific focus category, shallow groundwater and steep slopes. The areas identified with periods of shallow groundwater include the Rainbow Valley area in Fallbrook, the Citrus Avenue area in Escondido, the Valley Center and Woods Valley Roads areas in Valley Center, the Granite Hills area in El Cajon, and in the Ramona Basin. Slopes, including steep slopes, are found in most areas of San Diego County.

The current site evaluation process in the LAMP ensures new and replacement OWTS meet the current standards relating to shallow groundwater and steep slopes, providing protection to ground and surface waters equivalent to the OWTS Policy for these focus conditions.

2.5.1.2 High Quality waters or other environmental conditions requiring enhanced protection from the effects of OWTS.

For this focus category, DEHQ has identified the following 24 reservoirs that store local and imported water supplies and that require protection from the effects of OWTS.

Table 2.5-1: San Diego County Reservoirs	
Barrett - City of San Diego	Cuyamaca - Helix Water District
Dixon - City of Escondido	El Capitan - City of San Diego
Henshaw - Vista Irrigation District	Hodges - City of San Diego
Jennings - Helix Water District	Loveland - Sweetwater Authority
Lower Otay - City of San Diego	Maerkle - Carlsbad Municipal Water District
Miramar - City of San Diego	Morena - City of San Diego
Morro Hill - Rainbow Municipal Water District	Murray - City of San Diego
Olivenhain - San Diego County Water Authority	Poway - City of Poway

Ramona - Ramona Municipal Water District	Red Mountain- Fallbrook Public Utility District
San Vicente - City of San Diego	Sutherland - City of San Diego
San Dieguito - Santa Fe Irrigation District	Sweetwater - Sweetwater Authority
Turner - Valley Center Municipal Water District	Wohlford - City of Escondido

The current LAMP includes protective siting and design standards for new and replacement OWTS in areas near streams and reservoirs to provide protection to these reservoirs equivalent to the OWTS Policy for this focus condition.

2.5.1.3 Shallow soils requiring a dispersal system installation that is closer to ground surface than is standard.

The current site evaluation process in the LAMP ensures new and replacement OWTS meet the current standards relating to shallow soils, providing protection to ground and surface waters equivalent to the OWTS Policy for this focus condition.

2.5.1.4 OWTS is located in area with high domestic well usage.

San Diego County imports about 80% of its water. According to the State Water Board, Division of Drinking Water's *Drinking Water Watch* database, most of the population within the county (3,413,684) is within the service boundaries of a public water system, with 98% of this population being provided drinking water from a surface water source. Those areas not served by a surface water source have drinking water supplied by domestic and public water wells.

The current site evaluation process and setback standards in the LAMP ensure new and replacement OWTS are located to protect water quality in areas where groundwater is utilized to provide drinking water through water wells, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.5 Dispersal system is located in an area with fractured bedrock.

Although fractured rock generally comprises about 73% of the unincorporated areas of the county, varying characteristics and depths of soil overlay much of the fractured rock. The current site evaluation process and setback standards in the LAMP ensure new and replacement OWTS are located to prevent surfacing effluent and to protect water quality, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.6 Dispersal system is located in an area with poorly drained soils.

Most soils maps show generalized areas of soil categories, but they do show that soils in San Diego County vary greatly. This demonstrates the purpose of the site evaluation process, including the

requirement for percolation testing. The current site evaluation process and percolation test and soil evaluation requirements in the LAMP ensure new and replacement OWTS are located to prevent surfacing effluent and to protect water quality, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.7 Surface water is vulnerable to pollution from OWTS.

DEHQ works closely with other county departments to implement local ordinance aimed at reducing pollution to vulnerable surface water bodies. These include ordinance related to the permitting of new and replacement OWTS, ordinance addressing the response to reports of surfacing sewage and effluent, ordinance implementing watershed protection requirements, including those to minimize or eliminate polluted surface water runoff discharges into a county-maintained stormwater conveyance system. The County of San Diego has developed several programs to protect vulnerable surface waters, including a successful OWTS training and pumping rebate program.

These ordinances and programs, along with the current standards contained in the LAMP, minimize or eliminate surface water vulnerability to pollution from OWTS, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.8 Surface water within the watershed is listed as impaired for nitrogen or pathogens.

This condition focuses on surface water within a watershed that is listed as impaired for nitrogen or pathogens. Data from the *California 2010 Clean Water Act Section 303(d) and 305(b) Integrated Report* for the San Diego and Colorado River Basin Regions show three listed water bodies with OWTS as a potential source to the impairment. These three water bodies are Rainbow Creek (impairment due to nutrients), the Lower San Diego River (impairment due to pathogens), and the Tijuana River (impairment due to pathogens). The data also show the Santa Margarita Lagoon and River as impaired for nitrogen and pathogens, but with unknown sources.

Of these water bodies, Rainbow Creek and the Lower San Diego River have adopted TMDLs to address the impairments. TMDLs or alternative projects are under development by the RWQCB to address the impairments for the Santa Margarita Lagoon and River and the Tijuana River. The OWTS Policy addresses impaired water bodies in Tier 3 of the policy as follows.

2.5.1.8.1 The OWTS Policy provides discretion for local agencies to incorporate special provisions for OWTS near impaired water bodes as part of a LAMP. The County of San Diego LAMP does not contain special provisions for OWTS near impaired water bodies and the other provisions in Tier 3 of the policy are applicable for OWTS near impaired water bodies.

2.5.1.8.2 For areas where there is an adopted TMDL, the TMDL implementation plan must be used to address the impairment and this implementation plan supersedes all other requirements in Tier 3. Currently, except for a specified load reduction for OWTS in the Rainbow Creek TMDL, there are no special requirements in the San Diego Basin Plan for the siting, design, or permitting of OWTS in areas of impaired water bodies, beyond those approved in this LAMP.

2.5.1.8.3 For areas where there is no TMDL, new and replacement OWTS within 600 feet of an impaired water body listed in the OWTS Policy, Attachment 2 must meet specified supplemental treatment requirements. Currently there are no impaired water bodies listed in the OWTS Policy, Attachment 2 in San Diego County. However, these Tier 3 requirements would be implemented by DEHQ for new and replacement OWTS that are within the scope and coverage of the LAMP should a water body become listed in the OWTS Policy, Attachment 2 in the future.

2.5.1.8.4 OWTS near impaired water bodies that are not listed in the OWTS Policy, Attachment 2, and do not have a TMDL, and are not covered by special provisions in a LAMP are not addressed by Tier 3.

As the State and Regional Boards are responsible for adopting water quality policies and regulations in California, any local agency OWTS program must be consistent with these State policies and regulations. Currently, the LAMP contains provisions that are consistent with existing State policies and regulations. Should any future water quality policy or regulation be adopted by the RWQCB to address impaired water bodies in San Diego County, DEHQ will implement those requirements for new and replacement OWTS that fall within the scope and coverage of the LAMP.

2.5.1.9 OWTS is located within an area of high OWTS density.

DEHQ looked at this condition by reviewing the density of OWTS in locations of parcels with areas equal to or less than 0.5 acres. Many of these areas are also located within public water system boundaries and are served by public water. The current subdivision of land, site evaluation process, and minimum siting and design requirements in the LAMP ensure new and replacement OWTS are located to protect water quality, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.10 A parcel's size and its susceptibility to hydraulic mounding, organic or nitrogen loading, and whether there is sufficient area for OWTS expansion in case of failure.

The current subdivision of land, site evaluation process, and minimum siting and design requirements in the LAMP ensure new and replacement OWTS are located to protect water quality, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.11 Geographic areas that are known to have multiple, existing OWTS predating any adopted standards of design and construction including cesspools.

Although there may be some individual OWTS that meet this condition, there are no known geographical areas meeting this description. DEHQ has no information of any existing cesspools at this time. The County of San Diego has had adopted standards in ordinance for the design and construction of OWTS since at least the early 1960s. These standards have been updated at least twice since that time.

The current site evaluation process and minimum siting and design requirements in the LAMP ensure new and replacement OWTS are located to protect water quality, providing protection equivalent to the OWTS Policy for this focus condition.

2.5.1.12 Geographic areas that are known to have multiple, existing OWTS located within current setback standards or those setbacks DEHQ finds appropriate for that area.

Although there may be individual OWTS that meet this condition, there are no known geographical areas that meet this description. Existing OWTS requiring repair that cannot meet a current standard must be issued a variance. Typically, a reduction in the size of the required dispersal field will be proposed rather than a reduction to a setback adopted to protect water quality. Variances for repairs to OWTS are only issued when necessary and only in substantial conformance, to the greatest extent practicable, with the provisions of the LAMP, consistent with the OWTS Policy. All new OWTS and OWTS for new development projects must meet the minimum requirements of the LAMP.

2.5.2 The WQAP also includes the monitoring and analysis of the following:

2.5.2.1 Water Quality Data to include data for nitrates and pathogens from OWTS. As water quality data is not collected as part of the local OWTS permitting program, DEHQ may review the following data sources to meet this requirement.

2.5.2.1.1 Any domestic well or public water system sampling reports available to DEHQ.

2.5.2.1.2 Any water quality testing reports performed as part of a National Pollutant Discharge Elimination System (NPDES) permit.

2.5.2.1.3 Data contained in the California Water Quality Assessment database.

2.5.2.1.4 Groundwater sampling performed as part of Waste Discharge Requirements.

2.5.2.1.5 Groundwater data collected as part of the Groundwater Ambient Monitoring and Assessment Program and available in the GeoTracker database.

2.5.2.2 A review of complaints, variances, failures, and other inspection data compiled in accordance with Section 2.6.1.

2.6 LAMP Reporting

Consistent with the OWTS Policy, DEHQ will perform the following data collection, reporting, and notifications.

2.6.1 Annual Report

2.6.1.1 Pursuant to the OWTS Policy Section 3.3, as a local agency permitting OWTS, DEHQ will report annually (by February 1) to the San Diego Regional Water Board with a copy to the Colorado River Basin Regional Water Board. The annual report shall include the following information.

2.6.1.1.1 The number and location of complaints pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved.

2.6.1.1.2 The applications and registrations issued as part of the local septic tank cleaning registration program pursuant to Section 117400 et seq. of the California Health and Safety Code.

2.6.1.1.3 The number, location and description of permits issued for new and replacement OWTS and which Tier the permit was issued. Tier designations can be found in the State Water Board's OWTS Policy.

2.6.1.1.4 All groundwater and surface water data generated by DEHQ, submitted in the format prescribed in the OWTS Policy.

2.6.1.2 In addition to the reporting requirements in Section 2.6.1.1, OWTS Policy Section 9.3.3 requires a local agency with an approved LAMP to also annually report a summary of the status of the following items.

2.6.1.2.1 The number, location and description of permits issued for OWTS where a variance from the approved LAMP was granted.

2.6.1.2.2 A summary of the status of the Water Quality Assessment Program.

2.6.2 Five-Year Evaluation Report

OWTS Policy Section 9.3.3 requires a local agency with an approved LAMP to submit, every fifth year after approval, an evaluation of the monitoring program and an assessment of whether water quality is being impacted by OWTS. The evaluation report shall identify any changes to the LAMP to address impacts from OWTS for those OWTS within the scope and coverage of the LAMP.

2.7 Notifications

2.7.1 Prior to issuance of a permit to install a new or replacement OWTS that is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, in the drainage catchment in which the intake point is located, and located such that it may impact water quality at the intake point, DEHQ will notify the owner of the public water system electronically or in writing of the proposed OWTS permit installation and request any recommendations or comments to be provided to DEHQ within 15 days of receipt of the notification. If the owner of the public water system cannot be identified, this notice will be provided to the State Water Resources Control Board, Division of Drinking Water program. The notification will include a copy of the permit application that includes the following information.

2.7.1.1 A topographical plot plan for the parcel showing the OWTS components, property boundaries, proposed structures, physical address, and name of property owner.

2.7.1.2 The estimated wastewater flows, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils.

2.7.2 Upon discovery of a defective OWTS, but no later than 72 hours after discovery, notification will be provided to the owner of a public well or a surface water intake and to the SWRCB, when that OWTS is located:

2.7.2.1 Within 150 feet of a public water well.

2.7.2.2 Within 200 feet of the high-water mark of a surface water drinking water supply where the dispersal system is within 1,200 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point.

2.7.2.3 Within 400 feet of the high-water mark of a surface water drinking water supply where the dispersal system is between 1,200 and 2,500 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point.

CHAPTER 3.0 GENERAL REQUIREMENTS

3.1 Registration Requirements

No Qualified Professional, Licensed Installer, and Qualified Service Provider shall perform a site evaluation, percolation test, OWTS design, OWTS installation, or OWTS monitoring, servicing, or reporting without a valid registration with DEHQ.

3.1.1 Individual Qualified Professionals, Licensed Installers, and Qualified Service Providers shall complete and submit a registration form and associated fees to DEHQ and schedule an initial consultation. The registration shall include, at a minimum, the individuals name, current license number and status, and the mailing address where any correspondence or notifications shall be mailed.

3.1.2 The registrant shall demonstrate a sufficient scope of knowledge and experience related to the specific service or services the individual performs during an initial consultation. This information includes, but is not limited to, the following:

3.1.2.1 Laws, rules, regulations, and ordinance relating to OWTS requirements for San Diego County.

3.1.2.2 Minimum requirements for OWTS siting, design, and construction as provided in the approved LAMP.

3.1.2.3 Demonstration of a minimum of one (1) year experience designing, installing, monitoring, or servicing OWTS to the extent of their licensure or registration. For individuals designing, installing, monitoring, or servicing OWTS with supplemental treatment for nitrogen or pathogens, a demonstration of a minimum of two (2) years of experience is required.

3.1.3 Once registered, the registrant shall submit an annual renewal application with any associated fee providing updated information to maintain an active registration.

3.1.4 A registration may be revoked or suspended upon a violation of the requirements of this Chapter. DEHQ shall provide a written 30 calendar day notice of the intent to revoke or suspend a registration. The written notice shall describe the specific violation or violations. The registrant may submit a request for an office consultation, with the associated fee, to provide any information related to the matter for consideration.

3.1.4 An Owner-Builder who intends to apply for a permit to install, repair, replace, or add to an OWTS shall complete an initial consultation with DEHQ to demonstrate sufficient knowledge on the siting, design, and construction of an OWTS to effectively construct and install an OWTS that meets the minimum requirements of this LAMP.

3.2 Qualified Professionals

3.2.1 General Description

A Qualified Professional is an individual licensed or certified by the State of California to design OWTS and practice as professionals for other associated reports, to the extent allowed under their license or registration and their education and experience. A Qualified Professional shall be a Professional Engineer licensed under Business and Professions Code, Division 3, Chapter 7, a Professional Geologist licensed under Business and Professions Code, Division 3, Chapter 12.5, or a Registered Environmental Health Specialist licensed under Health and Safety Code, Division 104, Part 1, Chapter 4, or other persons as authorized in the Business and Professions Code.

Qualified Professionals shall prepare plans and reports in accordance with accepted industry standards, including the provision of complete and accurate minimum information as required and specified in this LAMP or as requested by DEHQ. All plans, specifications, reports, and other documents shall be prepared by, or under the responsible charge of, a licensed Qualified Professional and shall include his or her name and license number. All plans, specifications, and reports shall bear the signature and seal or stamp of the licensee and the date of signing and sealing or stamping, if appropriate.

3.2.1.1 Professional Engineer Scope of Service

Business and Professions Code Section 6731 defines civil engineering to include activities in connection with fixed works for sewerage, including the preparation or submittal of designs, plans and specifications and engineering reports and the coordination of the work of professional, technical, or special consultants.

According to the California Department of Consumer Affairs, Board for Professional Engineers, Land Surveyors, and Geologists guidance, civil engineers prepare design and repair recommendations for drainage systems, septic systems, foundations, and retaining walls. They also prepare grading plans and topographic maps of the elevations and contours of the land. Geotechnical engineers are civil engineers who have obtained additional experience and passed a specialized geotechnical engineering examination which authorizes them to use the titles “Geotechnical Engineer,” “Soil Engineer,” or “Soils Engineer.” Geotechnical engineering includes the investigation and engineering evaluation of earth materials including soil, rock, groundwater, and man-made materials and their interaction with earth retention systems, foundations, and other civil engineering works. Geotechnical engineers apply the principles of soil mechanics and the earth sciences and are knowledgeable about engineering laws, formulas, construction techniques, and performance evaluation of civil engineering works influenced by earth materials.

3.2.1.2 Certified Engineering Geologist and Certified Hydrogeologist Scope of Practice

The Business and Professions Code, Division 3, Section 12.5 provides for licensing for persons engaged in the practice of geology. Section 7802 defines geology as that science which treats of the earth in general; investigation of the earth’s crust and the rocks and other materials which compose

it; and the applied science of utilizing knowledge of the earth and its constituent rocks, minerals, liquids, gases and other materials for the benefit of mankind.

According to the California Department of Consumer Affairs, Board for Professional Engineers, Land Surveyors, and Geologists guidance, geologists conduct surface and underground investigations of the earth materials, history and structure of sites and provide interpretations of what they see. Certified Engineering Geologist and Certified Hydrogeologists are the two current licensed specialties. Certified Engineering Geologists apply geologic principles to the safe development and grading of land, building of structures, search for groundwater resources, cleanup of underground contamination and repairing of geologic hazards. They investigate geologic constraints such as landslides, ground subsidence, earthquake faults and erosion and have special training in geology for working on civil engineering problems. Certified Engineering Geologists evaluate the underground conditions of properties in a variety of ways to aid in finding out the engineering and environmental aspects of a project or site. They are also familiar with regulations pertaining to land use and repair that require permits from various governmental agencies. Certified Hydrogeologists apply geologic principles to the search for and cleanup of subsurface contamination and the discovery and development of groundwater resources. They complete Phase I, II and III environmental investigations. Certified Hydrogeologists evaluate the underground conditions at sites in a variety of ways to find out the environmental aspects of a project.

Business and Professions Code, Section 7839 specifically prohibits Certified Engineering Geologists or Certified Hydrogeologists from offering or practicing civil engineering in any of its various recognized branches.

3.2.1.3 Registered Environmental Health Specialist

Health and Safety Code Section 106615(e) provides the scope of practice in environmental health to mean the practice of environmental health by Registered Environmental Health Specialists in the public and private sector and includes, but is not limited to, organization, management, education, enforcement, consultation, and emergency response for the purpose of prevention of environmental health hazards. The promotion and protection of the public health and the environment in several areas, including housing, land use, solid, liquid, and hazardous materials management, and onsite septic systems. Section 106620 provides an exemption to Section 6731 of the Business and Professions Code and authorizes a Registered Environmental Health Specialist to design OWTS. Except for the design of OWTS, this exemption does authorize a Registered Environmental Health Specialist to design any of the other fixed works defined in Section 6731.

3.2.2 Professional Standards and Practice within Area of Competence

Qualified Professionals shall act in accordance with the provisions of their respective licensing laws and regulations, including Health and Safety Code Section 106715, and California Code of Regulations, Title 16, Sections 475 and 3065, including the following.

3.2.2.1 Qualified Professionals shall practice and perform work only in the field or fields in which

they are by education and/or experience fully competent and proficient.

3.2.2.2 Qualified Professional shall provide professional services for a project in a manner that is consistent with the laws, codes, ordinances, rules, and regulations applicable to that project, and may obtain and rely upon the advice of other professionals (e.g., architects, attorneys, professional engineers, professional land surveyors, and other qualified persons) as to the intent and meaning of such laws, codes, and regulations.

3.2.2.3 Qualified Professionals (together with those whom the professional may engage as consultants) shall perform, or offer to perform, only those professional services for which they are qualified by education, training, experience, and licensure as required by law, in the specific technical and scientific areas involved.

3.2.2.4 Qualified Professionals shall act with competence and reasonable care and shall apply the technical knowledge and skill which is ordinarily practiced by professionals in good standing, practicing in this state under similar circumstances and conditions.

3.2.2.5 Qualified Professionals shall only express professional opinions that have a basis in fact, are within the scope of the professional's own experience or knowledge and are generally accepted principles.

3.2.2.6 Qualified Professionals shall not misrepresent data and/or its relative significance in any technical report.

3.2.2.7 Qualified Professionals shall not misrepresent the completeness of the professional documents submitted to a government agency.

3.2.3. A Qualified Professional who fails to provide plans, specifications, reports, and other documents that meet the minimum required information as specified in this LAMP or as requested by DEHQ, or who provide incomplete, false, or misrepresented information, including actions as described in Business and Professions Code Section 6775 and 7860, Health and Safety Code Section 106715, and California Code of Regulations, Title 16, Sections 475 and 3065 may be subject to referral to the appropriate licensing Board or Committee for investigation.

3.3 Licensed Installers

3.3.1 General Description

Licensed Installers shall be a General Engineering Contractor (Class A), General Building Contractor (Class B). Sanitation System Contractor (Specialty Class C-42), or Plumbing Contractor (Class C-36). Such licensed installer shall install all new and replacement OWTS in accordance with California Business and Professional Code Sections 7056, 7057, and 7058 and Article 3, Division 8, Title 16 of the California Code of Regulations.

3.3.2 Minimum Standards

OWTS shall be installed, constructed, reconstructed, repaired, added to, modified, or abandoned as follows.

3.3.2.1 Under a valid permit issued by DEHQ, the standards provided by state and local laws and regulations, and this LAMP.

3.3.2.2 Using appropriate materials and accepted trade standards for good and workmanlike construction.

3.3.2.3 In accordance with plans or specifications as approved by DEHQ. All changes to approved plans or specifications must be submitted to DEHQ for review and receive approval prior to the commencement of any work.

3.3.3 Any person who commences work to install, construct, and/or repair an OWTS without first obtaining a permit, or without first ensuring a valid permit was obtained by another qualified person, is in violation of San Diego County Regulatory Code Section 68.325. Any person who fails to meet the minimum standards in this LAMP, local ordinance, or State law, including but not limited to, the Business and Professions Code Division 3, Chapter 9, may be subject to enforcement action and/or referral to the California Contractor's State Licensing Board for investigation.

3.3.4 Unlicensed individuals who commence work to install, construct, and/or repair an OWTS in violation of the requirements of local ordinance, this LAMP, and Business and Professions Code Division 3, Chapter 9 shall be subject to referral to the California Contractor's State Licensing Board for investigation.

3.4 Qualified Service Providers

3.4.1 A Qualified Service Provider must be certified and/or competently trained by the manufacturer of an OWTS with supplemental treatment to install, maintain, service, and repair the specific model/type of OWTS.

3.4.2 The qualified service provider shall be responsible for and capable of providing the activities listed in Section 9.3.6.

3.5 Owner-Builders

A property owner who intends to obtain a permit to install all or part of an OWTS must first review, initial and sign an Owner-Builder Declaration and Notice to Property Owner form provided by DEHQ and complete a consultation with DEHQ demonstrating sufficient knowledge and skill to effectively install an OWTS that meets the minimum requirements of this LAMP. A property owner who demonstrates adequate knowledge and skill may obtain a permit to install an OWTS in accordance with an OWTS Layout Report completed by a Qualified Professional and approved by DEHQ.

3.6 Mandatory Public Sewer Connection Requirements

3.6.1 Installation of new or replacement OWTS where public sewer is available. Public sewer availability is defined when all the following applies:

3.6.1.1 The property on which the structure is located abuts a public sewer, or a public sewer is located within 200 feet of the building.

3.6.1.2 The property is within the boundaries of the sewer district or annexation to the sewer district has been completed.

3.6.1.3 No easements must be obtained to access the sewer line.

3.6.2 Section 3.3.1 does not apply to replacement OWTS where the connection fees and construction costs are greater than twice the total cost of the OWTS and an OWTS can be installed that will meet the minimum requirements of this LAMP and not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses.

3.6.3 When a public sewer is not available, because one or more of the conditions above have not been satisfied, the drainage system of a building shall be connected to an approved and permitted OWTS.

3.7 Land Use and Development Requirements

3.7.1 County DEHQ and Local Land Use Agency Coordination

Most development and building standards require the approval of an OWTS by the agency having jurisdiction either as part of the permitting process or before certain permits can be issued or are considered finalized. Although separate processes, DEHQ coordinates the review and permitting of OWTS and other sanitation facilities with other local land use agencies to the extent practical. This coordination is important as the siting and design of an OWTS is dependent on many factors, including the location, scope and extent of a specific project. A DEHQ OWTS approval or permit is never a substitute for a required local grading, land use, or building permit. Similarly, no local land use approval or permit is a substitute for an OWTS approval or permit, or a guarantee that such a permit can be issued. This section discusses requirements in the San Diego Regulatory Code for projects where OWTS usage is proposed.

Whenever an application for a land use project requires DEHQ's review (i.e., proposes OWTS as a means of sewage disposal), the applicant shall submit an application requesting such a review on a form provided by DEHQ and shall submit any additional documents requested, including an OWTS Layout Report as described in Section 3.8.2. DEHQ shall notify the applicant in writing that the OWTS Layout Report is approved, or, if it is disapproved, the notice shall state the reasons for the disapproval.

3.7.1.1 No property shall be developed more than its capacity to absorb sewage effluent properly

by the means provided in this LAMP.

3.7.2 OWTS on Existing Lots

The process for obtaining an OWTS Installation Permit for development on a legal lot is described in this section. This process must be completed even if a lot has previously been found suitable for OWTS usage by the County at that time. Typically, any such prior determination will be noted in land use records, e.g., through a map or plan notation that the lot is "approved" or "certified" for a septic system, or in a separate County-issued "certificate of compliance". These notes and certificates may also state conditions for an acceptable OWTS, such as a minimum required leach line length. However, these map and plan notations and certificates of compliance were issued as a demonstration of the feasibility to install an OWTS on a lot based on conditions and/or standards in effect at that time but may not reflect current minimum requirements and may exceed the limits of DEHQ's current permitting authority. Proposed OWTS must meet current requirements at the time of application for an OWTS Installation Permit and have percolation testing/soil profile data to support the proposed OWTS design.

There are several reasons that prior County certifications as part of the land use process do not ensure that an OWTS permit will be issued. First, DEHQ is only authorized to issue OWTS Installation Permits pursuant to the OWTS Policy, this approved LAMP, and local ordinance. Second, site characterization work and analysis performed to support prior County certifications may have been the best practice at the time (e.g., in a period of below normal rainfall), but may be inadequate to support a current OWTS Installation Permit. Third, new information may have come to light since a certification was issued, due to measurements taken on or near the site under different rainfall conditions. This is more likely to be the case for older certifications. Fourth, these certifications are not based on detailed project and OWTS designs and layout plans but were based on a general determination that the lot was suitable for OWTS usage. Finally, these certifications provide no legal entitlement. Even if a certification was construed as a permit to construct an OWTS, that permit would expire after one year unless the system was actually constructed, inspected, and given final approval.

The information used to determine a lot was suitable for OWTS usage may still be relevant at many sites. This is more likely when the information relied on for the certification is recent, meets current requirements, and was collected during a normal average rainfall year.

3.7.3 Basin Plan Requirements

The Implementation Chapter of the Basin Plan for the San Diego Region provides guidelines for OWTS usage that includes assumptions for local agencies noted below.

3.7.3.1 Prohibit the use of new community and individual OWTS where existing community sewerage collection systems are reasonably available. The determination of whether or not existing systems are reasonably available should be the responsibility of the local agency or agencies having jurisdiction over the project.

3.7.3.2 Prohibit the use of new individual OWTS for any subdivision of land unless the governing

body having jurisdiction determines that the use of individual disposal systems will be in the best public interest.

3.7.3.3 Assure that individual OWTS are maintained to the satisfaction of the responsible health officer. This could be accomplished through establishment of special maintenance districts, by the amendment of existing ordinances to assure adequate maintenance documented through periodic inspections, or other alternatives as deemed appropriate by the local health officer.

3.7.3.4 Consider the cumulative impacts of individual OWTS discharges as a part of the approval process for development.

3.7.4 Local Land Use and Development Purpose. The review of applications for subdivisions of land, lot line adjustments, major and minor use permits, building permits, grading permits, and other land use development projects is to determine that the site is suitable for OWTS usage or other sanitation facilities if allowed, and that an OWTS can be installed that meets the minimum requirements of the San Diego Regulatory Code, San Diego Zoning Ordinance, any RWQCB Basin Plan requirements relating to OWTS, and this LAMP. Where applicable, the review is also to determine that there is adequate potable well water supply to serve the project. Notwithstanding other development project requirements, compliance with the LAMP standards is required to establish and maintain coverage under the conditional waiver of waste discharge requirements for OWTS that is contained in the OWTS Policy. Owners of OWTS not covered under this conditional waiver must submit a report of waste discharge to the RWQCB for their OWTS discharges.

3.7.5 Building Permit and Changes of Use or Occupancy Review. Applications for any building permit or a change of use or occupancy of an existing building shall submit an OWTS Layout Report that demonstrates the parcel and any exiting or proposed OWTS meet the requirements of this LAMP. Except as provided below, an approved OWTS Layout Report is required prior to the issuance of the building permit or other approval. Applications for a building permit or change of use or occupancy may be processed over the counter if sufficient information is on file for the location and design of the OWTS and water supply, including an accurate representation of the OWTS layout design.

3.7.5.1 No permit to install an OWTS shall be issued unless the applicant provides proof of the submittal of an application for a building permit. The OWTS installation permit shall be given final approval prior to occupancy.

3.7.5.2 The site evaluation and other studies shall address the minimum density of dwelling units allowed for the parcel as shown in Tables 3.7-1 and 3.7-2 and Sections 3.7.9.1 and 3.7.9.2.

3.7.5.3 Because of the many factors that determine if a specific parcel is suitable for OWTS usage, it is recommended property owners complete the OWTS Layout Report and confirm the site can support the use of an OWTS before a significant investment is made towards building or architectural plans.

3.7.6 Use Permits. Any person making an application for a land use project, such as a minor or major

use permit or land development project, or to modify or expand an existing land use permit, shall submit an OWTS Layout Report and any other required information or studies as requested to DEHQ for review and approval as part of the application process. The OWTS Layout Report shall demonstrate the site conditions and proposed use are suitable for OWTS usage, that the site is adequate to accommodate the projected peak sewage flows from the building(s) the system will serve, and that the proposed OWTS can meet all requirements of this LAMP.

3.7.7 Subdivisions of Land, Lot Line Adjustments, Certificates of Compliance. San Diego Regulatory Code, Title 8, Division 1 provides for all individual lots proposed in applications for subdivisions of land, lot line adjustments, and certificates of compliance to be certified by DEHQ as suitable for OWTS usage.

3.7.7.1 This requirement is satisfied with an approved OWTS Layout Report that demonstrates an OWTS that meets all current requirements in this LAMP is installed or can be installed on each lot, including density of OWTS requirements, adequate area for the OWTS, and an area of equal size reserved for future OWTS repair or replacement. A grading plan, if required as part of the application process, shall be submitted to DEHQ for review with the OWTS Layout Report.

3.7.7.2 This demonstration shall be made as part of the application process and shall not be a condition of approval to a tentative map or tentative parcel map. No tentative map, tentative parcel map, adjustment plat, certificate of compliance, or revisions to these maps or documents shall be approved until the applicant obtains this certification from DEHQ for each lot. A lot identified as a designated remainder on a tentative map or a tentative parcel map at the time of the subdivision application is not subject to this certification but may be subject to this demonstration as part of a separate discretionary permit or building permit application.

3.7.7.3 No part of on OWTS shall be located on any lot other than the lot that is the site of the building or structure that will be served by the OWTS.

3.7.7.4 Revisions to an approved tentative map or tentative parcel map are reviewed to ensure the changes do not impact the determination of feasibility for OWTS on each lot. A new OWTS Layout Report may be required, if needed, to make this determination.

3.7.7.5 Applications for a time extension for a tentative map or tentative parcel map shall be reviewed to determine if any changes in laws, ordinances, regulations, or policies requires changes to the proposed OWTS for each lot. A new OWTS Layout Report may be required, if needed, to make this determination.

3.7.7.6 Applications for subdivisions of land and certificates of compliance are required to provide proof of adequate potable well water supply to each lot prior to the approval of a final map, parcel map, or certificate of compliance.

3.7.7.7 A final map or a parcel map shall comply with all requirements of the approved or conditionally approved tentative map or tentative parcel map and shall not result in the reduction of area needed for required water supply well or OWTS and reserve areas. Where minimum lot sizes

for a subdivision have been reduced based on the proposal to utilize OWTS with supplemental treatment for nitrogen reduction, the developer shall include a statement on the final map or parcel map acknowledging only OWTS with supplemental treatment for nitrogen reduction are approved to be installed on each lot.

3.7.7.8 Lots proposed for adjustment which are developed may be processed over the counter if sufficient information is on file for the location, design, and layout of the OWTS and water supply, including an accurate representation of the OWTS layout design. An OWTS Layout Report is required for all vacant lots proposed for adjustment.

3.7.7.9 Lots that do not meet the minimum requirements for OWTS prior to the lot line adjustment application may be approved if the adjustment does not result in any greater degree of nonconformity.

3.7.7.10 DEHQ may exempt a lot line adjustment from a review and approval certification in the following situations. A site consultation may be required to verify the conditions are consistent with these exemption provisions.

3.7.7.10.1 The adjustment has no effect on the suitability of the lot to support an OWTS. This may include large acreage lots with multiple potential areas for OWTS usage but no approved OWTS Layout Report for one or more lots. The sign-off must state: *"EXEMPT FROM CERTIFICATION per San Diego Zoning Ordinance, Section 6903(h). Not approved for development without an approved OWTS Layout Report demonstrating the suitability of the parcel for onsite wastewater treatment system usage for the proposed development."*

3.7.7.10.2 The lots are designated for use as open space easements or unmanned public facilities, such as for a water tank, and has no other uses or structures with plumbing fixtures proposed requiring the installation of an OWTS. The sign-off must specifically state the proposed use of the site and that the site is not approved for the installation of an OWTS: *"EXEMPT FROM CERTIFICATION per San Diego Zoning Ordinance, Section 6903(h). Site is proposed for use as an [unmanned public facility, open space easement]. Not approved for any development requiring the use of an onsite wastewater treatment system."*

3.7.7.10.3 One or more lots are unbuildable due to rock, groundwater, slope, or other site conditions and will remain unbuildable after the adjustment. The sign-off must state: *"EXEMPT FROM CERTIFICATION per San Diego Zoning Ordinance, Section 6903(h). Existing lot is not suitable or approved for the installation of an onsite wastewater treatment system. Site development requires connection to a public sewer."*

3.7.8 Grading Plans, Grading Permits, Improvement Plans. DEHQ reviews grading plans, improvement plans, grading permits to ensure existing or proposed OWTS meet minimum ordinance and LAMP requirements and to prevent the creation of a nuisance or unreasonable hazard to persons or water bodies. Grading plans or improvement plans associated with a subdivision application or use permit are reviewed as part of the application process.

3.7.8.1 An applicant for a grading permit to grade property where there is an existing OWTS, or approved OWTS Layout Report but not installed OWTS, shall obtain approval from DEHQ as part of the grading plan and permit approval process and shall demonstrate that the proposed grading will not interfere with the area where the OWTS has been installed or has been approved to be installed, including the areas designated for reserve. The proposed grading is reviewed to determine OWTS areas are not impacted and still meet minimum requirements of the LAMP, including but not limited to the standards for slopes, setbacks, primary and designated reserve dispersal areas, soil cover, soil depth, and depth to groundwater.

3.7.8.2 The OWTS Layout Report approval will indicate if a field check of completed grading is required prior to issuance of the OWTS permit. After completion of the grading, notice must be provided to DEHQ to schedule a field check, unless the field check of completed grading is waived as part of the OWTS Layout Report approval. This field check is not the same as local land use agency grading approval. It is the responsibility of the owner/applicant to ensure all required permits are obtained from the local land use agency.

3.7.8.3 Grading on a property that has the potential to impact an existing or proposed OWTS or water well that does not require a local grading permit shall be subject to review by DEHQ.

3.7.9 Lot Size/Density Requirements

3.7.9.1 The average density for any subdivision of property made pursuant to the Subdivision Map Act proposing to use OWTS as a means of sewage disposal shall not exceed the allowable density values in Table 3.7-1 for a single-family dwelling, or its equivalent. Where zoning regulations require greater lot sizes, those regulations shall be applicable.

Table 3.7-1: Average Allowable Densities for Lots Utilizing OWTS

Average Annual Rainfall (in/yr)	Allowable Density (acres/single-family dwelling unit)
0 – 15	2.5
>15 – 20	2.0
>20 – 25	1.5
>25 – 35	1.0
>35	0.75

3.7.9.2 The average density for any subdivision of property made pursuant to the Subdivision Map Act proposing to use an OWTS with supplemental treatment for nitrogen reduction with drip dispersal utilizing vegetative uptake design as a means of sewage disposal shall not exceed the allowable density values in Table 3.7-2 for a single-family dwelling, or its equivalent. Lot reductions for OWTS located within a geographical area of a TMDL, an Advanced Protection Management Program (APMP), or areas with Basin Plan concerns, conditions or restrictions related to OWTS discharges will be considered on a case-by-case basis in consultation with the appropriate Regional Board. Lots created under this section must utilize OWTS with supplemental treatment at time of

development unless the lot also meets minimum density in Table 3.7-1. The developer shall include a statement on the final map or parcel map acknowledging only OWTS with supplemental treatment for nitrogen reduction are approved to be installed on each lot.

Table 3.7-2: Average Allowable Densities for Lots Utilizing OWTS with Supplemental Treatment for Nitrogen Reduction (Acres/Single-Family Dwelling Unit)

Total Average Rainfall	2-Bedrooms (300 gpd)	3-Bedrooms (450 gpd)	4-Bedrooms (600 gpd)	5-Bedrooms (750 gpd)	6-Bedrooms (900 gpd)
0-6	1.75	2.50	2.50	2.50	2.50
>6-9	1.50	1.75	2.50	2.50	2.50
>9-12	1.00	1.50	1.75	2.00	2.50
>12-15	0.75	1.00	1.50	1.75	2.00
>15-20	0.50	0.75	1.00	1.50	1.50
>20-25	0.50	0.75	0.75	1.00	1.50
>25-30	0.50	0.50	0.75	1.00	1.00
>30-35	0.50	0.50	0.75	0.75	1.00

Notes:

1- For use with OWTS with supplemental treatment for nitrogen reduction with drip dispersal and vegetative uptake of wastewater.

2- Table based on Hantzsche and Finnemore nitrate loading mass balance with Nitrate-Nitrogen result of under 10 mg/L. Table defaults to OWTS Policy allowable density or highest calculated allowable density where nitrate > 10 mg/L.

3- Mass Balance Inputs: 17.5 mg/L Total Nitrogen in Effluent; 30% Denitrification with Drip Dispersal and Plant Uptake; 0 mg/L Background Nitrate-Nitrogen in Rainwater; Wastewater Volume of 150 gpd per bedroom; 10% of average annual rainfall available for deep percolation (San Diego County Rainfall 30-Year Average for Period of Record July 1971-June 2001).

https://www.sandiegocounty.gov/content/dam/sdc/dpw/FLOOD_CONTROL/floodcontroldocuments/Average%20Annual%20Rainfall.pdf)

Hantzsche, Norman N. and Finnemore, E. John (1992) Predicting Ground-Water Nitrate Nitrogen Impacts, Groundwater, July-August 1992, Vol. 30, No. 4

3.7.9.3 Additional or Multiple Dwellings on Parcels. A proposal for additional dwelling unit or units that are not considered an accessory use to the primary dwelling (single detached, duplex, semi-detached, triplex, stacked, attached, multi-dwelling) utilizing OWTS on existing parcels with a proposed or existing primary dwelling, or other proposed or existing dwellings, shall conform to the average allowable densities in Table 3.7-1 or the requirements in Section 3.7.9.2 for OWTS with supplemental treatment for nitrogen reduction and drip dispersal with vegetative uptake design. These additional dwelling units may include, but are not limited to second dwelling Units, farm labor camps, farm labor housing, and employee housing.

3.7.9.4 Accessory Dwelling Units. The following are requirements for OWTS serving Accessory dwelling units. These are dwelling units that are considered an accessory use to a primary dwelling allowed on a parcel.

3.7.9.4.1 Proposed Accessory Dwelling Units utilizing OWTS located within a geographical area of a TMDL or APMP, or areas with Basin Plan conditions or restrictions related to OWTS discharges will be considered on a case-by-case basis in consultation with the appropriate

Regional Board, if needed.

3.7.9.4.2 A total of 900 gallons per day low strength domestic wastewater volume (total 6-bedroom equivalent) for a parcel is allowed regardless of density using a standard OWTS and dispersal field as the means of sewage disposal. A designated reserve area shall be adequate for a full replacement (100%) of the primary dwelling and accessory unit dispersal field required absorption areas.

3.7.9.4.3 A total of 1,500 gallons per day of low strength domestic wastewater volume (total 10-bedroom equivalent) for parcel is allowed regardless of density using an OWTS with supplemental treatment for nitrogen reduction and drip dispersal with vegetative uptake design as the means of sewage disposal. A designated reserve area shall be adequate for a full replacement (100%) of the primary dwelling and accessory unit dispersal field required absorption areas.

3.7.9.4.4 The additional required septic tank capacity and dispersal field absorption area must either be added to the exiting OWTS or provided in a new OWTS to meet the minimum requirements of the LAMP.

3.7.9.4.5 Soil profile, percolation testing and/or groundwater testing may be required where insufficient data exists to determine compliance with absorption area and depth to groundwater requirements.

3.7.9.4.6 All OWTS must meet all other standards (setbacks, slopes, etc.) in LAMP.

3.7.10 Temporary Occupancies

3.7.10.1 Where there is no connection to a public sewer available, a temporary occupancy authorized under Section 6100 of the San Diego Zoning Ordinance must have sanitation facilities approved by DEHQ. An owner of a parcel where a recreational vehicle or other approved trailer with a holding tank is permitted for temporary occupancy shall ensure no prohibited additives are used in the tank, as required by Section 2.3.10.

3.7.10.2 A trailer (Health Care Trailer) authorized by San Diego County Zoning Ordinance Section 6118(b)(3) and San Diego Regulatory Code Section 52.204 exclusively for temporary occupancy for health care purposes may be connected to an OWTS serving a permanent single-family dwelling if the OWTS/ parcel meets the following requirements.

3.7.10.2.1 The parcel is not located within a geographical area of a TMDL or an APMP with conditions or restrictions related to OWTS discharges, or areas with Basin Plan or Regional Board conditions or restrictions related to OWTS discharges.

3.7.10.2.2 Records for the parcel and existing OWTS do not show a history of OWTS failures, repairs, complaints, or variances.

3.7.10.2.3 The parcel is of sufficient size to accommodate the existing OWTS, the required designated reserve area, and meets minimum setback requirements.

3.7.10.3 An applicant for a permit to install a Health Care Trailer shall complete an application for the evaluation of the connection of the health care trailer to an existing OWTS on a form provided by DEHQ. The evaluation must be completed, and the connection approved, prior to the issuance of a building permit.

3.7.10.4 Parcels and/or existing OWTS that cannot meet the above requirements will be evaluated on a case-by-case basis and may need further evaluation, expansion of the existing OWTS, or the installation of a new OWTS.

3.7.10.5 Applications where the OWTS cannot meet minimum requirements or may pose a threat to public health or water quality shall not be approved.

3.7.11 Potable Water Supply

3.7.11.1 Where public water is not available, and individual water wells are required for a water supply, an applicant for a subdivision of land or a certificate of compliance shall demonstrate to DEHQ the feasibility of an available and adequate ground water supply to serve an individual water well on each lot before a final map, parcel map, or certificate of compliance is approved. The feasibility of available and adequate well water supply may be demonstrated by the provision of one or more of the types of information noted below. DEHQ may request additional information as warranted to make a determination of adequate well water supply for each lot. The installation of an individual water well on each lot and proof of potability of each individual well are required to be provided at the time of development.

3.7.11.1.1 The site overlies a groundwater basin with documented sustainable water well usage.

3.7.11.1.2 The location, construction, capacity/yield, and potability of existing water wells on nearby parcels.

3.7.11.1.3 The results of capacity/yield and potability testing from a test well representative of conditions on each lot.

3.7.11.2 The minimum yield from an individual well serving one residence shall be three gallons per minute or two gallons per minute with a minimum of 1,500 gallons of storage capacity. This storage capacity is above that required by a fire department or other agency. If the proposed well is to serve more than one residence on the lot, the well minimum yield shall be equal to the minimum required for each residence plus 50% additional gallons per minute safety factor.

3.7.11.3 In addition to providing an adequate supply of hot and cold running water at an adequate pressure as required by the County Plumbing Code, an applicant for an OWTS Installation Permit for

a new primary dwelling unit must provide proof of potable water from a public water purveyor or from an approved well.

3.7.11.4 Proof of potable water from a public water purveyor is met with the submittal of a service availability letter from the water purveyor.

3.7.11.5 Proof of potable water from a domestic water well is met with the submittal of a laboratory reports that meets the following minimum water quality monitoring requirements:

3.7.11.5.1 At least one water sample obtained from the well within one year of submittal to DEHQ for review shall be negative for the presence of total coliform bacteria and fecal coliforms or *Escherichia coli* (E. coli).

3.7.11.5.2 At least one water sample obtained from the well within one year of submittal to DEHQ for review and analyzed for Nitrate (as nitrogen) shall be less than the maximum contaminant level as specified in the California Code of Regulations, Section 64431 (10 mg/L).

3.7.11.5.3 Other sampling that may be required by the Director of Environmental Health based on known or suspected sources of pollution in the area that may affect the water quality of the well.

3.7.11.5.4 The samples shall be analyzed by a laboratory certified by the State Water Resources Control Board for that analysis pursuant to California Health and Safety Code, Division 101, Part 1, Chapter 4, Article 3, commencing with Section 100825.

3.7.11.6 An application for an OWTS will not be approved where a water supply does not meet the provisions of this section.

3.7.12 Temporary Onsite Wastewater Treatment Systems

The Director may issue a permit for a specific time period to a property owner authorizing construction of a temporary OWTS when the Director determines that it is highly probable that the property will have access to a public sewer within 24 months from the date of a permit application and the owner is able to demonstrate the ability to install a permanent OWTS that meets the minimum requirements of this LAMP. In approving a permit for a temporary onsite wastewater treatment system, the Director may prescribe conditions necessary to protect public health. The permit may be issued if the property owner agrees to all of the following:

3.7.12.1 The property owner agrees to connect the property to the sanitary sewer within 30 days after it becomes available to the property.

3.7.12.2 If the public sewer does not become available to the property within the period of time specified in the permit, the property owner shall apply for a permit to install an OWTS within 30 days after receiving notice from DEHQ and shall install an approved OWTS within one

year from the date of permit issuance.

3.7.12.3 The property owner will pump and remove all sewage and other wastes from the temporary OWTS and destroy the system following the procedures in section 3.8.6.

3.7.12.4 The property owner will not occupy the building to which the temporary OWTS will be installed or allow any other person to occupy the building until the property owner installs the system under permit and DEHQ approves the installation.

3.7.12.5 The permit for a temporary OWTS is valid only for the time period specified and is not transferable. If the property owner sells or transfers the property, the permit for a temporary OWTS will terminate and the new property owner or transferee shall either obtain a new permit for the temporary OWTS, connect to public sewer, or install an approved OWTS that meets the minimum requirements of this LAMP.

3.7.13 Alternative Toilets/Other Sanitation Facilities

Alternative toilets or other sanitation facilities may be authorized in lieu of connection to a public sewer or to an OWTS, as provided below. All alternative toilets and other sanitation facilities shall meet the minimum requirements in Appendix IV.

3.7.13.1 A holding tank, vault or composting dry toilet for a campsite, park or trail, when no public sewer is available, and it is impracticable to connect water to the area where the toilet is to be located.

3.7.13.2 A chemical toilet for a temporary structure for a commercial use when no public sewer is available and site conditions make it impracticable or impossible to install an OWTS.

3.7.13.3 A chemical toilet for a commercial use when no public sewer is available, the property has an existing OWTS to serve normal daily wastewater flows, and the project only needs occasional supplemental sewer capacity (up to a maximum of four times per year). The chemical toilets may be authorized only if it is determined the expansion of the existing OWTS or the installation of a new OWTS would be prohibitively expensive based on the amount of occasional use expected.

3.7.13.4 A chemical toilet for an extractive use or other industrial use in an isolated area such as a facility that receives solid waste, when no public sewer is available and site conditions make it impracticable or impossible to install an onsite wastewater treatment system.

3.7.13.5 A holding tank where public sewer is not available, the installation of an OWTS is not practicable, and the property will be able to connect to public sewer within 24 months of the issuance of permit to install and use a holding tank. The permit to use a holding tank is valid for 24 months and may be eligible for an additional 12-month extension if it is demonstrated property owner has been unable to connect through no fault of their own and the holding tank

is being properly maintained. Holding tanks shall meet the minimum standards in Appendix IV.

3.8 General OWTS Review and Permitting Process

The general process for the permitting of OWTS includes the completion and submittal of an OWTS Layout Report, which provides information relating to the project description, wastewater flow and characteristics, site evaluation elements, and OWTS design and, once approved, the issuance of a Permit to Install an OWTS is presented in this section. This process is consistent with the requirements of the San Diego Regulatory Code, Title 6, Division 8, Chapter 3 (County Code sections 68.301 et seq.), the OWTS Policy, and this LAMP.

Persons seeking a Permit to Install an OWTS from the County should review these documents as well as applicable grading, building, and land use rules from the appropriate municipal jurisdiction.

For repairs to an existing OWTS that meet the minimum requirements in Section 6.7, a licensed installer or Owner-Builder may apply for a repair permit on a form provided by DEHQ. A diagram showing the detailed OWTS design and applicable setback distances must be submitted with the application, and any other information requested by DEHQ. An OWTS Layout Report may be required for OWTS repairs where site conditions or other conditions warrant, as determined by DEHQ, to ensure the installation of a properly sited and designed OWTS that is protective of water quality and public health.

The process typically starts with the site evaluation and percolation testing performed by a Qualified Professional. Depending on the depth of the borehole and groundwater, a permit may be required for soil borings installed for the soil profile investigation. A Percolation Test permit is required for percolation testing. This permit provides for an initial inspection to review the application and map information and verify the proposed OWTS location is accurate and meets all setbacks or other requirements, to verify that the appropriate testing procedure was used, to inspect the test hole construction and test reference point, to review the raw field data recorded prior to arrival, and to observe and document the readings during the final 30 minutes of the test on the percolation test form. This initial inspection allows DEHQ staff to identify any site conditions or issues that may have bearing on the approval of proposed OWTS. The information gathered from the site evaluation and percolation testing, and any other information needed, such as a slope stability study or nitrate loading study, is compiled and submitted as a complete OWTS Layout Report.

An OWTS Layout Report is completed as a prerequisite to obtaining an OWTS Installation Permit. In addition, in accordance with San Diego Regulatory Code Section 68.326, proof of potable water and proof of the submittal of an application for a building permit are also prerequisite to obtaining an OWTS Installation Permit. Additionally, the OWTS Layout Report may be submitted as a requirement of a land use project where OWTS usage for sewage disposal is proposed, including subdivisions of land, use permit applications, lot line adjustments, and certificates of compliance.

3.8.1 Submittal of Building, Grading, other Information

3.8.1.1 Proof that building plans have been submitted to the local land use agency, must be

submitted with the OWTS Layout Report. The building plans need not be approved by the local land use agency before being submitted. Final building plans, bearing the appropriate stamp which documents plans have been submitted and approved by the local land use agency, must be submitted to DEHQ for review prior to an OWTS installation permit is issued to verify the OWTS Layout Report is consistent with the approved building plans. Any significant building plan amendments must be timely provided to DEHQ to complete the OWTS Layout Report review. Any OWTS Layout Report approved without plan amendments first being submitted to DEHQ that may have a material effect on the OWTS compliance with local ordinance and/or this LAMP shall be null and void. A new OWTS Layout Report shall be submitted to include all required information for review.

3.8.1.2 Grading plans, for grading that may impact the OWTS or water well, and those required by the local land use agency, must also be submitted to DEHQ for review. The grading plan must be submitted for review and approval before any grading work is initiated. If the approved OWTS Layout Report requires a field inspection of the complete grading, that field inspection must be completed before an OWTS installation permit is issued.

3.8.1.3 Proof that the site is served by potable water from a public water purveyor or an approved well must be provided prior to the issuance of an OWTS installation permit. A copy of a "will serve" letter from the public water purveyor or copies of laboratory reports for the approved water well pursuant to Section 3.7.11.5 may provide this proof of potable water.

DEHQ will review all information to determine consistency with the project description applicable requirements. Depending on the scope of the proposed project, DEHQ may request other information and documentation, as needed to determine the site is suitable for OWTS usage.

3.8.2 Submittal of the OWTS Layout Report

The OWTS Layout Report provides information to ensure the area of the lot or parcel proposed for the siting and installation of an OWTS suitable for the proposed system and meets all minimum requirements, including setback distances. An application for an OWTS Layout Report must be submitted on a form provided by DEHQ, must include all the minimum required information to be considered complete and must be signed, dated, and stamped (if applicable) by the appropriate Qualified Professional. In accordance with San Diego Regulatory Code, Section 68.382, Qualified Professionals may be required to demonstrate their knowledge of County of San Diego ordinances and policies related to the design of OWTS. Because of the potential for delays or disapproval, it is recommended that applicants submit an OWTS Layout Report and obtain approval before incurring costs for detailed building plans and architectural fees.

The OWTS Layout Report includes the following minimum information:

- Project description.
- Wastewater sources, flows and characteristics description.
- Site evaluation and percolation testing results, and other information as required by the LAMP

or Director of Environmental Health.

- Proposed OWTS type (conventional, supplemental) and design specifications.
- Verification that all setback distances are met.

3.8.2.1 Project Description

At a minimum, the project description must include the type and scope of the land use project/permit or building permit being applied for, the location and extent of any existing or proposed grading at the site, public sewer provider information (name of the sewer district the parcel is within and/or the distance to the nearest public sewer to the site), the water source approved for the site (proof of water well potable water, public water provider name), the location of all public water lines on or within 20 feet of the property, and the sign-off of the OWTS Layout by the local water district or company, if required (Vista Irrigation District, Rincon del Diablo, Yuima, County Service Areas).

The OWTS Layout Report must include accurate site maps, plot plans and/or OWTS layout diagrams, drawn to-scale showing required information, as determined by the Director of Environmental Health.

3.8.2.2 Wastewater Sources, Flows and Characteristics Description

The sources of wastewater generated at the site are provided, including a description of the number and types of buildings (residential/commercial) and the uses of these buildings. The projected and peak wastewater flows are calculated and provided, with the source of the flow information included. The characteristics of the wastewater generated at the site is described, to include at a minimum biological oxygen demand (BOD), total suspended solids (TSS), fats, oils and grease (FOG), and total nitrogen (TN), with the source of the information included. Domestic wastewater from residential projects up to six bedrooms, with no other wastewater generating activities, is considered to be low strength wastewater. Residential volumes are to be calculated at 150 gallons per day per bedroom. Additional information on wastewater flows and characteristics are provided in Chapter 6.0, Siting and Design Criteria.

3.8.2.3 Site Evaluation and Percolation Testing

Each element of the site evaluation and percolation testing described below must be performed by an appropriate Qualified Professional. In addition to this information, a determination as to the nature and extent of nitrogen loading from the proposed OWTS may be required.

3.8.2.3.1 Soil Depth and Characteristics and Percolation Testing

These elements provide information as to the degree the soil in the proposed OWTS dispersal area can accept wastewater discharge over a period of time.

Soil structure and texture are determined by evaluation of site soils from borings or excavations.

Soil profile borings and percolation test holes are installed under a Percolation Test/Soil Profile Permit. Borings over 20 feet in depth or that extend into groundwater require a Well Permit. It is the applicant's responsibility to ensure any required permits are obtained prior to the start of work.

Percolation testing, with results in minutes per inch (MPI), is conducted to estimate water absorption capacity of the soil. The test is conducted with clean water (wastewater will typically percolate slower than clean water) and test results can be used to establish the dispersal system design. The minimum number of percolations tests must be performed in accordance with the specifications and methods described in this LAMP. A Percolation Test Permit is required for all percolation testing and shall include the minimum information as required by DEHQ. It is the applicant's responsibility to ensure any required permits are obtained prior to the start of work.

Percolation testing performed under a permit issued by DEHQ is required for all OWTS design and installation areas. Additional percolation testing may be required as conditions warrant, including for areas where grading or other soil disturbance has occurred in the proposed OWTS location, the OWTS dispersal system is being shifted out of the previously tested area, or an OWTS other than the system previously considered is being proposed. Unless site conditions change, percolation test results conducted under a permit and observed or reviewed by DEHQ staff typically remain valid for the specific area tested.

Note: Grading or clearing of brush for the purposes of completing a percolation test may be subject to permitting or other requirements by other agencies, such as the implementation of storm water best management practices, and/or local land use agency approval. It is the applicant's responsibility to meet all other local, state, or federal requirements.

3.8.2.3.2 Unsaturated Soil Interval

This element determines the amount of unsaturated soil available to treat wastewater in the proposed dispersal area. This is the distance between the bottom of the infiltrative surface area of the dispersal system and the highest anticipated groundwater level or the shallowest impervious subsurface layer at a site.

Details of the unsaturated soil interval and minimum depth to groundwater from the bottom of the infiltrative surface area can be found in Sections 4.2 and 6.3.

3.8.2.3.3 Limiting Geological Features

This element determines any geological features that may limit the suitability of the site for OWTS usage, including, but not limited to, impervious subsurface layers, grading areas, fill areas, degree of slope, slope stability, unstable land masses, and rock outcropping areas. The degree of slope shall be described using the following slope class descriptions.

Table 3.8-1: Slope Classes	
Percent Slope	**Description**
0-3%	Nearly Level
3-7%	Gently Sloping
7-12%	Strongly Sloping
12-20%	Moderately Sloping
20-30%	Steep
30-40%	Very Steep
>40%	Extremely Steep

1-From the United States Department of Agriculture, Natural Resources Conservation Service

3.8.2.3.4 OWTS Design Specifications

The scope and extent of the proposed project, the wastewater amounts and characteristics, and the site evaluation information are used to determine the appropriate siting and design criteria for the OWTS in accordance with the provisions of this LAMP. The information on the design criteria for the OWTS are provided in greater detail in Chapter 6.0.

3.8.2.3.5 Siting of OWTS on Lot/Net Usable Land Area

This element ensures there is sufficient area available for the original OWTS installation and for the required 100% replacement area that meets all setback requirements to water wells, structures, easements, watercourses, or geologic limiting factors. All components of on OWTS shall be located entirely upon the lot that is the site of the building or structure that will be served by the OWTS. OWTS layout designs must be to-scale, accurate and provide sufficient information to enable DEHQ to complete a review of the proposal to determine the OWTS meets all required provisions of this LAMP.

3.8.2.3.6 Other Information as Required

Additional information or studies may be required based on the proposed project, the potential for cumulative effects on ground and surface waters, and site-specific conditions. OWTS proposed for areas with steep slopes, and shallow groundwater are examples of conditions where additional studies may be required. The following are examples of additional information that may be requested as part of an OWTS Layout Report review.

3.8.2.3.6.1 Groundwater Level Study. This study will assess the probable rise in the water table underlying the site, including effects of rainfall, OWTS recharge, landscape irrigation and groundwater pumpage. The study must follow the procedures as outlined in this LAMP.

3.8.2.3.6.2 Slope Stability Study. A slope stability study with the minimum required information pursuant to Section 4.4 is required for proposed OWTS and dispersal fields in slopes exceeding 30% where the initial site evaluation has identified evidence of instability, such as unconsolidated fill, significant erosion rills, tension cracks, evidence of prior earth

movement or slides, and leaning trees. The slope stability study shall determine the potential for land movement to impact the dispersal system as well as the potential of the dispersal field to affect slope stability. The study shall identify any mitigating actions, if applicable, to effectively maintain slope stability with dispersal field usage.

3.8.2.3.6.3 Microbiological Travel Time Study. This study is required for dispersal systems located within 600 feet of public well and where the dispersal field depth exceeds 20 feet (Policy 9.4.10.3).

3.8.2.3.7 Federal Class V Injection Wells. OWTS that receive wastewater, such as from floor drains or sinks that receive non-domestic, industrial, or commercial wastes, or that receive domestic wastewater from multifamily or non-residential establishments and have a capacity to serve 20 or more persons per day are considered Class V Injection Wells pursuant to Code of Federal Regulations, Title 40, Part 144 - Underground Injection Control Program.

Owners of OWTS that are considered a Class V Injection Well covered under the scope of this LAMP shall comply with Environmental Protection Agency registration requirements and provide proof of such registration to DEHQ prior to the issuance of a Permit to Install an OWTS or an OWTS Replacement/ Repair Permit. OWTS that receive non-domestic wastewater are not covered under the scope of coverage of the LAMP and will be referred to the RWQCB for oversight.

3.8.3 OWTS Layout Report Approval

3.8.3.1 Completeness Review

DEHQ will review the OWTS Layout Report for completeness, along with any required plans or other requested information. Submitters of OWTS Layout Reports that do not provide the minimum required information in sufficient detail to enable the review of the proposed OWTS will be notified of the missing or insufficient items. The review of the OWTS Layout Report will be suspended until such time all required information is submitted. If all the required information is not submitted within two years from the date of the original submittal, then the OWTS Layout Report submittal will be expired and a new OWTS Layout Report and associated fees must be submitted for review for the project.

3.8.3.2 Standards Compliance Review

Once a complete report is submitted, DEHQ will review the information for compliance with the requirements of the San Diego Regulatory Code, the OWTS Policy, and this LAMP. DEHQ may require additional testing or information, if needed to be able to complete the standards review. Any additionally requested testing or information shall be submitted to DEHQ within 60 days from the date of the letter requesting such information. The applicant may submit a request in writing proposing an alternative date to submit the required information. Except in the case of ongoing groundwater monitoring, if the additional testing or information is not submitted within two years

of the date the OWTS Layout Report was received, the OWTS Layout Report will be expired. For cases where ongoing groundwater monitoring is required to provide depth to groundwater measurements during a normal average rainfall year, test borings or groundwater monitoring wells shall be installed under permit from DEHQ within one year of the date the OWTS Layout Report was submitted or the OWTS Layout Report. As this additional testing is dependent on sufficient rainfall and may take a year or more, the OWTS Layout Report shall not expire after two years as long as a test boring or groundwater monitoring well(s) has been installed under permit and monitoring is in progress.

3.8.3.3 OWTS Layout Report Approval

3.8.3.3.1 OWTS Layout Reports that meet the prescribed minimum requirements will be approved. The approval may include a requirement for a field inspection by DEHQ after the completion of any grading at the site to ensure consistency with the approved OWTS Layout Report. However, an approved OWTS Layout Report is not an installation permit. An installation permit is required to be obtained by and is issued to a Licensed Installer or Owner-Builder responsible for the installation of the OWTS prior to the commencement of any installation work.

3.8.3.3.2 OWTS that fail to meet the prescribed minimum requirements in this LAMP will not be approved as proposed. For those proposals which are outside the scope of coverage of this LAMP, applicants may submit the proposal to the appropriate Regional Board for consideration.

3.8.3.3.3 Approval of the OWTS Layout Report remains valid for two years and the installation permit should be obtained prior to the expiration date. Additional information or a new OWTS Layout Report may be required if the project scope of work is changed such that it would impact the siting, design, operation, or maintenance of the proposed OWTS. DEHQ may approve the use of elements or data included in a previously approved but expired OWTS Layout Report where appropriate. This approval may be withdrawn if it is determined the approval was issued in error or on the basis of incorrect, inaccurate, or incomplete information, or in violation of the San Diego Regulatory Code, the OWTS Policy, and this LAMP, or when there is a change in regulatory requirements, or other circumstances, or a change to the conditions of the property since the date of approval, which would cause the proposed OWTS to fail to meet minimum requirements.

3.8.4 Approved OWTS Layout Report Related to Other Permits

Where OWTS is proposed as the means of sewage disposal, local land use agencies may require the submission of proof of a parcel's suitability for OWTS usage before issuing related permits, such as grading or building permits. The approval of the OWTS Layout Report is typically used to provide this documentation.

3.8.4.1 In the unincorporated parts of the County where OWTS is proposed as the means of sewage disposal, County land use agencies may require an approved OWTS Layout Report and a valid OWTS Installation Permit before building plans are approved or a building permit is issued. Other

local land use agencies also typically require an approved OWTS Layout Report, or that an OWTS Installation Permit be issued before building plans will be approved or a building permit issued.

3.8.4.2 Local land use agencies typically require that all OWTS installation inspections be completed and the OWTS Installation Permit is finaled by DEHQ before occupancy permits are issued.

3.8.5 OWTS Installation and Repair Permits

3.8.5.1 Application for Permit to Install OWTS. An application for installation of the OWTS must be submitted on a form provided by DEHQ. An approved OWTS Layout Report that meets the minimum requirements in Section 5.2 is a prerequisite to the issuance of the installation permit. The permit may be submitted at the time of the OWTS Layout Report submittal or at any time prior to the OWTS installation but must be submitted within the expiration date of the OWTS Layout Report. The permit to install an OWTS shall be issued to a Licensed Installer or an Owner-Builder only after an OWTS Layout Report has been approved, and any other information or grading requirements, including any field inspections, have been submitted and DEHQ review has been completed. A separate application is required for each OWTS installation.

3.8.5.2 Application for Permit to Repair OWTS. An application for a repair of an existing OWTS that meets the minimum requirements in Section 6.7 shall be made on a form provided by DEHQ. A detailed diagram showing the OWTS design layout must be submitted with the application. New or replacement septic tanks must include certifications and/or approvals. The repair permit shall be issued to a Licensed Installer or an Owner-Builder. An OWTS Layout Report may be requested prior to the issuance of a permit to repair an OWTS when additional information is needed to ensure compliance with the minimum requirements in this LAMP.

3.8.5.3 The minimum information for an application for a permit to repair shall include the following:

3.8-2: Minimum Repair Application and OWTS Layout Design Elements
Professional's name, mailing address, email address, and phone number.
Type of proposed construction (Ex: Residential, Commercial, Industrial).
Scope of work: Type of Construction/Use/Occupancy, Number of Bedrooms, Business Type, Volume of Wastewater, Character and Strength of Wastewater.[1]
Commercial Food Service Building-location, design, and size of oil/grease interceptor.
Location of Property, Assessor's Parcel Number.
An OWTS siting and design layout diagram to include all information as provided in this table; Scale (engineer scale not to exceed 1" = 60'); North arrow; Layout does not exceed 11" x 17" paper.
Property Lines and lot dimensions (provide an over sheet (larger scale allowed) and detail sheet(s) for large parcels).
Description of slope in OWTS areas[2], topographic lines for slopes in excess of 20% or when requested, and applicable elevation points (include pad grade, finished floor, septic tank, leach lines, slope arrows, slope range, etc.).

Existing and proposed primary and reserve OWTS tank and dispersal design detail, including associated tank or component certifications and approvals.
All applicable setback distances are shown on OWTS layout design diagram.
All proposed and existing grading; Significant rock outcroppings/features; Evidence of unstable land mass or slope instability, such as unconsolidated fill, significant erosion rills, tension cracks, evidence of prior earth movement or slides, and leaning trees.
All known, recorded easements on or within 20 feet of lot boundaries (open-space, utility, road, waterline, etc.).
Identify source of potable water; Location of all public waterlines on or within 25 feet of property and signed water line statement.
Location of all wells on or within 150 of feet of property line; Location of all Public wells within 600 feet of property line.
Location of drinking water reservoir within 2,500' of property line.[3, 4]
Location of drainage ways; location of streams, springs, ponds, flood plains, lakes within 200 feet of property line.[3, 4]
All soils testing information (deep borings, test holes, and/or percolation tests) plotted on the design (matched to flagged locations in field).
For high groundwater areas, name of groundwater basin[4]; Depth to groundwater data and specific method used to determine depth to groundwater.
Location of known, proposed, or potential stormwater treatment and retention features located on site and within 25 feet of property line.
Sign-off of layout by local water district or company, if required.
Other information as requested by DEHQ.

1- Residential domestic wastewater with no other wastewater generating activity are assumed to be low strength wastewater and volume assumed to be 150 gallons per day per bedroom.

2- Describe using USDA NRCS Slope Classes: 0-3% nearly level; 3-7%-gently sloping; 7-12%-strongly sloping; 12-20%-moderately steep; 20-30%-steep; 30-40%-very steep; >40%-extremely steep.

3- Surface water body information: USGS *The National Map* (https://apps.nationalmap.gov/viewer/), as well as site specific observations of local drainage patterns.

4- Groundwater and surface water information: RWQCB San Diego Region, Basin Plan webpage, the *San Diego Basin Plan Map*. Link: (San Diego Basin Plan Map (ca.gov), as well as site specific groundwater levels.

3.8.5.4 It is recommended the applicant/permittee maintain all OWTS related records and paperwork, including project control numbers, obtained from each Department or agency so information that may be requested is readily available.

3.8.5.5 Issuance of Permit. An OWTS Installation Permit will be issued after all required information has been submitted and DEHQ finds the proposal meet all minimum requirements. The Director of Environmental Health may deny an OWTS Installation Permit for an OWTS that meets the requirements if it is determined that the OWTS may contaminate an underground source of water or on the public health and safety. Applications for OWTS installation that do not meet the minimum requirements will be denied. No person shall initiate any work to install, construct, reconstruct, repair, add to, modify or abandon an OWTS without first obtaining a permit issued by DEHQ.

3.8.5.6 Installation Work. Work may commence to install the OWTS in accordance with the

approved permit only after an OWTS Installation Permit has been issued. As soon as the installation work is completed, the permittee shall provide a minimum 24-hours advance notice to DEHQ that the system is ready for an inspection. Inspection times are based on staff availability. Unless otherwise authorized by DEHQ, no person shall backfill, or cause another person to backfill, an OWTS installation before DEHQ inspects and approves the work.

3.8.5.7 Finalization of OWTS Installation Permit. The OWTS Installation Permit will be noted as competed or "finaled" only after the inspection verifies the OWTS was installed as approved and permitted and that the OWTS meets all minimum requirements. An OWTS Installation Permit is not completed or "finalized" until all required information is submitted, such as telemetry and maintenance contract documentation, engineer's letter or supplemental treatment system installation statement of certification, as-built drawings, or an annual operating permit.

3.8.5.7.1 Notice will be provided to the permittee of any components of the installation that do not conform to the approved permit or to applicable minimum standards. Corrections shall be made as specified and a request for a reinspection must be made within ten (10) business days. If the permittee fails to correct the deficiency as specified or fails to request a reinspection, the OWTS Installation Permit may be revoked and/or other appropriate enforcement actions may be taken.

3.8.5.7.2 Submittal of revised drawings or "As Built" drawings. A revised OWTS Layout drawing shall be submitted if the actual installation of the OWTS differs from that shown in the approved OWTS Layout Report drawing at the completion of the installation and prior to the finalization of the permit.

The "As Built" drawing shall reflect changes made in specifications and show exact dimensions, geometry, and location of all elements of the work completed under the permit. In addition to the requirements listed in Table 3.8-1, the items noted in Table 3.8-2 are required for the revised drawings.

3.8-3: Revised OWTS Layout Drawing "As Built" Elements
Actual location and dimensions of all OWTS components and dispersal system drawn to scale.
Any changes to the scale of the drawing.
Distances from OWTS components and dispersal system to buildings, driveways, water wells, property lines, other dispersal systems.
All changes in materials used, including material type, locations used, changes in sizes, etc.
Actual location of all utilities, stormwater features, drainage courses at the site.
All unexpected obstructions or issues encountered, and the solutions used.
Sufficient information to enable the OWTS to be located in the future.

3.8.6 OWTS Destruction Permit

3.8.6.1 A permit is required to destroy a cesspool, septic or other tank, or seepage pit. A person may apply for a permit to destroy an OWTS by submitting an application on a form provided by the DEHQ along with the associated fee.

3.8.6.2 Any component of an OWTS shall not be considered properly destroyed until a permit has been obtained and the destruction has been inspected and approved by DEHQ.

3.8.6.3 A cesspool, septic or other tank, and seepage pit that has been abandoned or has been discontinued otherwise from further use, or to which no waste or soil pipe from a plumbing fixture is connected, or which constitutes a safety hazard, shall have the sewage removed therefrom and be completely filled with earth, sand, gravel, concrete, or other approved material within 30 calendar days from the date of abandonment or disuse.

3.8.6.4 The top cover or arch over the cesspool, septic or other tank, or seepage pit shall be removed before filling, and the filling shall not extend above the top of the vertical portions of the sidewalls or above the level of the outlet pipe for the cesspool, septic or other tank, or seepage pit in preparation for the inspection. After such inspection and approval by DEHQ, the cesspool, septic tank, or seepage pit shall be filled to the level of the top of the ground.

3.8.6.5 No person owning or controlling a cesspool, septic tank, or seepage pit on the premises of such person or in that portion of a public street, alley, or other public property abutting such premises, shall fail, refuse, or neglect to comply with the provisions of this section or upon receipt of notice so to comply from the DEHQ.

3.8.6.6 Where disposal facilities are abandoned consequent to connecting premises with the public sewer, the property owner making the connection shall fill abandoned facilities under permit, and inspection if required, by DEHQ within 30 days from the date of connecting to the public sewer.

3.8.6.7 A property owner or a person in control of a cesspool, septic tank, seepage pit, or other unsafe component used for sewage disposal shall immediately secure any unsafe or hazardous conditions as soon practicable.

3.9 General Operation and Maintenance Requirements

3.9.1 All OWTS shall be operated and maintained pursuant to the minimum requirements of this section, or pursuant to an Operations and Maintenance Plan compiled by the qualified professional.

3.9.2 All standard OWTS shall be operated and maintained pursuant to the following:

3.9.2.1 As an option to meet the requirements of OWTS Policy Section 8.2.4 and to preserve the integrity of the dispersal system's absorptive capacity, septic tanks shall be pumped on a regular basis, but at least once every three years. The frequency of pumping may be modified based on documented actual measured scum (floating layer) and sludge (settled bottom layer) accumulation

rates. At no time shall the scum layer be within three (3) inches of the outlet pipe opening and the sludge layer be within eight (8) inches of the outlet pipe opening.

3.9.2.2 All septic tank pumping records shall be maintained by the property owner for a minimum of six years and shall be provided to the DEHQ upon request.

3.9.2.3 Effluent filters shall be cleaned or replaced in accordance with the manufacturer's recommendations.

3.9.2.4 All at grade risers shall be maintained safe and secure at all times.

3.9.2.5 All OWTS with supplemental treatment shall have a written OWTS Operations and Maintenance Plan developed by a qualified professional and approved by DEHQ at the time of installation. The property owner shall ensure that the OWTS Operations and Maintenance Plan is implemented as written.

3.9.2.6 All standard OWTS with lift stations and alarm systems shall have a written OWTS Operations and Maintenance Plan developed by a qualified professional and approved by DEHQ at the time of installation.

3.9.2.7 Owners of OWTS shall take all timely and necessary actions to correct safety issues and to prevent sewage or effluent from surfacing from their OWTS.

CHAPTER 4.0 SITE EVALUATION REQUIREMENTS

This chapter provides the minimum requirements for the evaluation of a site or parcel to determine if the site or parcel is suitable for the usage of an OWTS for sewage disposal for the described proposed activity, including a proposed building permit or development project. As the hydrology, geology, topography, and climate vary in the San Diego County region, this site evaluation is integral to determine if a parcel is suitable for OWTS usage.

4.1 Groundwater Information and Testing Requirements

This section provides the method to be used for determining groundwater levels when siting and designing OWTS with the purpose to:

- Protect the groundwater quality by maximizing treatment of the sewage effluent prior to its entering into the groundwater.
- Protect the public health from surfacing sewage or effluent caused by high groundwater.
- Provide a methodology for the evaluation of groundwater depths to determine minimum groundwater separation requirements at sites using or proposing to use an OWTS.

A minimum five-foot separation is required to be maintained between the bottom of a standard OWTS dispersal system and the highest anticipated groundwater level. Additional separation may be required depending on the percolation test results for the site in accordance with Table 6.3-1. For OWTS with supplemental treatment, the required separation may be reduced to no less than two feet. This reduction may be allowed based on the level of additional treatment provided by the supplemental treatment system.

Groundwater typically fluctuates seasonally depending on local geology and rainfall amounts. Rising groundwater levels have been documented in certain areas that use imported water. Groundwater levels fall in response to lack of rain and well extractions and rise in response to rainfall and in some cases, increased irrigation return water from agriculture operations. Fluctuations in groundwater elevations from a few inches to greater than twenty feet have been documented. Major fluctuations have been documented in areas such as the Ramona and Valley Center basins.

OWTS in areas with high groundwater may result in sewage effluent backing up into homes and surfacing on the ground creating public health hazards and may contribute to the impairment of surface and groundwater resources.

During the above normal rainfall periods in the late 1970's and early 1980's, previously approved lots were observed to have high groundwater impacting the proposed or existing OWTS. In 1980, a requirement to determine the actual or potential groundwater levels be verified prior to issuing OWTS permits was implemented. The requirement specified depths of test holes be used based on the season and also specified that the presence or absence of groundwater in these holes would be adequate to determine if an OWTS permit could be issued.

Since 1980, several wide fluctuations in the quantity of rainfall have been documented. Over periods of time, there have been drought cycles followed by cycles of normal to above normal rainfall. During periods of normal or above normal rainfall, the 1980 groundwater requirement was generally sufficient to determine if high groundwater was a concern prior to issuing a OWTS permit. Experience has shown that there are instances where the absence of groundwater in a ten, fifteen or even twenty-foot-deep observation boring on a lot does not guarantee that groundwater will not rise to within five feet from the bottom of the proposed OWTS during periods of normal or above normal rainfall. In some cases, the only certain way to determine depth to high groundwater on a site is to observe the groundwater depth during or immediately after an above average rainfall season. An OWTS Installation Permit cannot be issued in areas where groundwater has been documented to rise to a level that would violate the dispersal field separation requirements of this LAMP or in low lying areas with a potential for flooding, unless installed in a location or manner to avoid impairment to the OWTS or contamination from the OWTS during flooding.

4.1.1 Development Projects

Subdivisions, parcel maps, boundary adjustments, certificates of compliance, and other development projects within the scope of coverage of this LAMP that propose to utilize OWTS as the means of sewage disposal are required to submit documentation that the project site or each lot can support an OWTS that meets the minimum requirements of this LAMP. Documentation of soil testing results to show groundwater separation requirements have been met is a part of the site evaluation process and is included in the OWTS Layout Report.

To meet this requirement for soil evaluation and groundwater separation, test borings and/or monitoring wells for monitoring groundwater shall be installed under permit from DEHQ. Maps showing the location of the borings and their logs shall be included in the OWTS Layout Report. The qualified professional must determine the actual and potential high groundwater levels in the area of the proposed OWTS at the time of the OWTS Layout Report submittal to DEHQ for review.

Transient high groundwater conditions (spikes) must be documented thoroughly if encountered. A written discussion by the qualified professional must be included in the OWTS Layout Report along with groundwater monitoring log(s) for review and concurrence.

4.1.2 Existing Lots

4.1.2.1 If a groundwater investigation has been completed for an existing lot, additional test borings may be required if a site review reveals any evidence of groundwater changes, including but not limited to; plant growth, ponding water, or OWTS failures in the area. DEHQ staff will specify the depth and the locations of the additional test borings in consultation with the qualified professional in charge of the project.

4.1.2.2 When groundwater is observed in the borings and DEHQ has reason to believe that groundwater could rise to an unacceptable level during the course of a normal rainfall season, monitoring may be required to determine that groundwater will not rise to an elevation that will not

provide the minimum separation required from the bottom of the proposed OWTS. Monitoring, if required, must be conducted during the course of an above average annual rainfall year and/or when full groundwater recharge has occurred.

4.1.2.3 When groundwater is not observed in the boring but there is evidence of past high groundwater levels, such as soil mottling or documentation of groundwater rise on adjacent properties, groundwater monitoring may be required.

4.1.2.4 The groundwater separation requirements will be met when the test results, including no groundwater observed in the test borings, indicate the minimum soil depth and groundwater separation requirements can be met, and there is no known history of rising groundwater, no evidence of groundwater changes, as noted in section 4.1.2.1.

4.1.2.5 The qualified professional must include sufficient documentation and sources to support any conclusions, including the likelihood that seeps or springs would develop as a result of the OWTS discharge, and that the historic high groundwater elevation will not encroach upon the minimum separation required between the bottom of the proposed OWTS and the highest anticipated groundwater level.

4.1.2.6 The supporting data shall include, but not be limited to, data on the site topography, soils, geology, basin studies, hydro-geologic studies, and groundwater monitoring data from the onsite test borings and/or monitoring wells through an average or above average rainfall year and/or where full groundwater recharge has occurred.

4.1.3 Procedure for Groundwater Determination

4.1.3.1 Number of Test Borings. Test borings and/or monitoring wells must be installed in the area of the proposed OWTS dispersal field to demonstrate area can meet groundwater separation requirements. The minimum number of test borings shall be one boring. In areas of high groundwater, a minimum of one test boring and/or monitoring well shall be installed and monitored until sufficient data is obtained to document any observed groundwater levels during an average or above average rainfall year and/or where full groundwater recharge has occurred. Additional test borings may be required depending on the areal extent of the dispersal area and site-specific conditions. A permit is required to install a test boring or monitoring well. Construction standards for a test boring is provided in Appendix V – Test Boring Construction Standards.

4.1.3.2 Minimum Depth of Test Borings. Test borings in the area of an OWTS dispersal system shall extend to a minimum of 15 feet or to 10 feet below the depth of the required soil separation based on the percolation rate, as shown in Table 6.3-1, whichever is greater, unless refusal is reached. In no case shall there be less than 5 feet of unsaturated, permeable soil below the bottom of the infiltrative surface depth, unless an OWTS with supplemental treatment is proposed. An OWTS with supplemental treatment for nitrogen reduction shall have no less than two feet of unsaturated, permeable soil below the bottom of the infiltrative surface depth. An OWTS with supplemental treatment for pathogen reduction shall have no less than three feet of unsaturated, permeable soil

beneath the dispersal infiltrative surface depth. Deeper depths may be required depending on site-specific conditions as determined by DEHQ or the project qualified professional. Site-specific conditions may include but are not limited to the proposed depth of the system, local geology, soil types encountered, elevation and terrain, features on site, evidence and/or knowledge of historic ground water levels in the area, and the anticipated fluctuation of the groundwater table in times of normal to above normal annual rainfall.

4.1.3.3 To allow time for groundwater to stabilize in the test boring, the groundwater measurement must be taken after a minimum of 72 hours from boring completion. Forty-eight (48) hours' notice must be provided to DEHQ for staff to observe the boring after the 72-hour time period. The qualified professional and/or the property owner shall be responsible for securing open borehole or other excavations to protect the public from any hazards related to the test borings.

4.1.3.4 During periods of below normal average rainfall, or after periods of drought where there has not yet been sufficient ground water recharge, the absence of groundwater in test borings or monitoring wells in areas where groundwater is suspected may not satisfy the groundwater separation testing requirements. In these areas, it shall be necessary for ongoing monitoring of test borings or monitoring wells for a sufficient period of time to determine groundwater levels during an average or above average rainfall year and/or where full groundwater recharge has occurred. In addition to the groundwater measurements obtained by the qualified professional, DEHQ shall obtain groundwater measurements from the test borings on a periodic basis during wet weather and dry weather, if site conditions warrant (irrigation practices), to observe site conditions, monitoring well conditions, and to validate the groundwater measurement data.

4.2 Soil Information and Testing

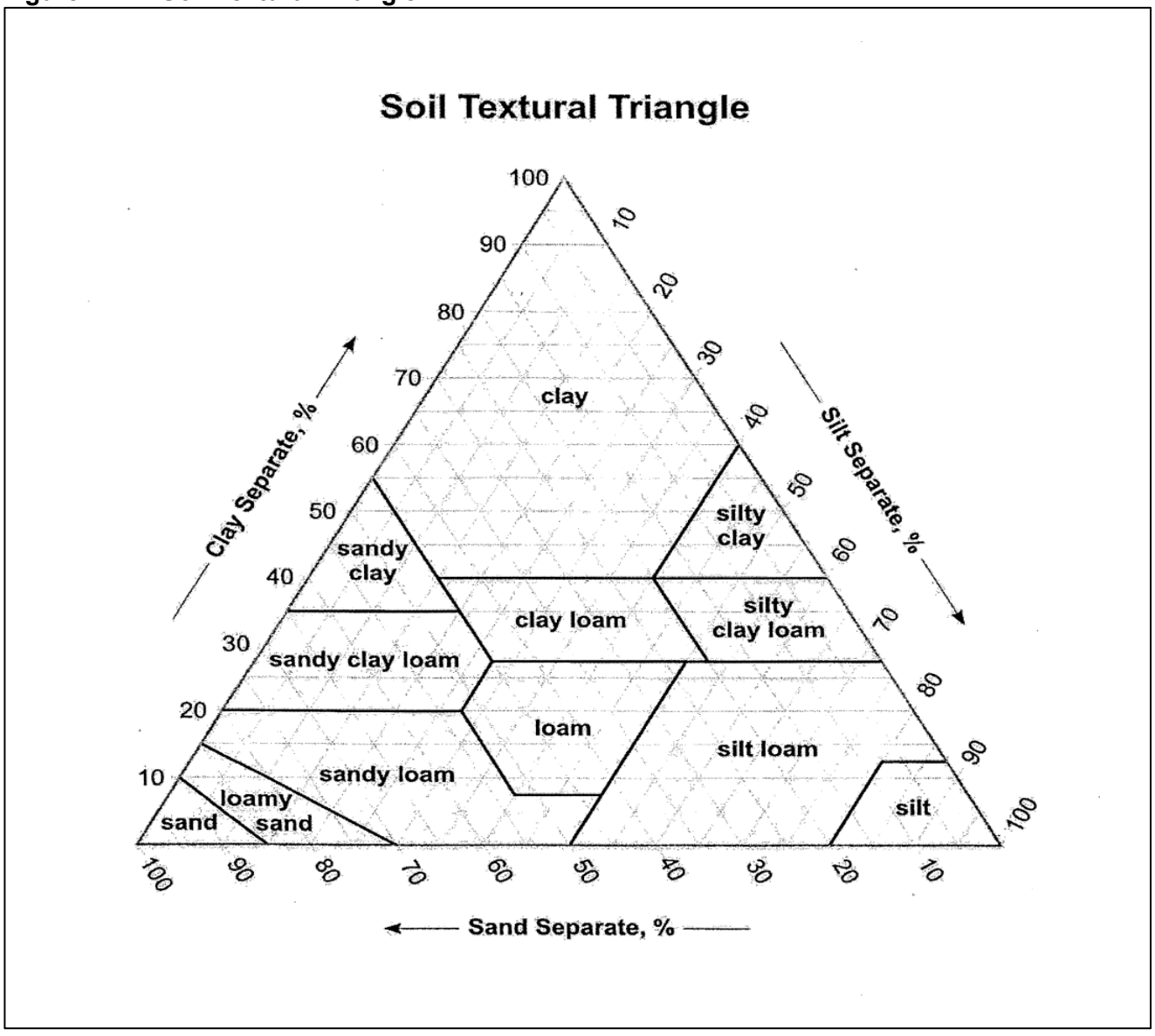
In addition to the groundwater testing requirements, the following soil testing requirements are designed to characterize the soil, including structure and texture, underlying the proposed dispersal field to determine the suitability for OWTS usage. The evaluation shall determine that adequate soil depth is present in the dispersal area. Soil depth is measured vertically to the point where bedrock, hardpan, impermeable soils, or saturated soils are encountered or are anticipated to be encountered or an adequate depth has been determined. Soil depth shall be determined through the use of soil profile(s) in the dispersal area and the designated dispersal system reserve area, as viewed in soil borings or excavations in representative areas.

A permit is required to install a test boring or monitoring well. Construction standards for a test boring (installed under the percolation test permit and used for ongoing monitoring beyond the typical soil profile/percolation testing activities associated with an initial site evaluation) is provided in Appendix V – Test Boring Construction Standards. All boring results are to be reported, including any results indicating the area is not suitable for OWTS usage and test holes which encountered groundwater or refusal.

4.2.1 All soils from site specific test holes, deep borings, backhoe excavations, and monitoring wells shall be described by the relative amount of sand, clay, silt, and combinations thereof as defined by the

soil textural triangle developed by the United States Department of Agriculture (USDA) as the *Soil Survey Manual, Handbook 18*. For some soil, standard terms may not be adequate and must be supplemented with narrative. Additionally, soils with other materials, including bedrock and other cemented horizons, rock fragments, artifacts, roots, volcanic, gypsum, or organic material shall be described as defined in the *Soil Survey Manual, Handbook 18*, Chapter 3.

Figure 4.2-1: Soil Textural Triangle



4.2.2 Rock fragment content of native soil surrounding the dispersal system shall not exceed 50% by volume for rock fragments sized as cobbles or larger and shall be estimated using either the point-count or line-intercept methods.

4.2.3 Leach Line System and Deep Bed Dispersal System Minimum Soil Testing Requirements

4.2.3.1 At least one deep boring in the primary and one boring in the designated reserve area should extend to a depth of at least 15 feet below the bottom of the infiltrative surface depth, or a minimum of 10 feet below the required vertical separation to groundwater as found in Table 6.3-1, or to impermeable material. Additional borings may be required to document uniformity of soil conditions in the dispersal and reserve areas.

4.2.3.2 Where appropriate, backhoe excavations may be used for the purposes of soil profile, depth of soil, and depth of groundwater determinations in lieu of borings. Backhoe excavations may be required to demonstrate uniformity of soil throughout the leach field area(s).

4.2.3.3 Dispersal systems in steep slopes of 30% to a maximum of 40% slope: A minimum of one soil profile boring in the primary and one boring in the designated reserve area shall be installed to a depth of 10 feet below the proposed infiltrative surface depth, or a minimum of 10 feet below the required vertical separation as found in Table 6.3-1, to demonstrate uniform conditions throughout the disposal area. Additional borings may be required, as needed to make this demonstration.

4.2.4 Vertical Seepage Pit System Minimum Soil Testing Requirements

4.2.4.1 Vertical seepage pits are restricted to coastal, sedimentary basins where the groundwater has been excepted from the water quality objectives as provided in the Water Quality Control Plans.

4.2.4.2 At least one deep boring should extend to a depth of at least 10 feet below the bottom of the seepage pit.

4.2.5 Drip Dispersal System Minimum Soil Requirements

4.2.5.1 At least one boring in the primary and one boring in the designated reserve area to a minimum of five (5) feet below infiltrative surface depth or to refusal to determine adequate soil interval. Additional borings may be required to document uniformity of soil conditions in the dispersal and reserve areas.

4.3 Percolation Testing Requirements

This section provides a consistent method for percolation testing in San Diego County. The objective is to determine the absorption capacity of the soils in the dispersal system and reserve areas necessary to properly size the OWTS with adequate infiltration surface area based on an expected hydraulic conductivity of the soil and the rate of loading and to provide for a system intended to allow for a long-term expectation of satisfactory performance.

The length of time needed for percolation tests will vary in different types of soil. Percolation rates must be determined on the basis of the test data obtained after the soil has had opportunity to become saturated and to swell for at least 24-hours. Saturation means that the void spaces between the soil particles are full of water. This can be accomplished in a relatively short period of time. Swelling is caused by intrusion of water into the individual soil particles. This is a slow process, especially in clay-type soil,

and is the reason for requiring a prolonged soaking period. After the 24-hour presoak, the percolation testing proceeds based on the conditions resulting from the presoak, in accordance with the procedures in this LAMP.

Percolation testing performed under permit and inspection from DEHQ is required for all site evaluations. However, previous percolation test data using test methods approved since 1978 may be valid and may be used at a later time to design and size an OWTS for a project. The percolation test record (percolation test form or other record with parcel or subdivision maps) shall be included in the OWTS Layout Report.

Sufficient tests must be made in separate holes to assure that the results are valid and represent the extent of the proposed dispersal areas.

4.3.1 All percolation testing for dispersal systems shall be conducted under permit and inspection from DEHQ using the procedures in Appendix I-Percolation Testing Procedures. Qualified professionals shall provide DEHQ with 48-hour notice prior to conducting a percolation test.

4.3.2 The test shall be performed by a qualified professional or subordinate who is registered with the DEHQ and has demonstrated knowledge of San Diego County ordinances relating to OWTS and the requirements of this LAMP.

4.3.3 Percolation testing shall not be conducted in areas within the minimum setback distances established to protect public health and/or water quality and in areas identified in Section 8.1.4.

4.3.4 Grading or clearing of brush for the purposes of completing a percolation test may require approval from other agencies, including County of San Diego Planning and Development Services and Department of Public Works, and may require the implementation of stormwater best management practices.

4.3.5 Percolation rates in excess of 120 minutes per inch demonstrate impermeable soil that is not considered suitable for an OWTS.

4.3.6 Number of Percolation Test Holes

4.3.6.1 A minimum of six (6) percolation test holes located within the primary and designated reserve areas are required at sites where the average percolation rate is 60 minutes per inch (MPI) or less.

4.3.6.2 At least four (4) percolation test holes at each deep bed location should be provided to represent soil types within the infiltrative surface area of the deep bed. This testing should represent the entire sidewall depth of the pit.

4.3.6.3 Vertical seepage pits are required to perform capacity testing in accordance with the requirements of Appendix II- Vertical Seepage Pit Dispersal Systems Percolation Test Procedures.

4.3.6.4 Percolation test holes shall be representative of the site conditions throughout the entire dispersal systems with equal consideration of the primary and designated reserve dispersal areas.

4.3.6.5 Additional test holes may be necessary on a site-specific basis for reasons that include, but are not limited to the following:

4.3.6.5.1 Unacceptable percolation test results, including percolation tests not performed in accordance with the procedures set forth in Appendix I-Percolation Test Procedures of this LAMP.

4.3.6.5.2 Failed percolation test results or rates that do not meet the minimum rates for the dispersal system proposed for use.

4.3.6.5.3 Areas of the dispersal field require additional testing to define limits for exclusion of unsuitable areas.

4.3.6.5.4 The dispersal system is located out of a concentrated area or is of larger areal extent than typical single residential unit installation.

4.3.6.5.5 Soil conditions are variable or inconsistent.

4.3.7 Depth of Percolation Test Holes

4.3.7.1 Test holes shall be representative of the dispersal system installation depth.

4.3.7.2 Conditions which may require testing deeper than the dispersal system depth:

4.3.7.2.1 Areas of potential impervious soil layers to a minimum of five feet below bottom of infiltrative surface of the dispersal field.

4.3.7.2.2 Slopes exceeding 30%.

4.3.7.2.3 Other factors as might be determined by DEHQ.

4.3.8 Soil Classification

4.3.8.1 All soil from site specific test holes, deep borings, and backhoe excavations shall be described by as provided in Section 4.2.1.

4.3.9 Location of and Identification of Percolation Test Holes

4.3.9.1 Test holes shall be staked and flagged so the test holes can be easily located.

4.3.9.2 The test holes must be identified with all of the following:

4.3.9.2.1 A test hole number or letter.

4.3.9.2.2 The depth of the test boring.

4.3.9.2.3 Lot/parcel number or letter if associated with a subdivision or lot line adjustment.

4.3.10 Drilling of Borings for Percolation Test Holes

4.3.10.1 Diameter of each test hole shall be a minimum of 6 inches and a maximum of 12 inches.

4.3.10.2 If a backhoe excavation is used, a test hole at 12–14 inches in depth shall be excavated into the bottom of the trench.

4.3.11 Preparation of Percolation Test Holes

4.3.11.1 The sides and bottom of the holes shall be scarified so as to remove the areas that became smeared by the auger or other tool used to develop the hole.

4.3.11.2 All loose material shall be removed from the hole.

4.3.12 Percolation Test Procedures

Percolation testing shall be performed in accordance with the procedures provided in Appendix I - Percolation Test Procedures of this LAMP.

4.3.13 Dispersal System Requirements

4.3.13.1 Percolation testing shall be performed in accordance with the requirements of this Chapter and the procedures in Appendix I-Percolation Test Procedures of this LAMP. Percolation tests, along with deep borings, and backhoe excavations are used to demonstrate that the primary dispersal area and reserve locations are located in areas of uniform soil, and that no site conditions exist which could adversely affect the performance of the system or result in surfacing sewage or groundwater contamination.

4.3.13.2 Percolation Design Rate

4.3.13.2.1 Where dispersal areas (including primary and designated reserve) are co-located and the soil profile and percolation testing show uniform soils throughout the area, the percolation testing results from all test holes may be averaged to determine the final percolation rate to be used for the design of the dispersal system.

4.3.13.2.2 Where the dispersal areas (including primary and/or designated reserve) are not

co-located, and the soil profile and percolation testing show uniform soils for each different dispersal area, the percolation testing results for each different area may be averaged to determine the final percolation rate to be used for the design for that specific dispersal area.

4.3.13.2.3 Where the soil profile and percolation testing do not show uniform soils in any specific dispersal area, additional soil profile and percolation testing may be required or the slowest percolation rate for the specific area may be used to determine final percolation rate to be used for the design for that specific dispersal area.

4.3.13.3 Leach line dispersal systems are limited to soils with percolation rates of 120 minutes per inch or less.

4.3.13.4 Deep bed dispersal systems are limited to soils with percolation rates of 30 minutes per inch or less in any portion of the deep bed dispersal areas. Individual rates exceeding 30 minutes per inch may be considered with additional soil testing.

4.3.13.5 Depth of percolation test for deep bed dispersal systems must be representative of the bottom infiltrative depth of the pit and all soil types of the sidewall infiltrative surface area of the deep bed. The testing should represent the entire sidewall depth of the pit.

4.3.13.6 Where dispersal systems are proposed in steep slopes of 30% to a maximum of 40%, percolation testing must provide data representative of the entire primary and designated reserve dispersal areas to demonstrate that conditions are uniform below the entire disposal areas. The minimum testing required is the same as above for regular dispersal. Additional testing may be required to determine extent of uniformity of soils, if needed.

4.3.14 Percolation Test Results Reporting

4.3.14.1 Percolation testing is only one critical factor in the site evaluation process. All test data and required information shall be submitted as part of a comprehensive OWTS Layout Report on approved DEHQ forms with appended data or information as needed.

4.3.14.2 All percolation testing results are required to be reported, including any results not meeting minimum rates suitable for OWTS usage and test holes which encountered groundwater or refusal.

4.3.14.3 Reports shall be signed and stamped, if appropriate, with an original signature by the qualified professional who either performed or supervised the testing. Scanned copies of original signatures are acceptable for the purpose of electronic submittals.

4.4 Slope Stability Initial Screening and Study

4.4.1 A slope stability study is required for natural slopes and cut slopes of 30% to 40% in areas

proposed for OWTS usage, where the initial site evaluation has identified evidence of slope instability, such as unconsolidated fill, significant erosion rills, tension cracks, evidence of prior earth movement or slides, and leaning trees. Cut slopes are excavated along natural hillsides, through ridges and mesas, and into existing embankment. The stability of slopes can be assessed through appropriate geotechnical investigation, analysis, and design thereby preventing landslides, slip outs, slumps, severe erosion, and safety issues.

4.4.2 A Slope Stability study shall be completed by a qualified professional.

4.4.3 Areas with evidence of unstable land masses are not appropriate for OWTS usage.

4.4.4 The Slope Stability study must assess the risk of slope failure, creep, or other movement which could damage the OWTS or endanger life or property. The study shall also address any potential risk to the slope stability from the use of an OWTS at that location. The Report shall include data, calculations, and assumptions used in formulating the opinion and any recommendations. The OWTS design shall incorporate the recommendations of the assessment report.

4.4.5 The qualified professional shall propose additional site investigation, borings, and/or testing, as needed, to provide sufficient data to complete the slope stability evaluation.

4.4.6 Minimum report information. The Slope Stability Report must contain the minimum information provided in Table 4.4-1.

4.4-1: Minimum Information Requirements for Slope Stability Study Reports
Description of project and site including proposed location of OWTS dispersal system.
Description of any proposed or completed grading for the project at the site.
Description of the site and investigation completed at the site (number, depth, location of borings, soil sampling and test methodologies, etc.).
Site specific topography map scaled to two (2) foot contours, cross section(s) of hillside soil profiles.
Results of site evaluation, including observed slope conditions and geotechnical investigation results.
Specific recommendations for grading actions, if warranted.
OWTS dispersal design recommendations to include scaled dispersal system layouts and profiled designs based on accurate topography.
Other information as requested by DEHQ.

CHAPTER 5.0 SITE EVALUATION AND OWTS LAYOUT REPORT REQUIREMENTS

5.1 General

5.1.1 All test data and required information shall be submitted on approved DEHQ forms with appended data or information.

5.1.2 Reports shall be signed with an original signature and stamp, if applicable, by each qualified professional who either performed or supervised the testing or otherwise contributed to the report.

5.1.3 San Diego County Code, Section 68.328 requires all percolation testing to be done by a civil engineer, geologist, or environmental health specialist, registered in the State of California. These qualified professionals are required to be registered with DEHQ.

5.1.4 The percolation test is only one critical factor in siting an OWTS. Site considerations may require special evaluation by a qualified professional to technically address issues such as high groundwater, steep slope, nitrate impacts, cumulative impacts, mounding, and horizontal transmissibility.

5.1.5 Qualified professionals who employ technicians are responsible for the work performed by the technician. It is incumbent upon the qualified professional to properly train, equip, and supervise anyone performing work under his or her direction and license. It is expected that technicians or subordinate personnel will receive adequate direct supervision while performing field work to ensure compliance with the minimum requirements of this LAMP.

5.2 OWTS Layout Report Information

An OWTS Layout Report shall be submitted on the application provided by DEHQ and must include all minimum required information to be considered complete. All maps and schematics should be prepared using standard engineer's scale on no larger than 11" x 17" size paper. The appropriately sized paper should be based on the scope and scale of the project.

5.2.1 The OWTS Layout Report shall contain the minimum information listed in Table 5.2-1 or as required by the department.

Table 5.2-1: Minimum Information Requirements for OWTS Layout Reports
Site address.
Assessor's Parcel Number.
Owner's name, mailing address, and phone number.
Qualified Professional's name, mailing address, and phone number.
Type and scope of project (e.g., new dwelling, new structure, guesthouse, an addition, use permit, subdivision of land).
Number of existing bedrooms, number of proposed bedrooms.

Sources of wastewater to proposed OWTS.
Volume, character, and strength of wastewater with supporting calculations, data and sources of information.[1]
Commercial Food Service Building-location, design, and sizing of oil/grease interceptor.
Number of existing or proposed bedrooms (as determined by Section 6.5.1).
Legal basis of parcel (e.g., map and lot number, plat number).
Vicinity Map, Scale (Engineer scale not to exceed 1" = 60'), North arrow, Map does not exceed 11" x 17" paper.
Property lines and lot dimensions (provide an over sheet (larger scale allowed) and detail sheet(s) for large parcels.
Topographical lines and elevation points (include pad grade, finished floor, septic tank, leach lines, slope arrows, percent slope and direction of fall, slope range, etc.).[2]
Locations of existing and proposed primary and designated reserve dispersal areas.
Septic tank and dispersal areas sizing calculations and design details, tank certifications and approval.
All applicable setback distances shown on layout.
All existing and proposed grading, significant rock outcroppings, slopes in excess of 20%.
All known, recorded easements on or within 20 feet of lot boundaries (open-space, utility, road, waterline, etc.).
Identify source of potable water, location of all public waterlines on or within 25 feet of property, and include a signed water line statement.
Location of all wells on or within 150 feet of property, location of all public wells within 600 feet of property line.
Location of drinking water reservoirs within 2,500 feet of property line.[3, 4]
Location of drainage ways on and within 50 feet of property line.[3, 4]
Location of streams, springs, ponds, flood plains, lakes on and within 200 feet of property line.[3, 4]
Location of known, proposed, or potential stormwater treatment and retention facilities.
Location and discussion of any impaired water bodies, Basin Plan special provisions or exception areas, or other special conditions in proximity to site.
Methods and results of all soils testing, including soil profile test holes and percolation tests, plotted on the design (matches flagged locations in the field).
Name and description of groundwater basin underlying or near property, if applicable.[3] Methods and results of site-specific depth to groundwater analysis and testing, if required.
Methods and results of slope stability study, if required.
Methods and results of other required studies/information.
Sign-off of proposed layout by local water district or company, if required.

1-Single family residential domestic wastewater with no other wastewater generating activities (i.e., home kitchen operations) are assumed to be low strength wastewater and volume assumed to be 150 gallons per day per bedroom.

2-Describe using USDA NRCS Slope Classes: 0-3% nearly level; 3-7%-gently sloping; 7-12%-strongly sloping; 12-20%-moderately steep; 20-30%-steep; 30-40%-very steep; >40%-extremely steep.

3-Surface water bodies information: USGS *The National Map* (https://apps.nationalmap.gov/viewer/), as well as site specific observations of local drainage patterns.

4-Groundwater and surface water information: RWQCB San Diego Region, Basin Plan webpage, the *San Diego Basin Plan Map.* Link: (San Diego Basin Plan Map (ca.gov), as well as site specific groundwater levels.

5.2.2 The additional information is required for OWTS with Supplemental Treatment

Table 5.2-2: Minimum Information Requirements for OWTS Layout Reports with Supplemental Treatment
All items listed in Section 5.2.1.
A list of all supplemental treatment components and associated certifications.
A diagram showing the layout design of all supplemental treatment components on the parcel, including control box location.
The OWTS design specifications and configuration for the primary dispersal area.
The OWTS design specifications and configuration for the designated reserve area.
Sizing calculations from the qualified professional.
Design specification worksheet for drip dispersal line (if used) (i.e., GeoFlow worksheet).
Pump(s) specifications and pump curve(s), friction and head loss calculations.
Control or alarm box with telemetric reporting specifications, certifications.
Documentation of the 24-hour emergency storage capacity above the high float alarm level.
An Operations and Maintenance Plan detailing the activities and frequencies of all ongoing operation and maintenance tasks for the specific system being installed (to be finalized and approved prior to the final of the installation permit).
An Owners Statement related to the feasibility of the installation and ongoing operation of the OWTS with supplemental treatment.
Copy of recorded Covenant or Agreement document prior to the issuance of the installation permit.

5.3 Minimum Steep Slope/Slope Stability Study Information

Applicant shall provide the minimum information required pursuant to Section 4.4 for sites where a slope stability study is required.

CHAPTER 6.0 SITING AND DESIGN CRITERIA

6.1 General

The most common type of OWTS found in San Diego County consists of a septic tank connected to a dispersal field consisting of rock or chamber filled leach lines. Variations of this system may include a septic tank connected to either a deep bed or vertical seepage pit dispersal system.

In some areas, the dispersal field may be located at a higher elevation than the building site. In this instance, a pump-system is used to deliver the wastewater from the location of the septic tank or building site to the dispersal field location where it is then distributed by gravity flow. These OWTS are considered standard OWTS because no further sewage treatment is performed between the septic tank and the dispersal field. In all cases, the septic tank provides the initial treatment of the sewage with the resultant effluent wastewater discharged below the ground surface, where it undergoes further treatment processes, including digestion by bacteria, in the unsaturated soil zones underlying the dispersal field. When sited and designed properly, these OWTS are designed to operate in all normal weather conditions with minimal maintenance, including cleaning of effluent filters and periodic septic tank pumping to remove accumulated scum and sludge from the septic tank. Areas subject to flooding or low-lying areas that have a potential of flooding or are not suitable for OWTS usage.

In addition to standard OWTS, OWTS with supplemental treatment that meet the minimum requirements of this LAMP are allowed for use where additional treatment of wastewater is needed. OWTS with supplemental treatment must be certified NSF/ANSI 245 by the National Sanitation Foundation, or other approved third-party tester, to meet a 50 percent reduction in total nitrogen when comparing the 30-day average influent to the 30-day average effluent. This additional treatment may be required to mitigate for shallow groundwater or inadequate soil interval depth, or to meet any other requirement to prevent or minimize impacts to groundwater or surface waters. OWTS with supplemental treatment typically use drip dispersal as the method for effluent disposal. Due to the complexity of these systems, ongoing maintenance contracts and annual operating permits are also required.

This chapter provides general siting and design criteria. Specific septic tank and subsurface dispersal field requirements are provided in Chapters 7.0 and 8.0.

6.1.1 The siting, design, operation and maintenance of all new OWTS must meet the provisions of the site evaluation and other required studies for that specific parcel and these standards.

6.1.2 No person shall connect any dwelling, structure or other source of sewage or wastewater to an existing OWTS without first obtaining approval from DEHQ.

6.2 Primary and Designated Reserve Dispersal Area Requirements

6.2.1 In addition to primary system design criteria, all OWTS design proposals, for both new construction and additions to an existing structure, must show a designated reserve area sufficient to

accommodate 100% of the design of the primary OWTS the applicant proposes to install. Parcels previously approved with a reserve area smaller than the current standards must meet current design standards.

6.2.2 The designated reserve area shall not be built on or used for any other purpose that conflicts with or prevents the use of the area for OWTS.

6.2.3 All designated reserve areas shall be sized based on a minimum 100% of the area needed for the primary OWTS and dispersal field being installed at the time of the permit. However, an alternative dispersal field design can be considered on a case-by-case basis, if warranted.

6.3 Groundwater Separation Requirements

6.3.1 The minimum depths from the highest known groundwater to the bottom of the dispersal system are noted in Table 6.3-1. The minimum separation of the bottom of dispersal system to groundwater for vertical seepage pits is 10 feet.

6.3.2 The groundwater separation depth (minimum soil depth) for sites where an OWTS with Supplemental Treatment for nitrogen reduction are used may be reduced to a minimum of two (2) feet, where appropriate.

6.3.3 The groundwater separation depth (minimum soil depth) for sites where an OWTS with Supplemental Treatment for pathogen reduction are used may be reduced to a minimum of three (3) feet, where appropriate.

6.3.4 A reduction of the minimum separation may be approved where percolation rates are less than five (5) minutes per inch if the site does not overlie groundwater protected for drinking water supplies or is located more than 2,500 feet from an impaired water body or drinking water reservoir or tributary but shall be no less than eight (8) feet for a leach line and ten (10) feet for a seepage pit.

Table 6.3-1: Minimum Separation Depths to Groundwater and Minimum Soil Depth from the Bottom of the Dispersal System

Percolation Rate	Minimum Separation and Depth
Percolation Rate ≤1 MPI	Twenty (20) feet
1 MPI< Percolation Rate ≤ 5 MPI	Twenty (20) feet
5 MPI< Percolation Rate ≤ 30 MPI	Eight (8) feet

30 MPI< Percolation Rate ≤ 120 MPI	Five (5) feet
Percolation Rate > 120 MPI	Not suitable for OWTS Usage
MPI = minutes per inch Notes: 1-Minimum groundwater separation for seepage pits is ten (10) feet. 2-Minimum groundwater separation for OWTS with Supplemental Treatment designed for nitrogen reduction is two (2) feet. 3-Minimum groundwater separation for OWTS with Supplemental Treatment designed to reduce pathogens is three (3) feet. 4-Percolation rates for leach lines shall be 120 MPI or faster. 5-Percolation rates for deep bed dispersal systems shall be 30 MPI or faster.	

6.3.5 Testing procedures to determine the groundwater separation are found in Chapter 4.0, Section 4.1.

6.4 Wastewater Characterization

Accurate characterization of the pollutant load in wastewater is necessary to determine coverage under this LAMP. The scope of coverage and prescribed standards in this LAMP are limited to OWTS treating low strength domestic wastewater. Low strength wastewater is wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) of 300 mg/L or less, total suspended solids (TSS) of 330 mg/L or less, or fats, oil, and grease (FOG) concentration of 100 mg/L or less prior to the septic tank or other OWTS treatment unit.

Wastewater with pollutant loads above the concentrations listed above are considered high strength and are not permitted through the local permitting program, with the exception of high strength wastewater up to 900 mg/L BOD from a commercial food service building with a properly sized and functioning oil/grease interceptor. Proposed projects generating high strength wastewater must make application with the appropriate Regional Board.

The main constituents of concern to groundwater are nitrogen and pathogens. Protection of groundwater quality is achieved by implementing the minimum vertical separation distance between the dispersal system and the highest expected rise of the water table. This provides an unsaturated zone wherein high degrees of physical, biological, and chemical treatment occur. Surface waters are similarly protected by the implementation of lateral setback requirements. The buildup of nitrogen in groundwater is potentially the most significant long-term consequence of OWTS usage.

6.4.1 Residential Wastewater Characterization

OWTS serving single family residential domestic uses can be assumed to have low strength wastewater characteristics. Concentrations of constituents in typical domestic wastewater are available in various publication, including the EPA Design Manual, 1980 and 2002 versions. Total nitrogen concentrations in effluent have been reported to vary from 25 mg/L to as much as 100 mg/L, with the average generally being in the range of 35 to 45 mg/L (US EPA 1980).

The OWTS Layout Report shall include a description of any activity within a residential structure that may affect the characteristics of the wastewater generated. These activities shall include home-based food

preparation for non-residents such as cottage food operations or micro enterprise home kitchens.

6.4.2 Nonresidential Wastewater Characterization

Nonresidential establishments can have significant variation in wastewater characteristics. The wastewater stream from existing facilities should be sampled to determine the pollutant loads. New proposed projects can be estimated based on available data, including charts in the EPA Design Manuals relating to per fixture mass loading or contributions. Characterization data from existing facilities with similar use and occupancies can also provide this information.

6.5 Wastewater Flow Determinations

The required hydraulic capacity for an OWTS is determined initially from the estimated wastewater flow. Accurate characterization of raw wastewater, including daily volumes and peak flows are critical for effective system design.

6.5.1 Residential Wastewater Flows

For the purposes of designing a dispersal system, residential dwelling projected flows are based on the number of bedrooms in the dwelling unit, as determined below, and a minimum volume of 75 gallons per day per person water usage and a minimum occupancy of two persons per bedroom. The number of bedrooms is calculated in accordance with the following guidelines.

6.5.1.1 The living room, dining room, family room, kitchen, bathrooms, and utility rooms are not considered bedrooms. All other rooms shall be considered as potential sleeping rooms. All other habitable rooms totaling at least seventy (70) square feet in size are to be considered bedrooms suitable for sleeping purposes, regardless of whether or not they contain closets or have access to a bathroom. Dens, libraries, studies, weight rooms, sewing rooms, workshops, etc., shall be considered bedrooms, unless they conform to the criteria listed below.

6.5.1.1.1 Rooms that open to a living room, dining room, family room, kitchen, or entry way, and have a single, un-obstructive opening (no doors) with a minimum 50% opening of the total wall space (minimum 6’ wide) with archways or other acceptable means shall not be considered as bedrooms, due to the lack of personal privacy presented by the opening.

6.5.1.1.2 Rooms that can only be accessed through another bedroom are to be considered part of that bedroom, such as master suite, and not an additional bedroom.

6.5.1.2 Plans for proposals where it is not clear if a specific room is to be considered a bedroom may be rereviewed on a case-by-case basis by DEHQ.

6.5.1.3 Projects proposing the relocation or modification of doorways are to be reviewed and approved by the building department to address any structural considerations such as load bearing walls prior to approval or sign-off by DEHQ.

6.5.2 Commercial Wastewater Flow

6.5.2.1 If there is no actual data available to determine the wastewater flow from the commercial facility, data from the following water use computation table may be used. Other data sources may be used as approved by the DEHQ (i.e., EPA Design Manual, CA Plumbing Code App. H).

Table 6.5-1: Commercial Minimum Wastewater Flow Guidelines	
Type of Establishment	Gallons Per Person Per Day (Unless otherwise indicated)
Rooming Houses	50 gal
Boarding Houses	60 gal
Motels/Hotels	50 gal
Restaurant with cocktails lounges	100 gal/seat or 35 gal per person
Bars or cocktail lounges	20 gal
Campgrounds with bathhouse	35 gal
Recreational Vehicle Camps	100 gal/per space
Tourist Camps with individual bath units	75 gal
Retail Markets with public toilets	150 gal/per fixture
Retail Markets without public toilets	0.1 gal/sq ft
Day Camps (no meals served)	15 gal
Day Schools and Day Care facilities with no cafeteria or showers	15 gal
Day Schools with cafeterias, gyms, and showers	25 gal
Boarding Schools	100 gal
Day Workers at schools/offices (per shift)	15 gal
Institutions other than hospitals (involuntary)	175 gal
Industrial Buildings (gallons/person/shift, exclusive of industrial waste) with food cafeteria	25 gal
Industrial Building no food cafeteria	15 gal
Picnic Parks (toilet waste only gallon/picnicker)	5 gal
Swimming Pools and Bathhouses	10 gal
Country Clubs (per resident member)	100 gal
Drive-In Theaters (per car space) with snack bar	10 gal
Movie Theaters (per seat) with snack bar	10 gal
Airports (per passenger)	5 gal
Self-service Laundries	1000 gal/machine
Stores (per toilet fixture per employees/public use	150 gal /fixture
Service Stations (per vehicle served)	10 gal
Public Gatherings (auctions, ball games, fairs, etc.)	10 gal
Food preparation wholesale	250 gal/employee/shift
Churches-no kitchen	5 gal/seat
Churches-with kitchen	10 gal/seat
Kennels	10 gal/dog

Note: Structure occupancies not classified above shall base their sewage flows on one-year actual water use of a similar occupancy supplied by the applicant. Other flows may be proposed based on approved criteria, such as Manual of Septic Tank Practice or the EPA Design Manual-Onsite Wastewater and Disposal Systems or other acceptable publication.

6.6 Minimum Setbacks

Setbacks in layout designs refer to the required spacing in distance from components of the OWTS and to structures, property lines, easements, watercourses, wells, or grading. Specific setback requirements are specified in the Table 6.6-1.

Table 6.6-1: OWTS Minimum Setback Requirements

Setback Descriptions	Septic Tank	Leach lines and deep beds (depth < 10')	Vertical Pits and deep beds (depth > 10')[12]
Water Well – Private[1]	100'	100'	150'
Water Well – Public[1]	150'	150'	200'
Property Line[2]	5'	5'	10'
Structures, Driveways, Swimming Pools	5'	8'	10'
Water Mains (public)[3]	--	25'	25'
Private Utility Trenches	5'	10'	10'
Road or other Easements[4]	5'	10' from edge of ultimate easement width	10' from edge of ultimate easement width
Septic Tank	--	5'	10'
Drip Lines	5'	6'	6'
Leach Lines[5]	5'	10' center to center	10' edge to edge
Deep beds	10'	10' edge to edge	10' edge to edge
Seepage Pits	10'	20' edge to edge	20' edge to edge
Cut Slope[6,7,8]	10'	5' horizontal distance for every 1' in rise setback from top of cut slope to maximum of 100'	5' horizontal distance for every 1' in rise setback from top of cut slope
Unstable Land Mass[8]	100'	100'	100'
Graywater Dispersal Areas	5'	5'	5'
Stormwater Features, Surface Runoff Channels, Swales, Man-made Ponds, Ditches, 5' in Depth or Less[10]	25'	25'	25'

Stormwater Features, Surface Runoff Channels, Swales, Man-made Ponds, Ditches Greater than 5' in Depth[10]	50'	50'	50'
Springs, Flowing Surface Water Bodies, Streams, Creeks, Rivers, Ephemeral[9] and Intermittent Water Bodies	100'	100' from edge of flow line or top of bank	100' from edge of flow line or top of bank
Pond, Lake, Reservoir, Vernal Pools, Wetlands, Other Surface Water Bodies	200'	200' from spillway elevation or from where the edge of that water body is the high-water mark, whichever is greater	200' from spillway elevation or from where the edge of that water body is the high-water mark, whichever is greater
Aqueduct[11]	100'	100' to pipeline	100' to pipeline
Lake, Reservoir, Flowing Water Body for OWTS located <1,200 feet of Surface Water Intake of Public Water System	100'	400'	400'
Lake, Reservoir, Flowing Water Body for OWTS located 1,200-2,500 feet of Surface Water Intake of Public Water System	100'	200'	200'

1- The minimum setback may be increased if site conditions show the minimum setback is insufficient to protect groundwater supplies. Setback includes hand dug wells. All wells must meet well standards as required pursuant to San Diego Regulatory Code Title 6, Division 7, Chapter 4. Minimum distance from building sewer (lateral) is 50' (County Plumbing Code, California Well Standards).

2- Applies to developed lots, and undeveloped lots of sufficient size, with no potential to impact neighboring parcel. For lots with potential to impact neighboring parcel, minimum distance to property line from dispersal field is 50'.

3-25' from water main or 10' from edge of easement, whichever is greater. California Waterworks Standards are applicable (California Code of Regulation, Title 22, Division 4, Chapter 16).

4- The setback may increase if a cut slope is present and the 5:1 (5' horizontal distance for every 1' vertical distance) setback to the road cut is greater than the minimum road easement setback. Setback may increase if easement documents require a greater distance.

5- The distance between leach lines can be reduced to 6' from sidewall to sidewall for sites where the design percolation rate is 30 MPI or less, the effluent is distributed by equal distribution (distribution box), and the slope is 10% or less.

6- For drip dispersal: a 3:1 setback (3' horizontal distance for every 1' in vertical rise) from top of cut slope to maximum of 25' is permitted.

7- The maximum 100' setback would also be applied to the top of an eroded bank or natural slope more than 60%. A reduction in setback to 50' may be considered when the site evaluation demonstrates adequate site characteristics to prevent sewage surfacing on the face of the bank or slope.

8- Other setback distance allowed, if recommended by a geotechnical report prepared by a qualified professional (see slope stability requirements).

9- Setback may be reduced to 50' where an OWTS with supplemental treatment is utilized.

10- Setback may be reduced to 10' for man-made features that are fully lined, contained in a watertight tank or pipe, or where the site evaluation shows no potential for comingling with wastewater.

11-A reduction to 50' may be considered when the site evaluation demonstrates adequate site characteristics to prevent sewage moving laterally to pipeline trench. Where a utility requires a greater setback distance, this distance shall apply.

12-Rock-filled deep bed and vertical seepage pit dispersal systems may be allowed to be installed under a driveway if site

conditions warrant.

6.7 Minimum Repairs

This section provides the minimum requirements for the permitting of the repair of defective OWTS components and/or defective dispersal field. All repairs or replacements shall be performed under a permit issued by DEHQ.

6.7.1 All metal, fiberglass, or cement septic tanks or treatment units that are in a state of disrepair, are showing signs of deterioration, or are no longer watertight must be replaced with a septic tank that meets the requirements of this LAMP. All wood septic tanks shall be replaced at the time of an OWTS repair.

6.7.2 All existing brick-lined or open seepage pits shall be properly destroyed by backfilling with approved material or completely rock filled if intended for future use.

6.7.3 All repairs to OWTS or replacements shall meet existing standards of construction and design, including setbacks. Where an OWTS repair or replacement cannot meet an existing standard of construction or design, repairs that are in substantial conformance, to the greatest extent practicable, with the requirements of this LAMP may be authorized under a variance in accordance with Chapter 10, Section 10.3.

6.7.4 All OWTS experiencing reduced or slower dispersal field absorption rates under normal design parameters and require pumping to keep sewage from seeping or surfacing is considered a defective system and shall be repaired.

6.7.5 All sewage or wastewater must be prevented from surfacing from an OWTS by pumping as needed by a business licensed pursuant to the California Health and Safety Code Section 117415.

6.7.6 A minimum OWTS repair shall be as previously approved by DEHQ for the parcel.

6.7.7 For OWTS serving a residential structure(s) where no reserve design has been previously approved, the equivalent of leach line length for one bedroom as provided in Table 8.2-1 shall be added to an existing OWTS dispersal system to provide opportunity for the existing infiltrative surface area to recover some functionality. Where the original design of the OWTS makes it impractical to add equivalent leach line length, the dispersal system shall be replaced.

6.7.8 For OWTS serving a commercial structure where no repair design has been previously approved, a minimum infiltrative surface of 50% of the leach line requirement for the current peak use or equivalent shall be added to the exiting OWTS dispersal system to provide opportunity for the existing infiltrative surface to recover some functionality. Where the original design of the OWTS makes it impractical to add equivalent leach line length, the dispersal system shall be replaced.

6.7.9 Where the entire dispersal field is not functional and no recovery of absorption infiltrative

surface is expected, as in extensive root intrusion, the dispersal field shall be replaced. A site evaluation may be required.

6.7.10 Any OWTS which has had more than one repair due to dispersal field failures, shall install a full replacement dispersal field. A site evaluation may be required to determine the siting and design requirements for the OWTS to prevent future defective conditions in the replacement installation.

6.7.11 Removal of non-habitable accessory structures, root invasive trees, paved areas (sidewalks, secondary driveway, patios, etc.), or other structures/items occupying the remaining usable land area for OWTS dispersal may be required prior to the approval of the repair.

6.7.12 Dispersal system repairs or replacement must be located in an area of native soils not previously used for OWTS dispersal. Where area for dispersal is limited, the reuse of areas formerly used as a dispersal area demonstrated to have functioning infiltrative capacity may be considered where there is sufficient native soils or engineered fill to accept the wastewater to be generated.

6.7.13 A site evaluation and OWTS Layout Report shall be required where changes are proposed to the use or occupancy of the residence, facility, or site, or where there will be changes to the approved wastewater characteristics or volumes, or where modifications to the OWTS is required.

6.8 Effluent Pipeline Crossings

6.8.1 Building Drain and Building Sewer. The building drain is the lowest piping of a drainage system that receives the discharge from waste drainage pipes inside the walls of the building and conveys to the building sewer that begins two feet outside the building wall. The building sewer is the horizontal piping of a drainage system that extends from the end of the building drain and that receives the discharge of the building drain and conveys it to the OWTS. The building drain, building sewer, and any ejector or other pumps within these areas are not part of an OWTS Installation or Repair Permit but must meet all requirements of the County Plumbing Code, including the crossing of the building sewer with other utilities or roadways and easements.

6.8.2 Effluent Piping Conveyance. The effluent piping conveyance is the non-perforated pipe that conveys wastewater effluent from the septic tank, other treatment tank or component, or pump tank to the OWTS dispersal field.

6.8.3 Roadway or Easement Crossings. Effluent piping conveyances proposed to be installed through a roadway or an easement shall be designed by licensed civil engineer to withstand all anticipated traffic loads. All easement crossings shall comply with the easement agreement or recorded document requirements and shall not be installed where prohibited.

6.8.4 Drainage or Water Body Crossing. Because of the potential for harm to public health and water quality should effluent piping conveyances over or through a drainage course or water body fail, the installation shall only be permitted when no other option is available for sewage disposal. All effluent piping conveyance systems proposed for crossing over or through a drainage course, ephemeral

stream or flowing stream (bridge, trestle, pipe free span, buried) shall comply with the following requirements with proof of compliance to be submitted with the OWTS Layout Report and/or as a condition of the OWTS Installation Permit.

6.8.4.1 Permits. In addition to the OWTS Installation Permit, all required Federal, State and local permits shall be obtained and compliance of permit requirements shall be met. Any modification to an existing bridge or other structure crossing a drainage course or water body to accommodate an effluent piping conveyance shall be reviewed by the agency having jurisdiction for the permitting of the bridge or structure to ensure the integrity of the structure design is not compromised.

6.8.4.2 Design. The design of the effluent piping crossing specifications shall be by a licensed civil engineer with experience with such crossing design and shall, at a minimum, address current industry standards, including water tightness, erosion control, and anchoring. The crossing pipe shall be designed with secondary containment and, if needed, an additional 50 percent working pressure factor. The installation of identifying location markers and a block (gate) valve or a check valve on each side of the crossing shall be included, taking into consideration the flow direction and the terrain when selecting the type of valves.

6.8.4.3 Operations and Maintenance Plan. An Operations and Maintenance Plan shall be prepared by the licensed civil engineer responsible for the design of the crossing and shall include all activities and frequencies needed to maintain and monitor the integrity and tightness of the effluent piping conveyance. The property owner shall maintain and monitor the effluent piping conveyance in accordance with the Operations and Maintenance Plan. The property owner shall maintain records of such compliance and provide to DEHQ upon request.

CHAPTER 7.0 SEPTIC TANK REQUIREMENTS

All new and replacement septic tanks must be installed under a permit issued from DEHQ and meet the minimum sizing and design specifications and requirements for septic tanks provided in this chapter.

7.1 Construction

7.1.1 New and replacement septic tanks must be approved by the International Association of Plumbing and Mechanical Officials (IAPMO). Plans for all prefabricated concrete septic tanks shall be prepared by a California registered Civil Engineer and submitted to DEHQ for approval. All concrete septic tanks or other tanks shall be monolithic and shall consist of a solid bottom tank with a separate top or lid designed to be located above the highest operating water level in the tank, and that is installed and sealed with approved material and compression fittings. The plans shall meet minimum appropriate industry standards (ASTM, American Concrete Institute (ACI), American Association of State Highway and Transportation Officials (AASHTO)), the minimum requirements for septic tanks in Appendix H of Part 5, Title 24 of California Code of Regulations (Plumbing Code), and shall show all dimensions, reinforcing, structural calculations, certifications, and any other pertinent data as may be required. Independent laboratory tests and engineering calculations certifying the tank capacity and structural stability may be required.

7.1.2 Septic tanks shall be designed and sized to produce adequate clarified effluent and space for sludge and scum accumulations.

7.1.3 Septic tanks must be constructed of solid and durable materials and not subject to excessive corrosion or decay and shall be watertight and possess two compartments. The inlet compartment shall be no less than two thirds the total capacity, and the second compartment at least one third of the total capacity. Septic tanks, pump chambers or other related components of an OWTS including risers may be required to undergo a water tightness test at the site of the installation, if needed.

7.1.4 Septic tanks must be anchored to counter any potential buoyant forces. Septic tanks shall be certified by the manufacturer to allow for burial without being water filled to allow for routine maintenance or to be used as a holding tank as needed.

7.1.5 Septic tanks shall be installed per the manufacturer's instructions.

7.1.6 The bottom of the excavation for the tank shall extend into native or compacted soils to eliminate potential settling issues, unless otherwise provided for in manufacturer's installation instructions.

7.1.7 Septic tank location must take into account maintenance and pumping requirements including vehicle access and distance and elevation lift to pumper truck.

7.1.8 All tanks must have an uncapped tee fitting on the inlet. Inlet tees must extend at least 14 inches below the liquid level.

7.1.9 Outlet tees must be uncapped and must extend at least 12 inches below the liquid level.

7.1.10 The outlet elevation shall be between two (2) and six (6) inches lower than the inlet elevation to ensure proper fall without a significant loss of volume.

7.1.11 Fall between the outlet of the septic tank and the dispersal field shall be continuous with a minimum fall that that ensures the outlet pipe is four (4) inches higher than the top of the first siphon in a serial system or four (4) inches above the top of the distribution box or other components used in the dispersal system on a uniform or level distribution system.

7.1.12 Septic tanks shall have access to the tank by at least two access openings or manholes. For inlet compartments over 12 feet in length, an additional manhole is required over the baffle wall. All new septic tanks with access openings with greater than six (6) inches of cover must have watertight risers to within six (6) inches of finished grade. Risers and lids that are at or above grade must be lockable or require tools to be opened.

7.1.13 Septic tank risers must have a current IAPMO certification or must be reviewed and approved by DEHQ prior to use. Septic tank risers must be installed in accordance with the manufacturer's instructions or where no instructions are provided as approved by DEHQ. Concrete risers and lids must be constructed of Type V concrete or be protected from corrosion from sewer gases. The interior diameter of the riser shall be a minimum of 18 inches.

7.1.14 New and replacement OWTS septic tanks shall be designed to prevent solids in excess of three-sixteenths (3/16) of an inch in diameter from passing to the dispersal system. Any one of the following actions shall be deemed in compliance with this requirement.

7.1.14.1 The continual use and maintenance of a National Sanitation Foundation/American National Standard Institute (NSF/ANSI) Standard 46 certified septic tank filter at the final point of effluent discharge from the OWTS and prior to the dispersal system.

7.1.14.2 The installation and maintenance of a septic tank with an additional 500 gallons of capacity than that required pursuant to Tables 7.2-1 and 7.2-2 to increase retention and solids settling time.

7.1.14.3 The regular pumping of the septic tank. The records of septic tank pumping shall be retained by the property owner and provided to DEHQ when requested to demonstrate compliance with this section. Regular pumping of the septic tank means at least every three years or when any one of the following conditions exist:

7.1.14.3.1 The combined thickness of sludge and scum layers exceeds one-third of the tank depth of the first compartment.

7.1.14.3.2 The scum layer is within three (3) inches of the outlet tee or device.

7.1.14.3.3 The sludge layer is within eight (8) inches of the outlet tee or device.

7.1.15 Septic tanks installed within five (5) feet of or within areas of vehicular traffic, including driveways and parking lots, must be certified to withstand the proposed loads by installation of a traffic-rated septic tank or by an engineered traffic slab installed to accommodate the proposed loads.

7.1.16 Materials for drainage piping shall comply with the requirements of the County Plumbing Code. Approved piping is shown in Table 7.1-1 and must be in accordance with the referenced standards.

Table 7.1-1: Approved Pipe Material

Pipe Material	Standard Reference: Pipe	Standard Reference: Fittings
ABS (Schedule 40)	ASTM D2661 ASTM D2680*	ASME A112.4.4 ASTM D2661 ASTM D2680*
PVC (Schedule 40)	ASTM D1785 ASTM D2665 ASTM F794*	ASME A112.4.4 ASTM D2665 ASTM F794* ASTM F1866

NOTES: Approved for underground and aboveground drain, waste, vent pipe, and fittings
*For building Sewer applications
Source: 2019 California Plumbing Code Table 701.2

7.2 Minimum Septic Tank Sizing

7.2.1 Minimum septic tank size is 1000 gallons.

7.2.2 Septic tanks shall be sized according to anticipated wastewater flows from the structure(s). The following standard sizes shall apply:

Table 7.2-1: Minimum Septic Tank Volume Requirements-Primary Dwelling	
1-3 Bedroom single family dwelling (0-450 GPD[1])	1000 Gallons
4 Bedroom single family dwelling (451-600 GPD)	1200 Gallons
5-6 Bedroom single family dwelling (601-900 GPD)	1500 Gallons
Duplex – 2-4 Bedrooms	2000 Gallons
Triplex – 5-6 Bedrooms	2000 Gallons
For commercial applications and commercial residential units with combined total bedrooms greater than six (minimum 2000-gallon tank).	1125 Gallons + (.75) (Peak Flow in GPD)

1-GPD means gallons per day

7.2.3 Second Dwelling Unit Tank Sizing: Since each dwelling unit can have a kitchen, dishwasher, garbage disposer, and laundry facilities, the septic tank sizing shall be calculated as separate flows, even if a common tank is used, as noted in the Table 7.2-2.

Table 7.2-2: Minimum Septic Tank Volume Requirements-Multiple Dwellings		
Primary Dwelling	**Second Dwelling**	**Minimum Tank Size**
1 Bedroom	1 Bedroom	1000 Gallons
2 Bedrooms	1 Bedroom	1200 Gallons
2 Bedrooms	2 Bedrooms	1500 Gallons
3 Bedrooms	1 Bedrooms	1500 Gallons
3 Bedrooms	2 Bedrooms	1500 Gallons
4 Bedrooms	1 Bedrooms	1500 Gallons
4 Bedrooms	2 Bedrooms	2000 Gallons

Dwellings with more than a combined total of six bedrooms or larger shall be calculated using the formula for commercial applications in Table 7.2-1 and separate tanks shall be used for each dwelling even if connected to a common disposal field.

7.3 Oil/Grease Interceptor Requirements

7.3.1 OWTS receiving Fats, Oil, or Grease (FOG) concentrations greater than 100 mg/L prior to the septic tank or other OWTS treatment component are not covered within the scope of coverage of this LAMP and local authority. Proposals for these OWTS must be submitted to the appropriate Regional Board for approval. Waste streams from a commercial food service building with a maximum BOD 900 mg/L and a properly sized and functioning oil/grease interceptor may be permitted under the LAMP and local authority.

7.3.2 Commercial food service buildings with a maximum BOD concentration of 900 mg/L utilizing OWTS must have a properly sized and functioning oil/grease interceptor (grease trap) located outside the building. Those commercial food service buildings that do not have a properly sized and functioning oil/grease interceptor are not covered under the conditional waiver contained in the OWTS Policy. Properly sized oil/grease interceptor means an interceptor designed and sized in accordance with the applicable provisions of the California Plumbing Code and in compliance with any local permitting requirements.

7.3.2 All oil/grease interceptors installed with an OWTS shall be maintained in good working order and shall be pumped at a frequency that prevents fats and grease from surfacing or entering into the OWTS and dispersal field.

7.4 Sewage Effluent Pump Systems

Gravity flow of effluent from the septic tank to the dispersal field is required when feasible. However, when gravity flow is not an option, the use of a sewage effluent pump system is allowed. The following requirements apply to all OWTS where a sewage effluent pump is proposed to move effluent from the septic tank to the dispersal field.

7.4.1 Only clarified septic tank effluent shall be allowed to be pumped to the dispersal field of the OWTS. The use and maintenance of a National Sanitation Foundation/American National Standard Institute (NSF/ANSI) Standard 46 certified septic tank filter at the final point of effluent discharge from the OWTS or other approved filter satisfies this condition.

7.4.2 The effluent pump system shall be designed by a qualified professional. The qualified professional shall provide an operating manual to the property owner. Instructions should be provided to allow periodic testing of the alarm system along with contact information for maintenance or repairs.

7.4.3 The general design shall include the following information:

7.4.3.1 Percolation or capacity data for the dispersal system.

7.4.3.2 A detailed layout drawn to scale which includes elevations.

7.4.4 Pump tank design to include the following:

7.4.4.1 A cross-section complete with elevations of control switches, measured in inches, from the bottom of the chamber.

7.4.4.2 Emergency storage volume to allow for a 24-hour holding capacity after the alarm sounds. This is the volume between the invert bottom of the inlet “tee” and the high-water alarm float in the on position.

7.4.4.3 The pump “off switch” is to be set per the manufacturer’s specifications. It is recommended that the pump remain submerged to allow for cooling and to prevent contact with sewer gases.

7.4.4.4 Float control switches are to be set to allow for a pump cycle of three to four times per day.

7.4.4.5 Maintenance ports (manholes) with a minimum diameter of 22 inches are to be provided and shall extend at least two inches above finished grade. The maintenance ports shall be maintained secured and watertight at all times. The final grade is to allow for drainage away from the maintenance ports.

7.4.4.6 Pump and surge tanks shall meet the same requirements as a septic tank. Tanks that extend above grade shall be approved by the manufacturer for above ground use.

7.4.5 All effluent pump system data and alarm system data, including make, model, and description of effluent pump, control panel, alarms, switches, and switch box are to include the following:

7.4.5.1 Pump type shall be for sewage effluent and data is to include the pump curve, U.L. approval and other test certifications.

7.4.5.2 Mechanical and electrical equipment shall be of such durable hardware, workmanship and installation as to insure against operational failure with normal maintenance. All mechanical and electrical components, installations and operations shall comply with all applicable Electrical and Mechanical Codes and any local permitting requirements.

Any potential air space connections through conduit between the pump tank and the electrical/control panel shall be sealed to prevent sewer gases from corroding exposed electrical connections.

7.4.5.3 The alarm system is to contain an audible and visual alarm that will remain on until turned off by the owner or maintenance person. The alarm shall be installed on a separate circuit from the pump.

7.4.5.4 The pump system for commercial installations shall have at a minimum two alternating pumps.

7.4.5.5 A single family dwelling may use two alternating pumps or a single pump. When using a single pump, the following criteria shall be met:

7.4.5.5.1 The single pump is to be a pre-engineered, commercially available pump suitable for continuous duty.

7.4.5.5.2 The pump must be capable of handling total flow, with minimum flow of 15 gallons per minute as measured at the discharge point of the forced main.

7.4.6 The design of the force main and venting system is to include the following:

7.4.6.1 Provide head-loss calculation addressing all fittings and elevations from pump to surge chamber.

7.4.6.2 The force main shall be two (2) inches to three (3) inches in diameter, rated for the head-loss calculated pressure, velocity, and be of approved material.

7.4.6.3 The connection between the force main and pumps shall allow for ease of pump removal and maintenance.

7.4.6.4 A check valve is required unless the qualified professional determines that the amount of backflow will be insignificant to the system design. The qualified professional should account for the volume of the effluent within the force main, when sizing the pump chamber and pump cycle.

7.4.6.5 The pump tank and surge tank shall be cross vented to each other to avoid venting to the atmosphere.

7.4.7 The design of the surge tank that allows for the simulation of gravity flow to the dispersal field shall include the following:

7.4.7.1 The surge tank shall have a capacity equal to or greater than the volume of effluent being pumped during one batch cycle to prevent overflow with a minimum volume of 200 gallons.

7.4.7.2 The inlet pipe shall have an air gap separation between the inlet and highest effluent level (outlet) that is equal to or greater than two times the inlet pipe diameter, to prevent a siphon effect.

7.4.7.3 The vertical outlet pipe within the surge tank shall be constructed of approved four (4) inch pipe with one-half (1/2) inch holes drilled every four (4) inches along the pipe length and extends beyond the typical fill level of the surge tank based on the batch cycle volume.

7.4.8 Pumps, venting, and electrical components shall be installed by licensed installers in accordance with all applicable plumbing, electrical, and mechanical codes and as per installation specifications/ instructions.

7.4.9 All required building permits shall be obtained prior to the initiation of work.

7.4.10 An OWTS Installation Permit is required for the installation of a sewage effluent pump system. The pump system shall be inspected and hydraulically tested for proper operation by the system installer in the presence of DEHQ staff.

7.4.11 Sewage Ejector Pumps. Sewage ejector pumps designed to serve ancillary rooms and structures where the drainage system for the existing structure cannot accommodate gravity flows shall meet all building, electrical, and plumbing code requirements. A permit from DEHQ is required to expand the septic tank and dispersal field to accommodate any additional wastewater flows, if required.

CHAPTER 8.0 SUBSURFACE DISPERSAL SYSTEM REQUIREMENTS

8.1 General

Many different designs and configurations are used for the subsurface dispersal of wastewater effluent but all incorporate soil infiltrative surfaces that are located in buried excavations. The primary infiltrative surface is the bottom of the excavation, but the sidewalls also may be used for infiltration. Perforated pipe is installed to distribute the wastewater over the infiltrative surface. A porous medium, typically gravel or crushed rock, is placed in the excavation below and around the distribution pipe to support the pipe and spread the localized flow from the distribution pipes across the excavation cavity. Other gravel-less or chamber-type system components may be substituted for the rock and pipe. The porous medium maintains the structure of the excavation, exposes the applied wastewater to more infiltrative surface, and provides storage space for the wastewater within its void fractions (interstitial space, typically 30-40% or the volume) during peak flows with gravity systems. Untreated building paper or geotextile fabric is placed over the porous medium before backfilling with native soil to prevent the introduction of backfill material into the porous medium.

Most standard OWTS disperse wastewater either through a uniform distribution or serial distribution system. Uniform distribution is mostly used in flat, level areas and distributes wastewater flow equally among all trenches using a distribution box. Uniform distribution aids in maintaining unsaturated flow below the infiltrative surface, which results in wastewater retention times in the soil that are sufficiently long to effect treatment and promote subsoil reaeration. Uniform distribution design also results in more complete utilization of the infiltrative surface. A serial distribution system is commonly used on a sloping site. Rather than dividing the flow equally among all trenches, serial distribution provides for the first trench in the dispersal field to receive all the effluent from septic tank. When this first trench fills, the effluent overflows through the crossover pipe into the next trench. In this manner, each trench in the system is used successively to its full capacity. This method of distribution makes full hydraulic use of all bottom and sidewall infiltration surfaces, creates the maximum hydrostatic head over the infiltration surfaces to force the water into the surrounding soil, and eliminates the problem of dividing flows evenly among independent trenches. However, because continuous ponding of the infiltrative surfaces is necessary for the system to function, the trenches suffer hydraulic failure more rapidly and progressively because the infiltrative surfaces cannot regenerate their infiltrative capacity. Thus, only the portion of the system required to absorb the wastewater is used. During periods of high flow or low absorptive capacity of the soil, more trenches will be used. When flows are low or during the hot dry summer months, the lower trenches may not be needed, so they may drain and dry out, automatically resting more trenches, which rejuvenates their infiltrative surfaces.

8.1.1 No new or replacement dispersal systems shall be covered by an impermeable surface, such as paving, building foundation slabs, plastic sheeting, or other material that may damage integrity of OWTS and/or prevents oxygen transfer to the soil limiting treatment.

8.1.2 The primary and designated reserve dispersal areas shall be installed within areas of undisturbed soil that is not used or proposed for use for other purposes, unless that use is consistent with the intent of these standards, such as use of appropriate vegetation, such as grass, in a dispersal area. Drip dispersal

proposed for areas used for an existing dispersal is prohibited.

8.1.3 A dispersal field design shall meet the minimum distance requirements to its dispersal field components or to other dispersal field components and shall not be placed or proposed for placement over an existing or previously used dispersal area. Deep bed dispersal systems may be approved in an area where a previous shallow dispersal system was used if all dispersal system material is removed to native soils.

8.1.4 Areas that are within the minimum setback distances established to protect public health and/or water quality shall not be used for waste disposal or percolation testing. The following areas are considered unsuitable for the location of the dispersal system or designated reserve area:

8.1.4.1 Areas within any easement which is dedicated for surface or subsurface improvement.

8.1.4.2 Paved areas or areas proposed for paving or areas occupied by or proposed to be occupied by structures or other surface features. Rock-filled deep bed or vertical seepage pit dispersal systems may be allowed to be installed under paved areas if no other feasible areas are present and where site conditions warrant.

8.1.4.3 Areas not owned or under the control of the property owner unless the area is dedicated as a recorded easement for waste disposal purposes.

8.1.4.4 Low-lying areas subject to flooding or with a potential for flooding, unless installed in a location or manner to avoid impairment to the OWTS or contamination from the OWTS during flooding.

8.1.5 Metal tape or other approved material may be installed within the dispersal field for the purpose of providing a means for locating the dispersal field components at a later date using a metal detector. This item shall be proposed as part of the permit and approved by DEHQ prior to installation.

8.1.6 Materials for drainage piping shall comply with the requirements of the County Plumbing Code. Approved piping is shown in Table 7.1-1 and must be in accordance with the referenced standards. Piping for drip dispersal shall be of approved material.

8.1.7 Dispersal systems for OWTS located within the Borrego Springs area where the Regional Board has identified OWTS discharges to have the potential to negatively impact groundwater shall be of shallow leach line trench or shallow bed construction.

8.1.8 French drains, dewatering wells, or other systems or actions installed or used for the purposes of lowering groundwater elevations to meet separation requirements for a dispersal field are not permitted.

8.2 Minimum Residential Wastewater Infiltrative Areas

8.2.1 Residential leach line systems shall be sized based on the leach line requirement provided in Table 8.2-1. Table 8.2-1 is based on *Table 3: Application Rates as Determined from Stabilized Percolation Rate* provided in the OWTS Policy. The total square feet of infiltrative surface area are calculated from the application rate corresponding to the design percolation rate and a wastewater flow of 150 gallons per bedroom per day. Linear leach line lengths are determined using a two-square feet of infiltrative surface area for each linear foot of leach line length. The minimum total leach line requirement shall be 200 feet, regardless of the projected wastewater flows.

Table 8.2-1: Minimum Residential Leach Line Length Based on Percolation Test Rate
(Based on Application Rates in Table 8.3-1 using 150 gallons/bedroom and 2.0 square feet per linear foot of infiltrative surface area)

Perc Rate	Number of Bedrooms						Perc Rate	Number of Bedrooms					
MPI	1	2	3	4	5	6	MPI	1	2	3	4	5	6
1-5	200	200	200	250	313	375	51	250	500	750	1000	1250	1500
6-10	200	200	281	375	469	563	52	260	519	779	1038	1298	1557
11	200	200	286	382	477	573	53	270	540	809	1079	1349	1619
12	200	200	292	389	486	584	54	281	562	843	1124	1404	1685
13	200	200	297	396	495	594	55	293	586	879	1172	1465	1758
14	200	202	303	404	505	606	56	306	612	918	1224	1531	1837
15	200	206	309	412	514	617	57	321	641	962	1282	1603	1923
16	200	210	315	420	525	630	58	336	673	1009	1345	1682	2018
17	200	214	321	429	536	643	59	354	708	1061	1415	1769	2123
18	200	219	328	437	547	656	60	375	750	1125	1500	1875	2250
19	200	224	335	447	559	671	61	381	761	1142	1523	1904	2284
20	200	228	342	457	571	685	62	387	773	1160	1546	1933	2320
21	200	233	350	467	583	700	63	395	789	1184	1579	1974	2368
22	200	238	358	477	596	715	64	401	802	1203	1604	2005	2406
23	200	244	366	489	611	733	65	408	815	1223	1630	2038	2446
24	200	250	375	500	625	750	66	417	833	1250	1667	2083	2500
25	200	255	382	509	637	764	67	424	847	1271	1695	2119	2542
26	200	260	389	519	649	779	68	431	862	1293	1724	2155	2586
27	200	265	397	529	661	794	69	441	882	1324	1765	2206	2647
28	200	270	405	540	674	809	70	449	898	1347	1796	2246	2695
29	200	275	413	550	688	826	71	457	915	1372	1829	2287	2744
30	200	281	422	563	704	844	72	469	938	1406	1875	2344	2813
31	200	287	431	575	718	862	73	478	955	1433	1911	2389	2866
32	200	294	440	587	734	881	74	487	974	1461	1948	2435	2922
33	200	300	450	600	750	900	75	500	1000	1500	2000	2500	3000
34	200	307	460	613	767	920	76	510	1020	1531	2041	2551	3061
35	200	314	471	628	785	941	77	521	1042	1563	2083	2604	3125
36	200	321	482	642	803	964	78	536	1071	1607	2143	2679	3214
37	200	329	493	658	822	987	79	547	1095	1642	2190	2737	3285
38	200	337	506	674	843	1011	80	564	1128	1692	2256	2820	3383
39	200	346	518	691	864	1037	81	577	1154	1731	2308	2885	3462
40	200	355	533	711	889	1066	82	591	1181	1772	2362	2953	3543
41	200	365	547	730	912	1095	83	610	1220	1829	2439	3049	3659
42	200	375	563	750	938	1125	84	625	1250	1875	2500	3125	3750
43	200	386	578	771	964	1157	85	641	1282	1923	2564	3205	3846
44	200	397	595	794	992	1190	86	664	1327	1991	2655	3319	3982

45	204	409	613	817	1022	1226		**87**	682	1364	2045	2727	3409	4091
46	211	421	632	843	1053	1264		**88**	701	1402	2103	2804	3505	4206
47	217	435	652	870	1087	1304		**89**	728	1456	2184	2913	3641	4369
48	225	449	674	898	1123	1347		**90**	750	1500	2250	3000	3750	4500
49	232	464	697	929	1161	1393		**91-120**	750	1500	2250	3000	3750	4500
50	241	482	723	965	1206	1447								

Note: Minimum leach line length is 200 linear feet, regardless of flow.

8.2.2 Second Dwelling Units. Dispersal fields for second dwelling units can be designed as a separate system serving only the second dwelling unit or can be a common system serving both the existing dwelling and the second dwelling unit. Dispersal fields shall be sized based on independent dwelling units, even if a common dispersal field is proposed. The dispersal system size shall be equal to the sum of the two individual system sizes. It is recommended that second dwelling units that may be subject to a subdivision of land in the future be served by its own OWTS.

EXAMPLE - For a 3-bedroom main dwelling and a 2-bedroom second dwelling unit and assuming a 16 MPI percolation rate:

Separate Systems:
3-bedroom main dwelling requires 315 feet of leach line and 100% reserve area
2-bedroom second dwelling requires 210 feet of leach line and 100% reserve area

Common System:
3-bedroom main dwelling plus 2-bedroom second dwelling requires 525 feet of leach line and 100% reserve area.

8.3 Minimum Commercial Wastewater Infiltrative Areas

8.3.1 Non-residential infiltrative surface area shall be calculated by a qualified professional using peak daily wastewater flows and the maximum application rates as determined from stabilized percolation rate provided in Table 8.3-1. The minimum total infiltrative surface area shall be equal to 200 feet of leach line (or 400 square feet of infiltrative surface), regardless of flow.

TABLE 8.3-1: APPLICATION RATES AS DETERMINED FROM STABILIZED PERCOLATION RATES

Percolation Rate (min/inch)	Application Rate (gal/day/ft^2)		Percolation Rate (min/inch)	Application Rate (gal/day/ft^2)		Percolation Rate (min/inch)	Application Rate (gal/day/ft^2)
1	1.2		31	0.522		61	0.197
2	1.2		32	0.511		62	0.194
3	1.2		33	0.5		63	0.19
4	1.2		34	0.489		64	0.187
5	1.2		35	0.478		65	0.184
6	0.8		36	0.467		66	0.18
7	0.8		37	0.456		67	0.177

8	0.8		38	0.445		68	0.174
9	0.8		39	0.434		69	0.17
10	0.8		40	0.422		70	0.167
11	0.786		41	0.411		71	0.164
12	0.771		42	0.4		72	0.16
13	0.757		43	0.389		73	0.157
14	0.743		44	0.378		74	0.154
15	0.729		45	0.367		75	0.15
16	0.714		46	0.356		76	0.147
17	0.7		47	0.345		77	0.144
18	0.686		48	0.334		78	0.14
19	0.671		49	0.323		79	0.137
20	0.657		50	0.311		80	0.133
21	0.643		51	0.3		81	0.13
22	0.629		52	0.289		82	0.127
23	0.614		53	0.278		83	0.123
24	0.6		54	0.267		84	0.12
25	0.589		55	0.256		85	0.117
26	0.578		56	0.245		86	0.113
27	0.567		57	0.234		87	0.11
28	0.556		58	0.223		88	0.107
29	0.545		59	0.212		89	0.103
30	0.533		60	0.2		90-120	0.1

Note: Minimum leach line length is 200 linear feet and minimum drip, shallow or deep bed infiltrative surface area is 400 square feet, regardless of flow.

Example – The project is an industrial office with no cafeteria with 50 employees that work one daily shift with no daily visitors.

According to Table 6.5-1, the minimum daily wastewater flow is derived from 15 gallons per person per day. The resultant daily flow is 750 gallons per day. This is also the peak daily flow as this business does not have other sources of domestic wastewater.

The percolation rate for the site was determined to be 20 minutes per inch. According to Table 8.3-1, the application rate is 0.657 gallons per day per square foot. 750 gallons per day peak daily flow divided by 0.657 gallons per day per square foot application rate = 1,142 square feet of infiltrative area required.

A leach line is based on an infiltrative surface of two-square feet of infiltrative area per linear foot of trench. The leach line length is determined by dividing 1,142 square feet by two = 571 linear feet of leach line.

8.4 Minimum Leach Line Dispersal System Requirements

8.4.1 General Requirements.

8.4.1.1 Leach lines systems are the primary means of effluent dispersal for the majority of OWTS within San Diego County for sites with a percolation test rate of up to 120 minutes per inch.

8.4.1.2 A leach line consists of a trench, rock or other approved filter material, such as rock-less chambers, a perforated pipe, filter protecting fabric or paper, and soil cover.

8.4.1.3 Leaching chambers or binded expanded polystyrene synthetic aggregate units may be used instead of the rock construction. All installations must comply with IMAPO PS 63 and IGC 276, respectively, and must be installed in accordance with the manufacturer's specifications. No reduction in sizing is permitted with the use of these rock alternative construction components. To stabilize the installation before inspection, the soil or required fill material shall be added between and around the leaching chambers or binded expanded polystyrene synthetic aggregate units, leaving the uppermost surface of the units exposed to allow for system inspection.

8.4.2 Leach Line Dimensions and Specifications. Leach lines in the dispersal field shall meet the following:

Table 8.4-1: Leach Line Dispersal System Dimensions and Specifications	
Minimum/Maximum length of individual leach line[1]	Based on Design
Minimum width of trench	18"
Maximum width of trench[2]	36"
Grade of clean, washed rock	1.0" to 1.5"
Minimum depth of rock below perforated pipe	12"
Maximum depth of rock below perforated pipe	36"
Minimum depth of rock over perforated pipe	2"
Minimum total rock in trench (12" under, 4" around, and 2" above pipe)	18"
Minimum soil cover over rock[3]	12"
Maximum soil cover over rock[3]	24"
Minimum depth of trench (18" rock + 12" soil cover)	30"
Maximum depth of trench (42" rock + 18" soil cover)	60" or 5.0'
Minimum grade of trench bottom (end to end)	level
Maximum grade of trench bottom (end to end)	2" per 100'
Distance between leach lines[4]	10' center to center
Maximum slope	30%
Maximum slope with Slope Stability Study	40%

1- A minimum of one observation port every hundred feet is required. 2- No reduction in leach line requirement is given for greater trench widths. 3- Soil cover requirements must also conform to the requirements of the manufacturer of any gravel-less/chamber design. Maximum soil cover for 5' trench is 18". 4- The distance between leach lines can be reduced to 6' from

sidewall to sidewall for sites where the design percolation rate is 30 MPI or less, the effluent is distributed by equal distribution (distribution box), and the slope is 10% or less.

8.4.3 Leach Line Dispersal System Sizing. The minimum infiltrative surface area for leach lines shall be determined pursuant to Section 8.2 for OWTS serving residential uses and Section 8.3 for OWTS serving commercial uses.

8.4.4 Materials and Construction

8.4.4.1 All piping and materials used in leach line systems shall be of approved material.

8.4.4.2 Leach lines that utilize gravel shall be filled with clean, washed rock graded at 1.0 to 1.5 inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill to prevent the infiltration of soil into the rock.

8.4.4.3 Where leach lines are installed in an equal distribution design, an approved watertight distribution box with riser for accessibility, of sufficient size to accommodate the expected wastewater volume and necessary field lateral lines, shall be constructed at the head of each dispersal field with watertight inlet and outlets.

8.4.4.3.1 Each field lateral shall be connected separately to a distribution box, shall not be subdivided, and shall provide equal distribution.

8.4.4.3.2 Equal distribution is not required for repairs when infeasible to install or where site conditions warrant a different distribution design, such as serial distribution (sloping sites or when trench length variability is necessary), or pressure dosed systems.

8.4.4.3.3 Where multiple leach lines are proposed on sloping ground, or where variable trench lengths are necessary, a serial system, with dams and crossover/overflow pipes may be used to connect the leach lines.

8.4.4.3.4 No leach line shall be placed under concrete, blacktop, roadway, or structure. If necessary to cross under such construction, watertight lines of ABS Schedule 40 or other approved materials shall be used. Leach lines must be maintained in an open area and may not be compacted or driven over. Barricades may be required to maintain this area when requested by DEHQ.

8.4.5 Leach Lines on Steep Slopes

8.4.5.1 Leach line dispersal systems are limited to slopes of 30 percent or less unless the site evaluation and slope stability screening, or a Slope Stability Study, if required, indicate the area is suitable for leach line dispersal system. The maximum slope allowed for leach line trenches is 40 percent.

8.4.5.2 Trenches shall follow the surface contours to minimize variations in trench depth and shall only be installed perpendicular to the slope.

8.4.5.3 The following requirements must be met for the installation of leach line trenches on slopes exceeding 30 percent. The design parameters are applicable only to slopes exceeding 30 percent and are not intended to be used in any other situation.

8.4.5.3.1 All leach lines on steep slopes shall be installed in five (5) foot deep trenches with 12 inches of leach rock below the leach pipe or with approved chambers or other gravel-less system. To accommodate the trench depth, the maximum soil cover shall be 18 inches.

8.4.5.3.2 The installation of disposal systems on steep slopes requires an experienced and expert qualified profession to address conditions relative to soil, slope stability, and subsurface conditions which require competent professional judgment and technical knowledge. Designs for steep slope systems will only be approved when submitted by a qualified professional registered in the State of California.

8.4.5.3.3 Any grading proposed to create a stable work area for leach line installation may require a grading permit. It is the responsibility of the applicant to ensure all required permits have been obtained prior to initiating any work.

8.5 Minimum Deep Bed Dispersal System Requirements

8.5.1 General Requirements. Deep bed dispersal systems may be used for new and replacement OWTS throughout San Diego County if specific soil and site conditions exist. Deep beds are approved for use only in soils with percolation rates of 30 minutes per inch or faster.

8.5.1.1 The minimum depth to groundwater from the bottom of the deep bed dispersal shall meet the requirements of Table 6.3-1 or 10 feet, whichever is greater.

8.5.2 Deep Bed Dispersal Dimensions and Specifications. Deep bed dispersal systems shall meet the requirements as shown in Table 8.5-1.

Table 8.5-1: Deep Bed Dispersal System Dimensions and Specifications	
Minimum/Maximum length of individual deep beds[1]	Based on Design
Minimum width of deep bed	4’
Maximum width of deep bed	6’
Range of grade of clean, washed rock	1.0” to 3.0”
Minimum depth of rock over perforated pipe manifold	2”
Minimum total rock in deep bed	6’
Maximum total rock in deep bed	7’
Minimum soil cover over rock[1] (Soil Cap)	2’
Maximum soil cover over rock[1] (Soil Cap)	5’

Minimum total depth of deep bed (6’ rock + 2’ soil cover)	8’
Maximum total depth of deep bed (7’ rock + 5’ soil cover)	12’
Minimum grade of deep bed	level
Maximum grade of deep bed	2” per 100’
Distance between deep beds	10’ edge to edge
Maximum slope	30%

1-A minimum of one observation port every hundred feet is required.

8.5.3 Deep Bed Dispersal System Sizing

8.5.3.1 Residential Dispersal System Sizing. The sizing of residential dispersal fields utilizing deep bed dispersal systems shall have the equivalent infiltrative surface area as required for residential leach lines. Table 8.5-2 provides the minimum required deep bed dispersal system infiltrative surface areas that are equivalent to the leach line requirements based on number of bedrooms and percolation rate (derived from Table 8.2-1). The minimum total infiltrative surface area is 400 square feet of infiltrative surface, regardless of flow.

Table 8.5-2: Minimum Residential Deep Bed Dispersal Infiltrative Square Foot Surface Area Requirement Based on Percolation Rate

Perc Rate MPI	1 Bedroom	2 Bedrooms	3 Bedrooms	4 Bedrooms	5 Bedrooms	6 Bedrooms
1-5	400	400	400	500	625	750
6-10	400	400	563	750	938	1125
11	400	400	573	763	954	1145
12	400	400	584	778	973	1167
13	400	400	594	793	991	1189
14	400	404	606	808	1009	1211
15	400	412	617	823	1029	1235
16	400	420	630	840	1050	1261
17	400	429	643	857	1071	1286
18	400	437	656	875	1093	1312
19	400	447	671	894	1118	1341
20	400	457	685	913	1142	1370
21	400	467	700	933	1166	1400
22	400	477	715	954	1192	1431
23	400	489	733	977	1221	1466
24	400	500	750	1000	1250	1500
25	400	509	764	1019	1273	1528
26	400	519	779	1038	1298	1557
27	400	529	794	1058	1323	1587
28	400	540	809	1079	1349	1619
29	400	550	826	1101	1376	1651

30	400	563	844	1126	1407	1689

Deep bed dimensions to achieve the square footage requirements of Table 8.5-2 are provided in Table 8.5-3.

Table 8.5-3: Minimum Residential Deep Bed Dispersal System Dimensions and Infiltrative Surface Areas

Length Linear Feet	4' Wide		5' Wide		6' Wide	
	6' Rock Depth	7' Rock Depth	6' Rock Depth	7' Rock Depth	6' Rock Depth	7' Rock Depth
	Infiltrative Surface Area - Square Feet					
1	16	18	17	19	18	20
2	32	36	34	38	36	40
3	48	54	51	57	54	60
4	64	72	68	76	72	80
5	80	90	85	95	90	100
6	96	108	102	114	108	120
7	112	126	119	133	126	140
8	128	144	136	152	144	160
9	144	162	153	171	162	180
10	160	180	170	190	180	200
11	176	198	187	209	198	220
12	192	216	204	228	216	240
13	208	234	221	247	234	260
14	224	252	238	266	252	280
15	240	270	255	285	270	300
16	256	288	272	304	288	320
17	272	306	289	323	306	340
18	288	324	306	342	324	360
19	304	342	323	361	342	380
20	320	360	340	380	360	400
21	336	378	357	399	378	420
22	352	396	374	418	396	440
23	368	414	391	437	414	460
24	384	432	408	456	432	480
25	400	450	425	475	450	500
26	416	468	442	494	468	520
27	432	486	459	513	486	540
28	448	504	476	532	504	560
29	464	522	493	551	522	580
30	480	540	510	570	540	600
31	496	558	527	589	558	620
32	512	576	544	608	576	640

Table 8.5-3: Minimum Residential Deep Bed Dispersal System Dimensions and Infiltrative Surface Areas						
Length Linear Feet	4' Wide		5' Wide		6' Wide	
	6' Rock Depth	7' Rock Depth	6' Rock Depth	7' Rock Depth	6' Rock Depth	7' Rock Depth
	Infiltrative Surface Area - Square Feet					
33	528	594	561	627	594	660
34	544	612	578	646	612	680
35	560	630	595	665	630	700
36	576	648	612	684	648	720
37	592	666	629	703	666	740
38	608	684	646	722	684	760
39	624	702	663	741	702	780
40	640	720	680	760	720	800
41	656	738	697	779	738	820
42	672	756	714	798	756	840
43	688	774	731	817	774	860
44	704	792	748	836	792	880
45	720	810	765	855	810	900
46	736	828	782	874	828	920
47	752	846	799	893	846	940
48	768	864	816	912	864	960
49	784	882	833	931	882	980
50	800	900	850	950	900	1000
51	816	918	867	969	918	1020
52	832	936	884	988	936	1040
53	848	954	901	1007	954	1060
54	864	972	918	1026	972	1080
55	880	990	935	1045	990	1100
56	896	1008	952	1064	1008	1120
57	912	1026	969	1083	1026	1140
58	928	1044	986	1102	1044	1160
59	944	1062	1003	1121	1062	1180
60	960	1080	1020	1140	1080	1200
61	976	1098	1037	1159	1098	1220
62	992	1116	1054	1178	1116	1240
63	1008	1134	1071	1197	1134	1260
64	1024	1152	1088	1216	1152	1280
65	1040	1170	1105	1235	1170	1300
66	1056	1188	1122	1254	1188	1320
67	1072	1206	1139	1273	1206	1340
68	1088	1224	1156	1292	1224	1360

Table 8.5-3: Minimum Residential Deep Bed Dispersal System Dimensions and Infiltrative Surface Areas						
Length Linear Feet	4' Wide		5' Wide		6' Wide	
	6' Rock Depth	7' Rock Depth	6' Rock Depth	7' Rock Depth	6' Rock Depth	7' Rock Depth
	Infiltrative Surface Area - Square Feet					
69	1104	1242	1173	1311	1242	1380
70	1120	1260	1190	1330	1260	1400
71	1136	1278	1207	1349	1278	1420
72	1152	1296	1224	1368	1296	1440
73	1168	1314	1241	1387	1314	1460
74	1184	1332	1258	1406	1332	1480
75	1200	1350	1275	1425	1350	1500
76	1216	1368	1292	1444	1368	1520
77	1232	1386	1309	1463	1386	1540
78	1248	1404	1326	1482	1404	1560
79	1264	1422	1343	1501	1422	1580
80	1280	1440	1360	1520	1440	1600
81	1296	1458	1377	1539	1458	1620
82	1312	1476	1394	1558	1476	1640
83	1328	1494	1411	1577	1494	1660
84	1344	1512	1428	1596	1512	1680
85	1360	1530	1445	1615	1530	1700
86	1376	1548	1462	1634	1548	1720
87	1392	1566	1479	1653	1566	1740
88	1408	1584	1496	1672	1584	1760
89	1424	1602	1513	1691	1602	1780
90	1440	1620	1530	1710	1620	1800
91	1456	1638	1547	1729	1638	1820
92	1472	1656	1564	1748	1656	1840
93	1488	1674	1581	1767	1674	1860
94	1504	1692	1598	1786	1692	1880
95	1520	1710	1615	1805	1710	1900
96	1536	1728	1632	1824	1728	1920
97	1552	1746	1649	1843	1746	1940
98	1568	1764	1666	1862	1764	1960
99	1584	1782	1683	1881	1782	1980
100	1600	1800	1700	1900	1800	2000

Example – The project is a deep bed dispersal system for a 3-bedroom residence with a percolation rate of 20 minutes per inch.
According to Table 8.5-2, a 3-bedroom residence with a percolation test result of 20 minutes per inch requires 685 square feet of infiltrative area. Using Table 8.5-3, this infiltrative area is satisfied with either: a) 1-deep bed with dimensions of 43 feet long x 4 feet wide x 6 feet of rock; or b) 2-deep beds with dimensions of 21 feet long x 5 feet wide x 6 feet of rock; or c) 3-deep beds with dimensions of 13 feet long x 6 feet wide x 6 feet of rock.

8.5.3.2 Commercial Dispersal System Sizing. The sizing of commercial dispersal fields utilizing deep bed dispersal systems shall have the equivalent infiltrative surface area as calculated pursuant to Section 8.3.

8.5.3.3 Primary and reserve deep bed dispersal systems cannot be combined in one common pit.

8.5.3.4 Deep bed dispersal systems shall follow the surface contours to minimize variations in bed depth and shall only be installed perpendicular to the slope. The deep bed design configurations may arc or bend under the following conditions:

8.5.3.4.1 The maximum bend or arc cannot exceed a total of 45 degrees in any direction.

8.5.3.4.2 U-shaped and H-shaped configurations of trench are not allowed.

8.5.3.5 Deep Bed Dispersal on slopes over 30% are not permitted.

8.5.4 Materials and Construction

8.5.4.1 The use of concrete pit liners is allowed in sandy areas where the integrity of the sidewall cannot be maintained during construction. If used, the concrete pit liners shall meet the testing standards established by IAPMO or otherwise approved by DEHQ.

8.5.4.2 All deep beds must be filled with clean leach line rock to the cap depth. If pit liners are used, the interior of the liners must also be filled with rock. The rock should be graded at 1.0 to 3.0 inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill to prevent the infiltration of soil into the rock.

8.5.4.3 A manifold system constructed of a four (4) inch loop of Schedule 40 perforated pipe shall be installed in the deep bed to allow for distribution of the effluent throughout the entire trench. The manifold shall be placed one (1) foot from the sidewall of the deep bed and shall run the length and width of the deep bed in a rectangular pattern. A minimum of two (2) inches of rock shall be placed over the manifold piping.

8.5.4.4 Where more than one deep bed is installed, a watertight distribution box of sufficient size

to accommodate the necessary field lateral lines shall be constructed at the head of each dispersal field with watertight inlet and outlets.

8.5.4.4.1 Each field lateral shall be connected separately to a distribution box, shall not be subdivided, and shall provide equal distribution.

8.5.4.4.2 Equal distribution is not required for repairs when infeasible to install or where site conditions warrant a different distribution design, such as a serial distribution system (sloping sites or when trench length variability is necessary), or pressure dosed systems.

8.5.4.5 A hybrid system combining a deep bed dispersal for the primary or reserve design, and leach lines for the other system is allowed. However, a combination of the two types of systems, used for a single primary or reserve design, is not allowed. Where access to install a primary or designated reserve OWTS may be restricted or prevented because of current or proposed future construction or planned development, the primary or designated reserve OWTS shall be installed at a time during development when the access is available.

8.5.4.6 It is the responsibility of the applicant to ensure any work involving excavations or open borings meets all applicable state and local laws and regulations, including the requirements of the California Labor Code and associated regulations.

8.6 Minimum Vertical Seepage Pit Dispersal System Requirements

8.6.1 General Requirements. Vertical seepage pits are a type of dispersal system allowed in limited areas of San Diego County with specific requirements on their use. Vertical seepage pits are only allowed in areas where the Regional Board has excepted the water body from the Municipal and Domestic Supply Beneficial Use in the San Diego Basin Plan. Vertical seepage pits are not permitted in areas with interior granitic formations or fractured rock. An interactive map, the *San Diego Basin Plan Map*, provides information on beneficial uses and can be accessed at the RWQCB, San Diego Region's Basin Plan webpage and the following link: San Diego Basin Plan Map (ca.gov) (https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=1f58bd97fdcd45329a5e16e373ede24d)

8.6.2 Vertical Seepage Pit Dimensions and Specifications. Vertical seepage pits shall meet the dimensions and specifications as shown in Table 8.6-1.

Table 8.6-1: Vertical Seepage Pit Dispersal System Dimensions and Specifications	
Minimum diameter of seepage pit	4'
Maximum diameter of seepage pit	4'
Range of grade of clean, washed rock	1.0" to 3.0"
Minimum depth of rock below soil cover (soil cap)	10'
Maximum depth of rock below soil cover (soil cap)	Per Appendix II
Minimum soil cover over rock (Soil Cap)	2'

Maximum soil cover over rock[1] (Soil Cap)	5’
Minimum total depth of seepage pit	12’
Maximum total depth of seepage pit	Per Appendix II
Distance between pits	20’ edge to edge
Maximum slope	30%

1-Soil cover (cap depth) over 5’ may be permitted with documentation of justification.

8.6.3 Depth and Sizing of Vertical Seepage Pits

8.6.3.1 The total depth of the seepage pit shall be based on the location, type of soil, and groundwater level as determined by the site investigation, soil profile, and capacity testing procedures in Appendix II. The minimum absorptive capacity shall be five times the volume of the required septic tank or 5000 gallons, whichever is greater, as shown in Table 8.6-2. An individual seepage pit shall have a minimum capacity of 1,667 gallons per day.

Table 8.6-2: Vertical Seepage Pit Dispersal System Sizing

Number of Bedrooms	Gallons per Day	Septic Tank Size	Minimum Absorptive Capacity
1-3	0-450	1,000	5,000
4	451-600	1,200	6,000
5-6	601-900	1,500	7,500
>7 and Commercial Systems	>900	Minimum absorptive capacity = Five times the volume of the required minimum septic tank. Calculation: 1,125 gallons + (.75) (Flow in GPD) (5) See example below.	
*Minimum capacity per each seepage pit is 1,667 gallons			

Example – The project is a vertical seepage pit dispersal system for a commercial business (industrial building with no cafeteria - 150 employees at 15 gallons per day per employee) with 2,250 gallons per day peak flow.
The minimum absorptive capacity needed is determined as follows: 75% of 2,250 gallons per day is 1,688 gallons per day. 1,125 gallons + 1688 gallons per day = 2,813 gallons minimum septic tank volume required. 2,813 gallons x 5 = 14,065 gallons per day minimum absorptive capacity required.

8.6.3.2 Vertical seepage pits on slopes over 30% are not permitted.

8.6.4 Materials and Construction

8.6.4.1 All pits must be filled with clean washed leach line rock to the cap depth. The rock shall be graded at 1.0 to 3.0 inches in size and shall be covered with straw, untreated building paper, geotextile fabric, or concrete prior to backfill to prevent the infiltration of soil into the rock.

8.6.4.2 A 4-inch approved pipe shall be installed from the ground surface to the bottom of each seepage pit for clean-out, pumping and verification of the total pit depth. The pipe shall have perforations from the cap depth to the bottom of the pit and be of solid construction from the cap depth to the ground surface. A screw fit cap must be placed on top of the riser to allow access.

8.6.4.3 Where more than one vertical seepage pit is proposed for the primary or reserve system, a watertight distribution box with risers for accessibility of sufficient size to accommodate the necessary field laterals shall be constructed at the head of each dispersal field with watertight inlet and outlets.

8.6.4.3.1 Each seepage pit shall be connected separately to a distribution box, shall not be subdivided, and shall provide equal distribution.

8.6.4.3.2 Equal distribution is not required for repairs when infeasible to install or where site conditions warrant a different distribution design, such as serial distribution (sloping sites or when trench length variability is necessary), or pressure dosed systems.

8.7 Minimum Drip Dispersal System Requirements

8.7.1 General Requirements

8.7.1.1 Prior to the final inspection approval of the installation permit, the area of the drip dispersal system shall be planted with appropriate vegetation, such as grass, to allow for uptake of nutrients from the wastewater. A property owner shall maintain all vegetation planted as part of the OWTS design and operation.

8.7.1.2 The drip dispersal system shall be designed and maintained as necessary to reduce orifice clogging and root intrusion.

8.7.1.3 The drip dispersal system shall be designed, located and maintained to prevent vehicular traffic over it. The use of barriers incorporated into the landscape for this purpose are recommended. Barriers or barricades may be required if warranted.

8.7.1.4 The setbacks required between drip dispersal systems and other components of the OWTS as well as structures, property lines, easements, watercourses, wells, or grading shall be the same as required for leach lines, unless otherwise noted. See the setback table found in Chapter 6.0 of this LAMP for the complete list of setbacks.

8.7.1.5 Drip dispersal systems are pressure distribution systems and head loss calculations shall be provided to ensure proper hydraulic pressure at the emitter.

8.7.1.6 The qualified professional responsible for the design of the supplemental treatment system shall certify in writing that the installation of all components was completed per the approved design.

8.7.1.7 The qualified professional responsible for the design of the supplemental treatment system shall prepare an Operations and Maintenance Plan for the system addressing all necessary activities and associated frequencies to operate and maintain the system as designed.

8.7.2 Drip Dispersal System Dimensions and Specifications. Drip dispersal systems shall meet the dimensions and specifications as shown in Table 8.7-1.

Table 8.7-1: Drip Dispersal System Dimensions and Specifications	
Minimum area	Per Table 8.3-1
Minimum depth of soil cover[1]	6”
Maximum depth of soil cover	12”
Minimum emitter longitudinal spacing on emitter line	2’
Minimum Distance between emitter lines	2’
Maximum slope	30%
Maximum slope with Slope Stability Study	40%

1-Minimum soil cover for OWTS designed to reduce pathogens shall be 12 inches.

8.7.3 Design and Sizing

8.7.3.1 Pressurized drip dispersal systems shall be designed by a qualified professional and installed per the manufacturer’s recommendations. Calculations to size the drip dispersal infiltrative area shall use the peak daily flow and the application rates provided Table 8.3-1 based on the highest percolation rate. The minimum total infiltrative surface area for drip dispersal is 400 square feet, regardless of flow.

8.7.4 Materials and Construction

8.7.4.1 Drip dispersal system emitter lines shall be designed as a continuous loop circuit with no dead-ends.

8.7.4.2 Vacuum release valves shall be installed at the highpoint of the emitter lines.

8.7.4.3 Drip dispersal systems shall be time dosed over a 24-hour period. Demand control dosing shall override timed dosing in periods of flow where timed dosing cannot accommodate the excessive flow.

8.7.4.4 Drip dispersal systems shall be designed to have a minimum operating pressure at the emitter head of 10 pounds per square inch (psi), a maximum operating pressure of 45 psi, a maximum system operation pressure of 60 psi, and a maximum discharge rate per emitter of 1.5 gallons per hour.

8.7.4.5 All drip dispersal systems shall incorporate an automatic mechanism for backwashing or flushing the drip lines and filters.

8.7.4.6 Areas where drip dispersal is installed or to be installed shall be protected from any activity or disturbance impacting the system design and construction during and after construction. Barricades or construction fencing may be required.

8.8 Minimum Shallow Bed Dispersal System Requirements

8.8.1 General Requirements

8.8.1.1 A shallow bed dispersal system may be used in specific areas of San Diego County, including the Borrego Springs area, on level ground with uniform coarse sand, sand, loamy coarse sand, or loamy sand soils with percolation rates of three (3) minutes per inch or faster.

8.8.1.2 Leaching chambers or binded expanded polystyrene synthetic aggregate units may be used instead of the rock construction. All installations must comply with IMAPO PS 63 and IGC 276, respectively, and must be installed in accordance with the manufacturer's specifications. No reduction in sizing is permitted with the use of these rock alternative construction components. To stabilize the installation before inspection, the soil or required fill material shall be added between and around the leaching chambers or binded expanded polystyrene synthetic aggregate units, leaving the uppermost surface of the units exposed to allow for system inspection.

8.8.2 Shallow Bed Dimensions and Specifications

Table 8.8-1: Shallow Bed Dispersal System Dimensions and Specifications	
Minimum Infiltrative Area	Per Section 8.8.3
Grade of clean, washed rock	1.0" to 1.5"
Minimum depth of rock below perforated pipe	12"
Maximum depth of rock below perforated pipe	18"
Minimum depth of rock over perforated pipe	2"
Minimum soil cover over rock	12"
Maximum soil cover over rock	18"
Minimum/Maximum depth of bed	36"
Minimum grade of trench bottom (end to end)	level
Maximum grade of trench bottom (end to end)	2" per 100'
Distance between beds	10 edge to edge

8.8.3 Minimum Shallow Bed Sizing Requirements

8.8.3.1 Residential Dispersal System Sizing. The sizing of residential dispersal fields utilizing shallow bed dispersal systems shall have the equivalent infiltrative surface area as required for residential leach lines for percolation rates associated with sandy soils. Table 8.8-2 provides the minimum required shallow bed dispersal system infiltrative surface areas that are equivalent to the leach line requirements based on percolation rate (derived from Table 8.2-1). Shallow bed infiltrative

surface areas shall have dimensions that provide the minimum square footage required in Table 8.8-2 based on the bottom of the bed area only. The minimum total infiltrative surface area for shallow bed dispersal is 400 square feet, regardless of flow.

Table 8.8-2: Minimum Residential Shallow Bed Infiltrative Surface Area Square Foot Requirement (Based on Percolation Rate of 1-3 MPI)

1 Bedroom	2 Bedrooms	3 Bedrooms	4 Bedrooms	5 Bedrooms	6 Bedrooms
400	400	400	500	625	750

Example – The project is a shallow bed dispersal system for a 3-bedroom residence with a percolation rate of less than 3 minutes per inch.
According to Table 8.8-2, a 3-bedroom residence with a percolation test result of less than 3 minutes per inch requires 400 square feet of infiltrative area. This infiltrative area may be satisfied with any dimension with a bottom infiltrative surface area equal to 400 square feet. For example, the following dimensions all provide a bottom infiltrative surface area of 400 square feet: 40 feet x 10 feet; 20 feet x 20 feet; 16 feet x 25 feet.

8.8.4 Materials and Construction

8.8.4.1 All piping and materials shall be of approved material.

8.8.4.2 Shallow beds that utilize gravel shall be filled with clean, washed rock graded at 1.0 to 1.5 inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill to prevent the infiltration of soil into the rock.

8.8.4.3 The wastewater shall be distributed equally across the shallow bed using a watertight distribution box of sufficient size to accommodate the necessary bed distribution lines. Distribution lines of approved (4) inch perforated pipe shall be installed within the bed and spaced between three (3) and six (6) feet with apart, center to center. No part of the perimeter sidewall of the bed shall be more than three (3) feet from a distribution line. For shallow beds up to eight (8) feet in width, the distribution lines may be configured with each lateral placed one (1) foot from the perimeter sidewall of the shallow bed and shall run the length of the bed. The terminal ends of the distribution lines may be manifolded over the width of the bed in a rectangular pattern. Two (2) inches of rock shall be placed over the distribution lines.

8.8.4.4 Where more than one shallow bed is installed, a watertight distribution box of sufficient size to accommodate the necessary beds shall be constructed at the head of each dispersal field with watertight inlet and outlets. Each bed shall be connected separately to a distribution box, shall not be subdivided, and shall provide equal distribution.

8.8.4.5 No shallow bed shall be placed under concrete, blacktop, roadway or structure. If necessary to cross under such construction, watertight lines of approved materials shall be used. Shallow beds must be maintained in an open area and may not be compacted or driven over.

Barricades may be required to maintain this area when requested by DEHQ.

8.8.5 Slopes. Shallow bed dispersal systems are not permitted in areas with sloping conditions.

8.9 Other Dispersal Systems

Other dispersal field designs may be proposed for use and will be evaluated on a case-by-case basis. All dispersal designs must meet the minimum infiltrative surface area requirements of this Chapter. Additional infiltrative surface area may be required, based on the proposed dispersal design.

9.0 ONSITE WASTEWATER TREATMENT SYSTEMS WITH SUPPLEMENTAL TREATMENT

9.1 General

OWTS with supplemental treatment are OWTS that includes some type of advanced or supplemental treatment for nitrogen and/or pathogens in addition to the primary treatment that occurs in a septic tank used with a standard OWTS.

9.1.1 Determination of Feasibility to Install, Operate, and Maintain an OWTS with Supplemental Treatment. The design, installation, operation, and maintenance activities associated with OWTS with supplemental treatment is complex and expensive when compared to standard OWTS. Many property owners have started the process to utilize an OWTS with supplemental treatment and have found the cost too prohibitive, causing project delays or stoppages. To avoid this situation and ensure property owners have a complete understanding of the initial and ongoing requirements and costs associated with this type of system, the property owner shall provide design, installation, operation, and maintenance feasibility information and a signed statement of understanding on a form provided by DEHQ as part of the OWTS Layout Report.

9.1.2 Licensed installers responsible for the installation of the OWTS with supplemental treatment system shall be experienced and competent in this type of installation work, shall follow all engineer's design and manufacturer's specifications, and shall be trained/certified by the manufacturer for the specific supplemental treatment system.

9.2 Design Criteria

9.2.1 Supplemental Treatment Requirements for Nitrogen Reduction

9.2.1.1 All pre-engineered supplemental treatment system components shall be placed after a standard septic tank sized for the project as provided in Tables 7.2-1 and 7.2-2. Single compartment tanks may be considered.

9.2.1.2 Supplemental treatment components for residential use designed to reduce nitrogen shall be NSF/ANSI 245 certified to meet a 50 percent (50%) reduction in total nitrogen when comparing the 30-day average influent to the 30-day average effluent. As the NSF/ANSI 245 certification is limited to residential use up to 1500 gallons per day, any OWTS with supplemental treatment proposed for residential or commercial uses (with domestic wastewater only) with higher flows must be designed by a California licensed Civil Engineer to address the specific wastewater characteristics and flows from the proposed use.

9.2.1.3 The effluent concentration of total nitrogen from an OWTS with supplemental treatment can be assumed to be 50% of that for a standard OWTS serving a single-family residence.

9.2.2 Supplemental Treatment Requirements for Pathogen Reduction

9.2.2.1 Supplemental treatment components designed to perform disinfection shall provide sufficient pretreatment of the wastewater so that effluent from the supplemental treatment components does not exceed a 30-day average total suspended solids of 30 milligrams per liter and shall further achieve an effluent fecal coliform bacteria concentration less than or equal to 200 Most Probable Number (MPN) per 100 milliliters.

9.2.2.2 All dispersal systems for OWTS with supplemental treatment designed for the reduction of pathogens shall have a minimum soil cover of 12 inches.

9.2.3 A supplemental treatment system must be installed by a licensed installer certified to install the specific supplemental treatment system proposed and the system must be installed according to the design approved in the OWTs Layout Report. The Qualified Professional responsible for the design must be contacted prior to the installation to provide the required installation supervision and certification. The certification by the Qualified Professional shall be in writing and shall certify that the installation of the system was completed per the approved design.

9.2.4 Treated effluent from all supplemental treatment system shall be discharged to a subsurface dispersal system consisting of leach lines, vertical seepage pits, deep bed trenches, or pressurized drip dispersal systems.

9.2.5 System sizing for dispersal systems that utilize leach lines, vertical seepage pits, and deep bed trenches shall be the same as those used for standard OWTS.

9.2.6 Pressurized drip dispersal systems shall be designed by a qualified professional and installed per the manufacturer's recommendations. Calculations to size the drip dispersal system shall use the peak daily flow, the slowest percolation rate documented from the site evaluation, and the application rates provided Table 8.3-1.

9.2.7 A minimum two (2) foot separation between the bottom of the dispersal system to the highest anticipated level to which groundwater could be expected to rise is required for OWTS with supplemental treatment for nitrogen reduction. For supplemental treatment system designed for pathogen reduction, a minimum three (3) foot separation is required.

9.2.8 A minimum of two (2) feet of permeable soil, as required for the type of dispersal system in Chapter 8.0, must exist below the bottom of the supplemental treatment system dispersal system.

9.2.9 The supplemental treatment system shall be equipped with a visual and audible alarm as well as a telemetric alarm that alerts the owner, the qualified service provider, and DEHQ of system malfunctions. The telemetric alarm requirement shall not apply to cases where it is demonstrated that a telemetric alarm is impracticable.

9.2.10 The supplemental treatment system design shall include a sampling port for sample collection on the dosing pump discharge line or other suitable location representative of effluent quality.

9.2.11 Septic tanks, pump chambers or other related components of a supplemental treatment system including risers may be required to undergo a water tightness test at the site of the installation if needed. Anti-floatation devices shall be utilized as needed.

9.3 Operation and Maintenance Requirements, Annual Operating Permit

9.3.1 All supplemental treatment systems require an annual operating permit issued by DEHQ. The annual operating permit will define the monitoring and maintenance requirements as specified by the manufacturer and/or qualified professional who designed the system.

9.3.2 An approved Operations and Maintenance Plan shall be prepared by the qualified professional responsible for the system design that includes the qualified professionals name, address, telephone number, and professional license number. The Operations and Maintenance Plan must address all activities and associated frequencies necessary to operate and maintain the system as designed. A copy shall be maintained at the site and shall be available to the qualified service provider and to DEHQ upon request. The OWTS owner shall maintain compliance with the requirements of the Operations and Maintenance Plan at all times.

9.3.3 The owner is responsible to ensure that the supplemental treatment system is maintained by a qualified service provider and a maintenance contract must be in effect at all times.

9.3.4 All supplemental treatment systems require, at a minimum, biannual inspections by the qualified service provider to ensure proper operation and maintenance of the system, or more often if required by the manufacturer or qualified professional. The property owner is responsible for ensuring copies of the inspection results are provided to the DEHQ within 30 days of the inspection being completed.

9.3.5 The drip dispersal system shall be flushed once every three months for the first year or until vegetation is established, whichever occurs first. Flushing shall occur every six months thereafter.

9.3.6 The qualified service provider shall be qualified and trained/certified to provide service to the specific supplemental treatment system and shall be responsible for the following:

9.3.6.1 Assessing the supplemental treatment system to determine operational status related to the requirements of the Operations and Maintenance Plan.

9.3.6.2 Performing routine activities in accordance with the Operations and Maintenance Plan and any other activities required to keep the system operational.

9.3.6.3 Responding to emergencies in a timely manner.

9.3.6.4 Collecting and recording information regarding operational status of treatment components and recommending timely maintenance, replacement, or pumping of various components as required.

9.3.6.5 Monitoring system performance through collection and analysis of effluent samples when appropriate for system evaluation or required by the manufacturer. Monitoring and reporting the ongoing maintenance of the required vegetation in the dispersal field area.

9.3.6.6 Reporting system operational status/or system performance to the property owner and DEHQ.

9.3.6.7 Serving as an informational resource for the property owner.

9.3.7 The property owner is responsible for reporting all failures, malfunctions, service requests, alarms, or other instances where a supplemental treatment system requires the attention of a qualified service provider by providing a copy of the inspection results to DEHQ within 30 days of the inspection being completed.

9.3.8 Failure of a property owner to monitor, maintain, or operate the supplemental treatment system as designed and in accordance with the terms of the permit, the manufacturer's specifications, and the operations and maintenance manual approved for the system may result in revocation of the annual permit pursuant to section 68.335 of the Regulatory Code or other enforcement action.

9.3.9 Failure of a property owner to maintain an annual operating permit, to provide the biannual inspection results, or to provide timely notifications of supplemental treatment system issues to DEHQ may result in revocation of the permit pursuant to section 68.335 of the Regulatory Code, other enforcement action as provided in Title 1 of the San Diego Regulatory Code, and/or loss of coverage under the conditional waiver of waste discharge requirements contained in the OWTS Policy.

9.4 Conditions of Installation Permit and Recordation of Covenant and Agreement

9.4.1 The requirements in Section 9.3 relating to the annual operating permit, ongoing operation and maintenance, and property owner responsibilities are standard conditions of the installation permit for the OWTS with supplemental treatment.

9.4.2 Prior to the issuance of the installation permit for an OWTS with supplemental treatment, or for a reserve OWTS with supplemental treatment, the property owner shall record with the County Recorder's Office a Covenant and Agreement, or other equivalent document, with an acknowledgement of and promise to comply with the conditions of the installation permit for an OWTS with supplemental treatment and provide a copy to DEHQ. This document shall run with the land and shall be binding on any future owners, encumbrances, their successors, heirs, or assigns and shall continue in effect until DEHQ approves its termination. Termination shall occur when the use of the OWTS subject to monitoring has ceased in compliance with all applicable laws and regulations.

CHAPTER 10.0 ONSITE WASTEWATER TREATMENT SYSTEMS REQUIRING CORRECTIVE ACTION

All OWTS have the potential to result in surfacing sewage or effluent to ground surface or backing up into plumbing fixtures for various reasons, including the age of the system, root intrusion, improper use or maintenance, or improper design. These OWTS will require corrective action to mitigate any risk to public health or contamination of the environment.

10.1 Defective and Existing Nonconforming OWTS

10.1.1 An OWTS that allows sewage, human excrement or other liquid wastes to be disposed of so that the waste is not confined underground, or that constitutes a safety hazard, is a defective system. The property owner shall promptly repair a defective OWTS by connection to a public sewer system or by repair or replacement of the OWTS under permit and inspection by DEHQ. The OWTS shall be pumped by a registered sewage pumper as necessary to keep the sewage confined to underground until the corrective action has been completed.

10.1.2 Any existing OWTS that do not meet the minimum siting and design requirements of this LAMP are considered existing, nonconforming OWTS. Sites with existing, nonconforming OWTS that propose changes in construction, use, occupancy, land use or development and which propose expansion of the nonconforming conditions of the OWTS shall not be approved.

10.1.3 Existing OWTS where the RWQCB is requiring corrective actions for nitrate reduction or pathogen reduction with ongoing monitoring and reporting, including as part of a TMDL implementation plan, a TMDL restoration plan or other actions, are not covered by the local permitting program or LAMP and are under the purview of the RWQCB. Permit applications received for OWTS not covered under the LAMP scope of coverage will be referred to the appropriate RWQCB.

10.2 Corrective Action Requirements

10.2.1 Complaints: DEHQ will record all complaints received alleging violations of the San Diego County Code or LAMP relating to OWTS into the Department's database system. These alleged violations are assigned to staff for investigation and follow up. Complaint response is prioritized based on the potential threat to health and safety. For example, priority complaints include surfacing sewage and open or unsafe septic tanks, pump tanks, or seepage pit excavations. Complaints alleging work being performed without a permit or by unlicensed persons are also recorded in the Department's database system and are assigned to staff for investigation and follow-up.

For priority complaints, DEHQ will initiate an investigation within 24 hours of notification to determine the validity of the complaint. Non-priority complaint investigations will be initiated within two business days. Investigative activities are based on the nature of the compliant received and may include, but are not limited to, a site inspection to observe conditions relating to the installation, construction, operation, and maintenance of an OWTS, the completion of an OWTS operation and maintenance survey, the

provision of OWTS operation and maintenance guidance/information, the performance of dye testing as an indicator of surfacing sewage or effluent, the review of repair and pumping records, the requirement of an evaluation of the OWTS and/or site conditions by a qualified professional, and the requirement for the submittal of a technical report documenting the site conditions and/or operational status of the OWTS. See guidelines for OWTS performance evaluation in Appendix III – OWTS Performance Evaluation Guidelines.

As a site visit conducted in response to an alleged complaint also provides an opportunity to conduct outreach and education to OWTS owners, staff will provide a copy and a summary of the completed survey results to the property owners or tenants that participate in the operations and maintenance survey. Staff may also provide guidance information on OWTS maintenance and operation to property owners or tenants to further enhance education of OWTS usage.

10.2.2 Any OWTS that is found to be defective shall have a notice of violation issued to the property owner requiring action to eliminate the immediate health hazard through pumping of the septic tank by a licensed sewage hauler or elimination of wastewater flows to the failing OWTS. The notice of violation will also require a repair or replacement to be completed to the OWTS as needed within a reasonable time frame. DEHQ staff time related to the investigation and resolution of violations is subject to cost recovery at the current hourly rate.

10.2.3 The repair shall be completed under permit and inspection by DEHQ. An OWTS Layout Report may be required to determine the siting, design, and construction of the repair or replacement prior to the issuance of a permit.

10.2.4 Compliance with all local ordinance codes and requirements, as well as all corrective action requirements, are conditions of coverage under the conditional waiver of waste discharge requirements contained in the OWTS Policy (OWTS Policy 12.0, 12.0.5, 12.0.7). Failure to comply with corrective action requirements or enforcement orders constitute a failure to meet the conditions of the waiver of waste discharge requirements contained in the OWTS Policy (OWTS Policy 11.7) and the OWTS may be referred to the Regional Water Quality Control Board for oversight (OWTS Policy 2.6).

10.2.5 Additional abatement or enforcement actions may be implemented as provided for in section 10.4 and, where DEHQ determines the surfacing sewage is an immediate threat to public health and safety, the actions authorized under the San Diego County Code Section 69.101 et seq.

10.3 Variances

10.3.1 All new and replacement OWTS shall meet the minimum requirements of this LAMP and local ordinance.

10.3.2 In cases where an existing OWTS cannot meet the minimum requirements, often where area is limited for the proposed repair or replacement, a property owner may submit a written request for a variance of a specific standard or requirement. An alternative OWTS design that maintains substantial conformance to the minimum requirements in this LAMP shall be prepared by a qualified professional

and shall be submitted with the variance request.

10.3.3 DEHQ shall consider the variance request to determine if the alternative repair or replacement siting and design proposal is in substantial conformance, to the greatest extent practicable, with the OWTS Policy and this LAMP, is adequate to accommodate the sewage flows from the buildings being served by the OWTS, is able to achieve the same practical protection to public health and groundwater as afforded by the LAMP requirements by modification of the system design, and is able to provide an adequate level of protection to adjacent properties.

10.3.4 DEHQ may approve a variance request upon determination that the proposed alternative will not result in contamination of an underground source of water or pose a threat to public health or safety.

10.3.5 Property owners with variance requests that are not approved by DEHQ and the new or replacement OWTS does not meet the minimum conditions and requirements in the ordinance code or LAMP shall notify the RWQCB that the OWTS does not meet the requirements of the approved LAMP and is not covered by the local permitting program. (OWTS Policy 2.6)

10.3.6 Repairs may be approved between individual leach lines where sufficient area exists and when demonstrated that the parcel has no other applicable area to repair the dispersal system.

10.4 Abatement and Enforcement

10.4.1 A violation of any standard or requirement contained in this LAMP is considered a public nuisance and is subject to nuisance abatement under the provisions of Title 1, Division 6, Chapter 2 of the San Diego Regulatory Code. In addition, DEHQ may also institute any other legal remedy available to the County, including the provisions of Title 1, Division 8 of the San Diego Regulatory Code.

10.4.2 All time, services, and materials costs associated with the voluntary and involuntary abatement of violations of this chapter shall be recovered in accordance with fees established in Section 68.107 of this Code. (Involuntary abatement is that action that is performed by, under the direction of, or at the initial expense of the County of San Diego. Voluntary abatement is the abatement of a violation by the owner or designee after notification by the Director that such violation exists and must be abated.)

10.5 Denial of Coverage under the OWTS Policy/Conditional Waiver

10.5.1 DEHQ may deny coverage to any OWTS that is not in compliance with Section 6.1 of the OWTS Policy (conditions required to maintain coverage under the conditional waiver), or not able to adequately protect the water quality of the waters of the State as determined by the Regional Board. DEHQ shall make a referral to the appropriate RWQCB when an OWTS is identified under this subsection (OWTS Policy 6.2).

10.5.2 An owner of a new or replacement OWTS that does not meet the conditions and requirements set forth in this approved LAMP shall notify the appropriate RWQCB of lack of coverage under the LAMP

and submit any required documentation, such as a report of waste discharge (OWTS Policy, Section 2.6). DEHQ shall make a referral to the appropriate RWQCB when an OWTS is identified under this subsection.

10.6 Appeals

10.6.1 Administrative Decision: A property owner or other affected person who disagrees with an administrative decision by the Department relating to an application for an OWTS Layout Report or an OWTS related permit may request a review in accordance with the provisions of San Diego County Code, Section 68.336. If the Department review does not resolve the disagreement, the property owner or other affected person may appeal the decision made by the Department in accordance with the provisions of San Diego County Code, Section 68.336(g).

10.6.2 Enforcement Action: A person subject to enforcement action by the Department may submit a request for a hearing within fourteen (14) days of receiving notice of the enforcement action in accordance with the applicable procedures provided in Title 1, Division 6 and Division 8 of this Code.

10.6.3 The filing of a review or an appeal pursuant to this section shall stay the decision of the Department, unless the Department has determined that an imminent health hazard requires immediate action. Any required fees shall be submitted with the request for hearing or appeal.

CHAPTER 11.0 ONSITE WASTEWATER TREATMENT SYSTEMS NEAR IMPAIRED WATER BODIES

11.1 OWTS Policy Requirements

The OWTS Policy, Section 10-Tier 3 provides regulation of OWTS near impaired water bodies. Although local agencies are authorized under the OWTS Policy to implement provisions of Tier 3 to the extent of their local authority; implementation of Tier 3, including notifications and enforcement requirements for OWTS determined to be in Tier 3, is the responsibility of the RWQCBs (OWTS Policy Final Substitute Environmental Document, approved June 19, 2012/Addendum dated April 18, 2023, and OWTS Policy, Section 4.7).

OWTS Policy, Section 10-Tier 3 is not designed to supersede other state policy established to address impaired water bodies but is designed to provide interim measures until state policy or actions can be adopted or approved to address the impairment.

The OWTS Policy, Section 10-Tier 3 requires an APMP to address impaired water bodies. The APMP may be implemented through three specific methods (1) an adopted TMDL, (2) special provisions incorporated into an approved LAMP, if any or (3) for those water bodies listed in the OWTS Policy, Attachment 2, in accordance with OWTS Policy Sections 10.8, 10.9, and 10.10.

OWTS near impaired water bodies that are not listed in the OWTS Policy, Attachment 2, and do not have a TMDL, and are not covered by special provisions in an approved LAMP, are not addressed by Tier 3 of the OWTS Policy.

11.2 Adopted TMDLs, TMDL Projects

If there is an adopted TMDL, the geographical area is defined by the TMDL and the APMP is in accordance with the TMDL Implementation Plan. The TMDL implementation plan supersedes all other requirements in Tier 3.

If an impaired water body has an adopted TMDL, property owners of existing, new and replacement OWTS must comply with the TMDL implementation plan requirements. A local agency permitting program may include permitting requirements for these OWTS, if these requirements fall within the scope of coverage of the LAMP and local ordinance authority. If these OWTS fall outside of a local permitting program, the RWQCB is responsible for implementation using existing regulatory tools, such as prohibitions, WDRs, or waivers of WDRs.

Some OWTS within a TMDL geographical may not be covered under the scope of coverage of this LAMP and the extent of the local permitting program authority. These include existing OWTS and OWTS with supplemental treatment where ongoing effluent sampling and reporting are required. Owners of OWTS that are not covered under the LAMP or local permitting program or who cannot meet the minimum requirements provided in Section 10.8 will be referred to the RWQCB.

11.2.1 TMDL for the Rainbow Creek Watershed

This TMDL was adopted in 2005 (Resolution R9-2005-0036) and identified the Rainbow Creek watershed as the geographical area to address excessive nutrients in Rainbow Creek contributing to excessive algal growth.

While the TMDL mainly addresses surface runoff sources, the TMDL also identified owners of OWTS and agricultural operations as controllable sources via the groundwater pathway. However, since the contribution from the agricultural operations could not be calculated at that time, the entire calculated total nitrogen load of 200 kg/year via the groundwater pathway was assigned to the OWTS source.

The TMDL implementation plan included using waste discharge requirements, waivers, or prohibitions as necessary to control the discharges. To address OWTS, the TMDL implementation plan provided to incorporate the regulations developed by the SWRCB, which is now the OWTS Policy. The OWTS Policy was adopted into the San Diego Basin Plan by the RWQCB in 2015. As no other provisions for OWTS were established as part of the adoption of the OWTS Policy or were including with the adoption of this TMDL, OWTS discharges are currently regulated by DEHQ under the LAMP and conditional waiver contained in the OWTS Policy, or by the Regional Board under SWRCB Order WQ 2014-0153-DWQ, or individual waste discharge requirements.

11.2.2 TMDL for Indicator Bacteria, Project 1-Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)

This TMDL was adopted in 2010 (Resolution R9-2010-0001) to address bacteria with the geographical areas identified as the Pacific Ocean shoreline, Tecolote Creek, Forester Creek, Lower San Diego River, and Chollas Creek.

The TMDL identified the owners of individual OWTS as responsible for controllable nonpoint source bacteria discharges causing or contributing to the impairment at the beaches and creeks but were not assigned a load allocation. Any controllable nonpoint source that has not been assigned a load allocation or has a load allocation of zero is not expected or allowed to discharge a pollutant load as part of the TMDL. The TMDL implementation plan included the use of waste discharge requirements, waivers, or prohibitions to control discharges. As no other provisions for OWTS were adopted as part of this TMDL, the conditional waiver contained in the OWTS Policy remains the effective process for OWTS covered under this policy.

In 2019, the RWQCB issued Investigative Order R9-2019-0014 to existing MS4 dischargers to investigate and identify the sources, pathways and amounts of human fecal material discharges in the Lower San Diego River watershed, including from OWTS. A final report is due in June 2024. Based on the results of the Investigative Order, the RWQCB may elect to revise the TMDL and/or existing waste discharge requirements or waivers or adopt new prohibitions or waste discharge requirements or waivers.

OWTS discharges are currently regulated by DEHQ under the LAMP and conditional waiver contained in the OWTS Policy, or by the Regional Board under SWRCB Order WQ 2014-0153-DWQ or individual waste discharge requirements.

11.2.3 Other Impaired Water Bodies with OWTS Implications

11.2.3.1 Santa Margarita River TMDL Restoration Plan Project

The Santa Margarita River was added to the Clean Water Act section 303(d) Impaired Waters list for nutrients (nitrogen and phosphorus) in 2012. Excessive nutrient loading to the Santa Margarita River and its tributaries causes and/or contributes to exceedances of Water Quality Objectives and adversely impacts the Cold Freshwater Habitat (COLD), Warm Freshwater Habitat (WARM), and Rare, Threatened, or Endangered Species (RARE) beneficial uses designated to the river. Excessive discharge of nutrients also has the potential to adversely impact the Municipal and Domestic Supply (MUN) beneficial use through impact to large groundwater basins in the Santa Margarita watershed (Watershed). Furthermore, nutrients discharged to the surface waters and groundwater in the Watershed have been shown to contribute to the eutrophication impairment of the Santa Margarita River Estuary (Estuary). Major sources of nutrients to the river include Municipal Separate Storm Sewer Systems (MS4s) and agricultural land uses in San Diego and Riverside counties.

To address the impairment, the objective of the Santa Margarita River Water Quality Restoration Plan (River Restoration Plan) is to reduce nutrient loads entering the river and achieve numeric targets in order to restore and maintain the chemical, physical, and biological integrity of the river as well as the downstream Estuary.

To achieve this, the RWQCB is developing the River Restoration Plan to address impairments for nutrients and eutrophication in the river consistent with the Impaired Waters Policy. The River Restoration Plan relies on implementing existing permits, policies, and plans and tracking the effectiveness of the permits, policies, and plans in achieving nutrient load reductions, numeric targets, and beneficial uses through monitoring.

The River Restoration Plan would address the impairment and restore beneficial uses consistent with a 2015 memorandum from the United Stated Environmental Protection Agency on alternative responses to impaired waters that retain more flexibility and efficiency than the traditional approach to setting total maximum daily loads (TMDLs). Should the San Diego Water Board approve the River Restoration Plan, the County of San Diego and County of Riverside, as stormwater permit Co-permittees, and enrollees to agricultural WDRs in the watershed will be required to track the progress of the River Restoration Plan through monitoring.

Although OWTS discharges to the subsurface have not been directly addressed in the technical reports associated with this project, the RWQCB have indicated that implementation may include additional requirements for owners of OWTS in the area through the local permitting program or LAMP. However, no details have been provided and no formal request for changes to the approved

LAMP have been received from the RWQCB in accordance with the OWTS Policy Section 4.4. The River Restoration Plan process will be monitored to identify additional information as it becomes available.

Currently, as there is no TMDL for this water body, no special provisions in the LAMP, and it is not listed in the OWTS Policy, Attachment 2 list of impaired water bodies, pursuant to the OWTS Policy, this water body is not addressed by Tier 3 of the OWTS Policy. OWTS discharges are currently regulated by DEHQ under the LAMP and conditional waiver contained in the OWTS Policy, or by the Regional Board under SWRCB Order WQ 2014-0153-DWQ or individual waste discharge requirements.

11.2.3.2 Tijuana River TMDL Development Project

The lower six miles of the Tijuana River and the Tijuana River Estuary (the Tijuana River Valley) have been listed as Clean Water Act 303(d) impaired water body segment due to excessive bacteria and trash resulting in the impairment of numerous beneficial uses, primarily those associated with aquatic life (e.g., warm freshwater, estuarine, and marine habitat, rare and endangered species, etc.), and human health (e.g., contact and noncontact water recreation, fishing, shellfishing, etc.). OWTS have been listed as a potential source as part of this listing.

Currently, the San Diego RWQCB is developing a TMDL to address these impaired waters with a draft TMDL staff report undergoing internal review. Following internal review, the staff report will be submitted for external scientific review and will then be available for public review. A Basin Plan amendment will also be prepared for adoption by the San Diego RWQCB and for approval by the State Water Resources Control Board, Office of Administrative Law, and the U.S. Environmental Protection Agency.

No information is available at this time related to any proposed load allocations or requirements for owners of OWTS above that already required in the LAMP. This process will be monitored to identify any additional information as it becomes available.

Currently, as there is no TMDL for this water body, no special provisions in the LAMP, and it is not listed in the OWTS Policy, Attachment 2 list of impaired water bodies, pursuant to the OWTS Policy, this water body is not addressed by Tier 3 of the OWTS Policy. OWTS discharges are currently regulated by DEHQ under the LAMP and conditional waiver contained in the OWTS Policy, or by the Regional Board under SWRCB Order WQ 2014-0153-DWQ or individual waste discharge requirements.

11.3 Special APMP Provisions if Contained in the Approved LAMP

The OWTS Policy provides that if there is no TMDL adopted for the impaired water body, but the local permitting program has elected to include special APMP provisions to address specific OWTS near impaired water bodies in the approved LAMP, then the impairment is addressed through this APMP to the scope and extent provided by these special provisions. The special provisions may be substantive

and/or procedural. When a TMDL is adopted for the water body, its implementation plan supersedes all Tier 3 requirements, including the special APMP provisions.

This LAMP does not contain any special provisions specifically related to the siting and design of OWTS near impaired water bodies but implements OWTS Policy Tier 2 minimum standards as applied to all new and replacement OWTS within the extent of authority of local ordinance and the scope of coverage of the LAMP. Some OWTS near impaired water bodies may fall outside the scope of coverage of this LAMP or the extent of the local permitting program authority. New and replacement permit applications received by DEHQ for OWTS that fall outside the scope of coverage of this LAMP are referred to the appropriate RWQCB.

11.4 Local Implementation of OWTS Policy Section 10-Tier 3 APMP for New and Replacement OWTS Near Impaired Water Bodies Listed in OWTS Policy, Attachment 2

The OWTS Policy, Section 10-Tier 3 provides interim APMP requirements for new and replacement OWTS near the impaired water bodies listed in OWTS Policy, Attachment 2 of the policy. As the TMDL program and process is the Federal and State required approach to address impaired water bodies, the Section 10-Tier 3 APMP requirements are intended to be interim measures until such time the TMDL is completed.

Currently, there are no water bodies listed in the OWTS Policy, Attachment 2 within the jurisdiction of the local permitting program. Should a water body be listed in a future update to the OWTS Policy, Attachment 2 list of impaired water bodies, DEHQ will implement the Section 10.8 requirements for new and replacement OWTS permit applications within the scope of coverage of the LAMP and to the extent of local permitting program authority. Owners of OWTS that are not covered under the scope of the LAMP or local permitting program or who cannot meet the minimum requirements provided in Section 10.8 will be referred to the appropriate RWQCB.

APPENDIX I
PERCOLATION TEST PROCEDURES

This Appendix provides the procedures to be used to establish clear direction and methodology for percolation testing in San Diego County. The objective is to determine the area necessary to properly treat and maintain sewage underground; to size the OWTS with adequate infiltrative surface area based on an expected hydraulic conductivity of the soil and the rate of loading; and to provide for a system intended to allow for a long-term expectation of satisfactory performance.

All percolation testing for dispersal systems except vertical seepage pits in San Diego County shall be conducted using the following procedures. The testing shall be performed by or under the direct supervision of a qualified professional registered with DEHQ. Any deviation from these procedures shall be authorized only after receiving written approval from DEHQ. Testing requirements for vertical seepage pits are found in Appendix II.

Note: It is the responsibility of the applicant and property owner to meet any additional requirements and obtain any approvals or permits from other agencies relating to the grading or clearing of brush for the purposes of completing a percolation test, including the implementation of stormwater best management practices.

1.0 Test Holes

1.1 Number of Test Holes

1.1.1 A minimum of six (6) test holes are required when percolation rates are less than 60 minutes per inch (MPI).

1.1.2 At least four (4) percolation test holes at each deep bed location should be provided to represent soil types within the infiltrative surface area of the deep bed. This testing should represent the entire sidewall depth of the pit.

1.1.3 Additional test holes may be necessary on a site-specific basis for reasons that include, but are not limited to the following:

1.1.3.1 Unacceptable percolations test results, including percolation tests not performed in accordance with these procedures, or failed tests results or rates that do not meet the minimum rates for the dispersal system proposed for use.

1.1.3.2 Areas of the disposal field requiring defined limits for exclusion.

1.1.3.3 The disposal system is located out of a concentrated area or is larger in areal extent than typical single residential unit installation.

1.1.3.4 Soil conditions are variable or inconsistent.

1.2 Depth of Testing

1.2.1 Test holes shall be representative of the dispersal system installation depth.

1.2.2 Conditions which may require testing deeper than leach linedepth:

1.2.2.1 Areas of potential impervious soil layers to a minimum of five (5) feet below bottom of infiltrative surface of dispersal field.

1.2.2.2 Slope exceeds 30%.

1.2.2.3 Other factors as might be determined by DEHQ.

1.3 Soil Classification

1.3.1 All test holes and deep borings shall have soil types that describes the relative amount of sand, clay, silt, and combinations thereof as defined by the soil textural triangle developed by the USDA as the *Soil Survey Manual, Handbook 18*.

1.3.2 All percolation testing results are to be reported, including any results not meeting minimum rates suitable for OWTS usage and test holes which encountered groundwater or refusal.

1.4 Location and Identification of Percolation Test Holes

1.4.1 Test holes shall be representative of the dispersal area demonstrating site conditions throughout the entire sewage disposal system with equal consideration of primary and reserve leach fields.

1.4.2 Test holes shall be staked and flagged so the test holes can be located.

1.4.3 Test holes must be identified with all of the following:

1.4.3.1 A test hole number or letter.

1.4.3.2 The depth of the test boring.

1.4.3.3 Lot/parcel number or letter if associated with a subdivision or lot line adjustment.

1.5 Drilling of Borings for Test Holes

1.5.1 Diameter of each test hole shall be a minimum of six (6) inches and a maximum of 12 inches.

1.5.2 If a backhoe excavation is used, a test hole at 12–14 inches in depth shall be excavated into the bottom of the trench so that the testing depth is representative of the type of dispersal system proposed.

1.6 Preparation of Test Holes

1.6.1 The sides and bottom of the holes shall be scarified so as to remove the areas that became smeared by the auger or other tool used to develop the hole.

1.6.2 All loose material should be removed from the hole.

1.6.3 Add two (2) inches of pea gravel to bottom of hole. A secure/stable perforated pipe may be used in the test hole.

1.6.4 Identify and mark a fixed reference point for a consistent measuring point.

2.0 Presoaking the Test Holes

2.1 Procedure

2.1.1 Carefully fill the test hole with 12-14 inches of clear water.

2.1.2 Four-Hour Presoak: Maintain 12-14 inches of clear water for a minimum of four (4) hours. After four hours, allow the water column to drop overnight. Testing must be done within 15-30 hours after the initial four-hour presoak.

2.1.3 Overnight Pre-Soak: If clay soils are present, 12–14-inches of water shall be maintained overnight. A siphon can be used to maintain the supply at a constant level.

2.1.4 Sandy Soils Modified Presoak: In highly permeable sandy soils with no clay and/or silt, the presoak procedure may be modified. If, after filling the hole twice with 12-14 inches of clear water, the water seeps completely away in less than 30 minutes, proceed immediately to Case 2, Section 3.3.3 and refill to six (6) inches above the pea gravel. If the test is done the following day, a presoak will be necessary for at least an hour in order to reestablish a wetted boundary.

2.2 Saturation and Swelling

2.2.1 Saturation means that the void spaces between soil particles are full of water. This can be accomplished in a short period of time.

2.2.2 Swelling is caused by the intrusion of water into the individual soil particles that are full of water. This is a slow process, especially in clay-type soil and is the reason for requiring a prolonged soaking.

3.0 Determination of Percolation Rates

3.1 Determine Case Procedure. The soil type and permeability and the results of the presoak will determine the procedures to be used for determining percolation rates. Testing shall proceed following the presoak based on the conditions outlined in the following cases.

Case 1 – Water remains overnight in the test hole.

Case 2 – No water remains in test hole: Soil with a fast percolation rate is expected based on a test where two columns of 12-14 inches of water each completely percolate~~s~~ into the soil in less than 30 minutes.

Case 3 – No water remains in the test hole: 15-30 hours after the four-hour presoak and soil is not expected to show a fast percolation rate as determined using the two columns of 12-14 inches of water test, as indicated in Case 2.

3.2 Case 1 Procedure -Water Remains in Test Hole

3.2.1 Begin test 15-30 hours after presoak. Clean out the silt and mud and add two (2) inches of pea gravel to the test hole.

3.2.2 Adjust depth of water to six (6) inches in the hole.

3.2.3 From a fixed reference point, take two (2) readings at thirty (30) minute intervals and report the percolation rate as the slower of the two readings.

NOTE: When a minimum amount of water remains due to a damaged hole or silting, the hole may be cleaned out and tested under Case 3, starting with the presoak.

3.3 Case 2 Procedure - No Water Remains in Test Hole-Fast Percolating Soils

3.3.1 Begin test 15-30 hours after presoak if proceeding the next day. Clean out the silt and mud and add two (2) inches of pea gravel.

3.3.2 Fill the hole twice with 12-14 inches of water. Observe to see if each column of water seeps away in less than 30 minutes. If so, proceed with the percolation test. If not, go to Case 3. If the test is done the following day, a presoak will be necessary for at least an hour in order to reestablish a wetted boundary.

3.3.3 Refill hole to six (6) inches above the pea gravel.

3.3.4 Measure from a fixed reference point at 10-minute intervals over a period of one (1) hour. Add water to maintain six (6) inches of water at each 10-minute time interval.

3.3.5 Continue 10-minute readings as long as necessary to obtain a "stabilized" rate with the last two water drop readings not varying more than 1/16th inch or for a duration of four (4) hours.

3.3.6 The last water level drop is used to calculate the percolation rate.

3.4 Case 3 Procedure - No Water Remains in Test Hole

3.4.1 Begin test 15-30 hours after presoak.

3.4.2 Clean out the silt and mud and add two (2) inches of pea gravel.

3.4.3 Maintain water level at six (6) inches above pea gravel for one (1) hour to reestablish a wetted boundary. It is not necessary to record data points for the first hour as this is an adjustment period. Then proceed with the four (4) hour test.

3.4.4 Adjust the water depth to six (6) inches above the pea gravel and measure from a fixed reference point at 30-minute intervals to the nearest 1/16th inch.

3.4.5 Refill the hole as necessary between readings to maintain a six (6) inch column of water over the pea gravel. If a fall of one (1) inch or less is recorded, the test can continue without refilling until the next 30-minute reading interval.

3.4.6 Continue recording readings at 30-minute intervals for a minimum of four (4) hours.

3.4.7 The last water level drop is used to calculate the percolation rate.

4.0 <u>Calculations and Measurements</u>

4.1 The percolation rate is reported in minutes per inch (MPI).

4.2 Calculation Example:

A test result of a ¾ inch fall over a 30-minute time interval would be calculated as follows:
30 minutes divided by 3/4 inch = 40 MPI (30 minutes times 4 = 120, then 120 divided by 3 = 40)
Or convert fraction to decimal equivalent: 3 divided by 4 = 0.75 inch, then 30 minutes divided by 0.75 inch = 40 MPI

4.3 Measurement Principles

4.3.1 The documented time interval for readings must be the actual times and are to be maintained

as near as possible to the intervals outlined for the test (either 10- or 30-minute intervals).

4.3.2 The accuracy and precision of the water level drop measurement and reading is important to ensure the dispersal field sizing is appropriate for the site, as the leach line requirement may differ greatly with only a small change in percolation rate.

4.3.3 The water drop should be measured to the nearest $1/16^{th}$ of an inch. Measurements that fall within a $1/16^{th}$ of an inch interval shall be recorded to the $1/16^{th}$ of an inch that represents the slower rate. For example, a reading over a 30-minute interval observed between $3/8^{th}$ inch (80 MPI) and $7/16^{th}$ inch (69 MPI) is recorded as $3/8^{th}$ inch, the slower of the two rates.

4.3.4 Measurements using a decimal inch rule (tenths of an inch) should be to the nearest increment as can be accurately read.

4.3.5 Measurement from a fixed reference point shall be from a marked section on the perforated pipe or on the platform that is stable and represents the center of the test hole.

4.3.6 A percometer or other approved water measuring device is required when the depth of a test hole is greater than 60 inch in depth. Accurate measurement is vital as the percolation rate calculated from these measurements will determine the required absorption area. For test holes deeper than 60 inches, the report shall include a description of the measurement method and how the borings were cleaned out and prepared for testing.

4.3.7 Adjustment Factor for Gravel Packed Percolation Test Holes. The following shall be used to correct for the void space difference when a test hole is used completed with a full gravel pack.

4.3.7.1 Equation Inputs

X-Section Area of Test Hole	$A_H = .25\ \pi\ D_H^2$
X-Section Area of Pipe	$A_P = .25\ \pi\ D_P^2$
X-Section Area of Gravel Pack	$A_G = A_H - A_P$
Drainable Voids in Gravel Pack	$= n\ (A_G)$ *
Total Voids	$A_P + n\ (A_G) = A_P + n\ (A_H - A_P)$
* A test should be run on the actual rock used to establish the Void Ratio (n).	

4.3.7.2 Adjustment Factor (AF) Calculation:

$$AF = \frac{\quad}{A_H}$$

$$\frac{}{A_P + n\,(A_H - A_P)}$$

$$AF = \frac{.25\,\pi\,D_H^2}{.25\,\pi\,D_P^2 + n\,(.25\,\pi\,D_H^2 - .25\,\pi\,D_P^2)}$$

$$AF = \frac{D_H^2}{D_P^2 + n\,(D_H^2 - D_P^2)}$$

4.3.7.3 Application: Adjusted Percolation Rate = MPI x AF

4.3.7.4 Typical Values:

4.3.7.4.1 For n = 0.35

4.3.7.4.2 Adjustment Factors:

Pipe Diameter	Hole Diameter	Adjustment Factor
4”	6”	1.57
4”	8”	1.95
4”	10”	2.20

5.0 Reports

5.1 Report Requirements

5.1.1 All test data, field notes, and required information shall be submitted on approved DEHQ forms with appended data or information as needed.

5.1.2 Reports shall be signed with an original signature by the consultant who either performed or supervised the testing.

5.1.3 San Diego County Code, Section 68.328 requires all percolation testing to be done by a civil engineer, geologist, or environmental health specialist, registered in the State of California. These qualified professionals are required to be registered with DEHQ.

5.1.4 The percolation test is only one critical factor in siting an OWTS. Site considerations may require special evaluation by a qualified professional to technically address issues such as high groundwater, steep slope, nitrate impacts, cumulative impacts, (mounding, and horizontal transmissibility).

5.1.5 Qualified professionals who employ technicians are responsible for the work performed by the technician. It is incumbent upon the qualified professional to properly train, equip, and supervise anyone performing work under his or her direction and license.

APPENDIX II
VERTICAL SEEPAGE PIT DISPERSAL SYSTEMS
CAPACITY TEST PROCEDURES

1.0 All vertical seepage pits for new construction will require capacity testing by a qualified professional certified to perform percolation tests in San Diego County. Testing requirements may be amended where adequate information exists as to soil types, depth, and permeability. Percolation testing for vertical seepage pits shall be completed per the following procedures.

2.0 A 12- to 48-inch diameter test hole shall be excavated to a depth of at least 10 feet deeper than the proposed installation depth.

3.0 A minimum 10-foot separation between the bottom of the vertical seepage pit and the anticipated high groundwater level is required. A minimum 20-foot separation may be required for faster percolating soils.

4.0 Boring logs shall be recorded and included with all test reports indicating soil strata depths and types and visual classification according to the USDA *Soil Survey Manual, Handbook 18* along with any groundwater encountered.

5.0 Groundwater Check: The test hole must be checked for the presence of groundwater a minimum of 24-hours after the completion of the test boring to allow time for groundwater to stabilize in the hole, if present. A 24-hour notice shall be provided to DEHQ to schedule an inspection of the groundwater reading. After the groundwater reading is recorded, the test hole shall be backfilled to a depth 10 feet above the bottom of the test hole or to the groundwater level whichever is shallower.

6.0 Pre-Soak: The pit shall be filled with water to the proposed cap depth and a continuous pre-soak shall be maintained at the proposed cap depth level for a minimum 8-hour period. In highly permeable soils where cap levels cannot be maintained during pre-soak, the test shall be conducted at a depth no higher than the actual pre-soak level that was observed and documented during the pre-soak. Document the pre-soak attempt with gallons of water used. In no case shall less than 5,000 gallons of water be used within a 1-hour period in the attempted pre-soak when the cap level cannot be maintained. The depth of the test hole shall be noted on the boring log and in no case shall the sidewall of permeable soil below the cap level be less than ten feet.

7.0 Soils Uniformity Test: Upon completion of the pre-soak period, fill the pit to cap level and determine uniformity of soil by measuring the falling head. Distance to the water level shall be measured at 15-minute intervals, or more frequently if needed, until the drop stops or the pit empties. A graph of the drop in water level shall be attached to all proposals submitted by the qualified professional. If the graph shows non-uniform or varying rates in water level drop over time, the soil will be considered non-uniform and not suitable for vertical seepage pit dispersal system usage.

8.0 Absorption Capacity Test: If the procedure in Section 7.0 above demonstrates uniform soil, proceed with a two-hour static head or falling head capacity test.

8.1 Static Head – The pit shall be filled with water to the cap depth and the water column shall be maintained at that level for two hours. The amount of water added to maintain this level must be documented. The 24-hour capacity is determined by multiplying by 12. Adjustment to a four-foot diameter pit is made if a lesser size test hole is used.

8.2 Falling Head – The pit shall be filled with water to the cap depth and the column of water shall be allowed to drop for a two-hour period. The distance dropped shall be measured and the amount of water absorbed determined. This amount is multiplied by 12 to determine the 24-hour capacity. Adjustment to a four-foot diameter pit is made if a lesser size test hole is used.

9.0 The minimum absorptive capacity for a new OWTS using vertical seepage pits as the dispersal system shall be five (5) times the volume of the required septic tank or 5000 gallons per day whichever is greater. All individual vertical seepage pits shall have a minimum capacity of 1,667 gallons per day.

10.0 It shall be the responsibility of the property owner and qualified professional to maintain all test holes or pits in a safe manner prior to backfill or capping to prevent a hazard or accident.

APPENDIX III
OWTS PERFORMANCE EVALUATION GUIDELINES

1.0 Introduction

1.1 The purpose of these evaluations is to determine, on an individual basis, whether existing OWTS are functional and meet minimum standards of performance established by this LAMP. These guidelines set forth procedures for conducting performance evaluations, to assure consistency and thoroughness in verifying the functioning status of existing septic systems that have been identified as a potential source of surfacing effluent or sewage.

1.2 The following performance criteria are established as minimum requirements:

1.2.1 There is no surfacing effluent at any time.

1.2.2 There is always positive flow from the leachfield and from the septic tank with no backup to the tank or house plumbing during high groundwater conditions.

1.2.3 There is an adequately sized septic tank for the structure(s) being served and it is serviceable – e.g., access riser for maintenance. The septic tank must be watertight and constructed of approved materials.

2.0 Inspection Responsibility

2.1 The inspection shall be performed by a Qualified Professional with competency in the operation and maintenance of OWTS and trained in these procedures.

3.0 Background Data

3.1 Prior to conducting the field performance inspection, all background information pertaining to the property and septic system shall be compiled and reviewed. This should include permit information, OWTS layout diagram, “As Built” drawings, prior inspection results, pumping records, etc.

3.2 The OWTS layout diagram must show the location of the septic tank and leachfield, the location of all buildings, decks, cutbanks, creeks, wells, reserve area, direction and percentage of slope, and any other conditions that may affect the operation of the OWTS. If a reserve area is not specified or if any proposed construction encroaches upon it, a new reserve area must be identified. The evaluation must address system performance during wet weather conditions as well as dry weather conditions.

4.0 Initial Site Evaluation

4.1 The property should be walked to confirm the location of the septic tank, leach field and other

pertinent features of the OWTS. In verifying leach field location, the length of each line and depth of drainpipe (below ground surface) shall also be determined. This may require probing with pressurized water, a metal rod, excavation, or other approved method.

4.2 The septic tank and leach field areas should be checked for any obvious signs of existing system problems such as surfacing effluent, odors, graywater bypasses, lush vegetation in leach field area, or any other condition that may suggest an existing or impending problem. If the dispersal system has dual leach fields, the diversion valve shall be located and checked to see if it is functional and to determine which leach field is in service. All observations, including both problem conditions and no problem conditions, must be noted.

4.3 Where dispersal systems may not meet current separation requirements to groundwater, a hand-augured or drilled boring (3-inch minimum diameter) shall also be installed alongside (but not within) the leach field area for observation of groundwater conditions. An initial reading to depth to water from ground surface shall be taken at the time of boring installation. The boring shall be left open for the remainder of the performance inspection to allow for the water level to stabilize for a minimum of 1-hour and for a final reading to be taken. The boring shall be backfilled before leaving the site.

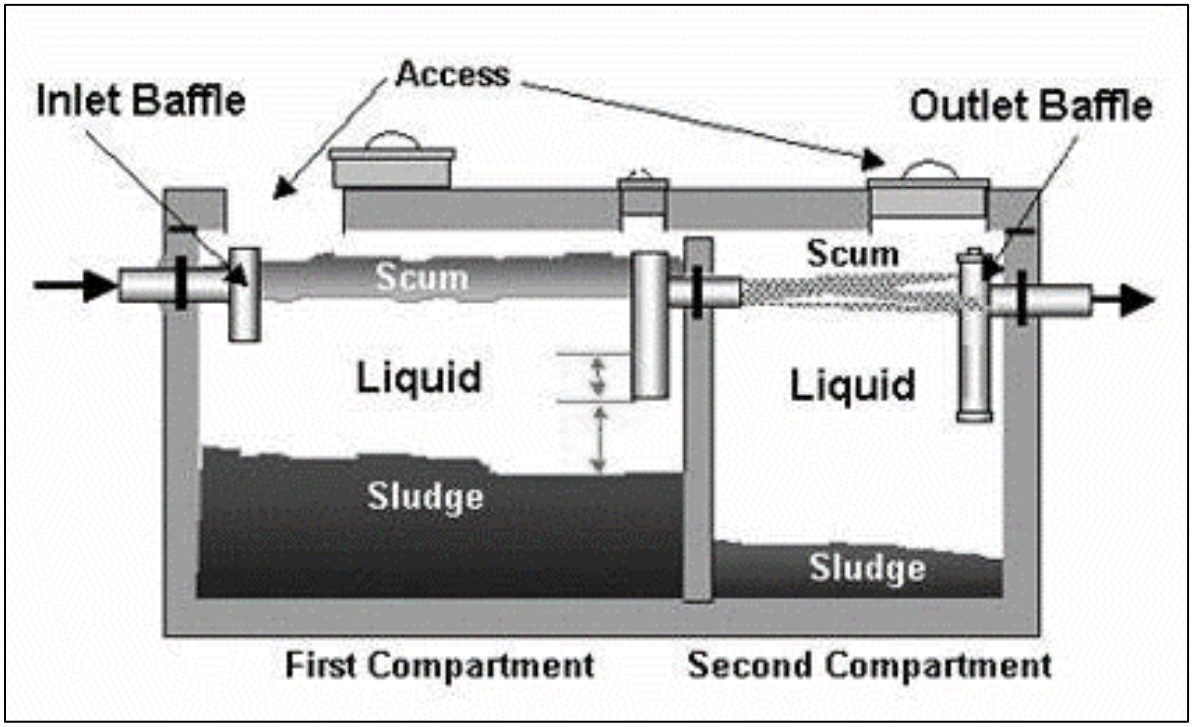
5.0 Septic Tank Inspection

5.1 Access Risers: the septic tank shall be located and determine if permanent access risers have been installed. If the tank is equipped with risers, observe and document the general condition. Ideally, the risers should be properly grouted to the top of the septic tank to prevent groundwater and/or surface water intrusion. The lids of the risers should also be properly sealed to prevent odors and the entry of insects. Any observed defects in the access risers shall be noted. Where there are no access risers installed, the property owner shall be provided information about access risers and may be required to install them.

5.2 The septic tank lids shall be carefully removed with as little disturbance to the existing landscape as possible. Once the tank is open, the structural condition of the septic tank, including signs of cracking, flaking, and pitting, or other structural defects, shall be observed and documented. A steel rod may be used to probe the walls and bottom of the tank. The pumping of the tank may not be necessary to perform this procedure. The inlet and outlet sanitary tees must also be inspected to assure they are in satisfactory condition, properly positions, and free of scum accumulation, rocks, root matter or other obstructions. The condition should be noted. Additional testing to verify the structural integrity of the septic tank may be required.

5.3 The liquid level in the tank should be measured with respect to the outlet pipe. In a properly functioning system, the level in the tank should be even with the invert (i.e., bottom of the outlet pipe-see Figure 1). If the liquid level is below the outlet pipe, the tank is leaking. If the liquid level is above the outlet pipe, the leach field is either flooded or obstructed. The depth of the wastewater above or below the outlet pipe must be measured and noted.

Figure 1-Typical Septic



5.4 The capacity of the septic tank (in gallons) shall be determined from manufacturer's specifications, if known, or from measurements of the width, length, and depth (below outlet pipe) of the tank. The capacity shall then be compared with the water use/wastewater flow rates for the property. A minimum septic capacity of three (3) times the maximum expected daily wastewater flow is considered adequate for an existing OWTS. Additional septic tank capacity may be required.

6.0 Hydraulic Load Test-Septic Tank

6.1 General: This test is conducted only for standard gravity-fed leach fields and does not apply if the OWTS uses a pump. A separate test is conducted for pump systems. The hydraulic load test is conducted by surcharging the septic tank with about 150 gallons of water over a 20–30-minute period, then observing the rise of water in the tank and the subsequent draining process. Tracer dye may be used to assist in observing leachfield failure. A garden hose discharging into the outlet side of the tank can be used to surcharge the tank. The hose outlet should remain well above the wastewater level in the tank to prevent cross contamination. Before starting the test, the flow rate from the hose should be determined (i.e., with a 5-gallon bucket and stopwatch) to properly gauge the amount of surcharge water added to the tank. Alternatively, a portable water meter can be installed between the house faucet and the hose to directly measure the water volume added.

6.2 Test Procedures: The step-by-step procedures for the hydraulic load test are provided below:

6.2.1 Measure the location of the static wastewater line in the septic tank at the outlet side as an initial

reference point.

6.2.2 Begin surcharging the tank with water to start the hydraulic load test. Note the time of the start of the surcharge.

6.2.3 Observe and record the time and any rise in the liquid level at the outlet pipe reference point during the filling and the time and the wastewater level at the end of the filling. Typically, the liquid level will rise from 0.5 to 1-inch, at which point the liquid level should stabilize for the remainder of the filling, then return to the initial level in a matter of minutes after filling is stopped.

6.2.4 After the filling cycle is finished, the wastewater level decline in the septic tank is observed until the initial level is reached, and the time to achieve this is recorded. If the initial level is not attained within 30-minutes, the test is terminated, and the final wastewater level is noted.

7.0 System Rating

Based on the water level reading during the test, a hydraulic performance rating is assigned to the system in accordance with guidelines provided in Table 1.

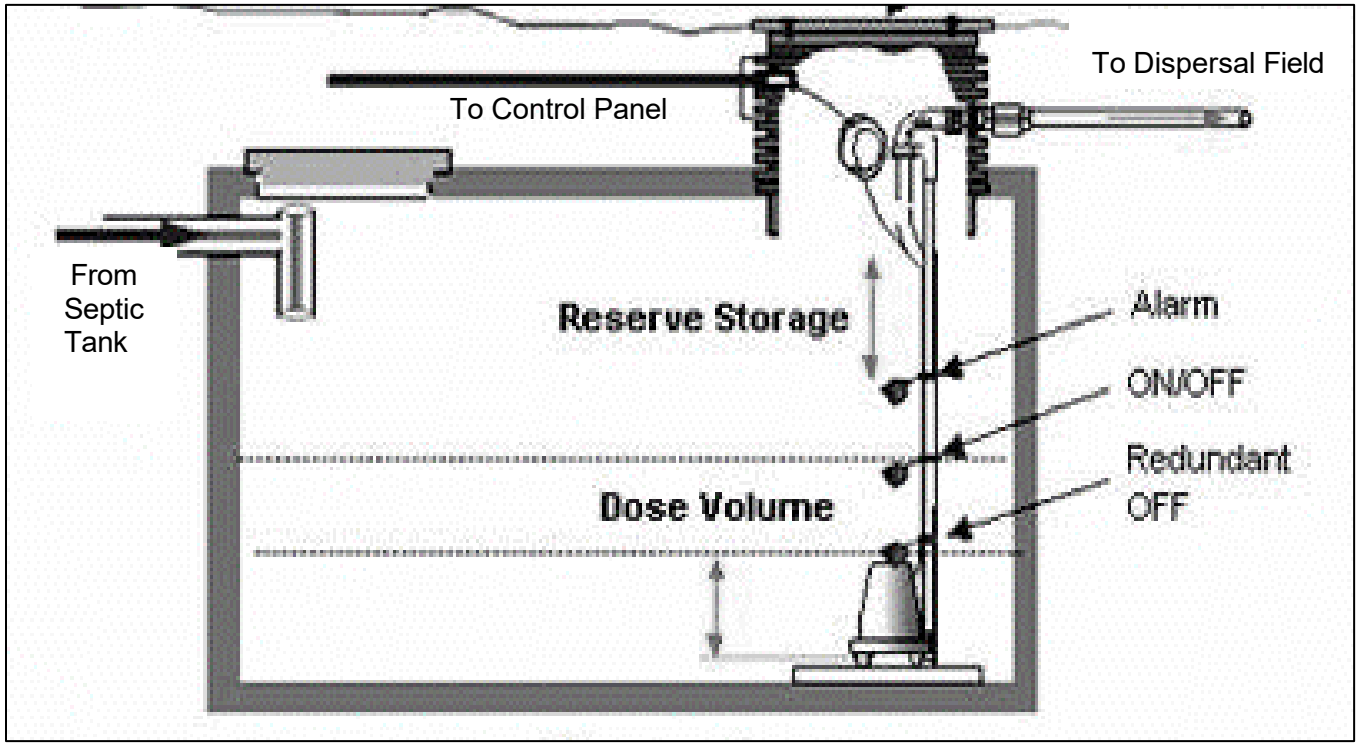
Table 1: Hydraulic Load Test Rating Guidelines

Rating	Septic Tank Response to Hydraulic Loading
Excellent	No noticeable rise in water level during filling.
Good	Maximum water level rise of about 1-inch, with rapid decline to initial level within 5-minutes after end of filling.
Satisfactory	Maximum water level rise of about 2-inches, with decline to initial level within about 15-minutes after end of filling.
Marginal	Water level rise of more than 3-inches, with decline to initial level within about 30-minutes after end of filling.
Poor	Water level rise of more than 3-inches, with decline not reaching initial level within 30-minutes after end of filling
Failed	Water level rise of more than 3-inches, with no noticeable decline within 30-minutes after end of filling.

8.0 Hydraulic Load Test-Pump Systems

8.1 General: For systems equipped with an effluent pump, the following inspection procedures are followed. Figure 2 provides a diagram of a typical pump system installation for reference. Remove the pump access cover and tank lid, taking care that no soil or other material enters the tank. Note any signs of scum or sludge buildup, indications of previous pump failure (such as scum line above the highwater alarm switch), or evidence of soil or roots entering the tank. Also, inspect the float controls to see that they have fee movement, and check the electrical junction box (if located in the tank or access riser) for any obvious signs of corrosion. If the water level in the basin is normal (i.e., between the high and low water controls) proceed with testing of the pump systems.

Figure 2-Typical Pump Tank



8.2 Test Procedures: The step-by-step procedures for the hydraulic load test are provided below.

8.2.1 The pump test is conducted by adding sufficient water to the tank to activate the pump "on" control and observing the performance of the system over at least one pumping cycle. The total amount of water added should be about 150 gallons, to approximate the same hydraulic loading of the leachfield as for gravity systems. Using a garden hose, the water may be added to the outlet side of the septic tank, or directly to the pump tank. If filling the pump tank directly, care should be taken to minimize turbulence and disturbance of sediment or sludge that may have collected in the basin. This can be best accomplished by directing the stream of water against the interior side of the chamber, rather than directly toward the bottom of the pump chamber.

8.2.2 Observe the filling of the tank, measure and document the point at which the pump is activated. Immediately stop the filling operation and observe the pumping cycle until the pump shuts-off. While the pump is discharging, examine the piping system for any leaks. Even small leaks could be a forewarning of possible breaks in the pressure line at some point in the future; and these should be corrected as soon as possible. Measure and document the depth at which the pump shuts-off and calculate the volume of water between the "on" and "off" measurements. Compare this does with the design dose volume specified for the system. If the dose is too high or too low, float controls should be repaired/ adjusted by a licensed and properly qualified contractor. DEHQ may issue a notice for corrective action.

The pumping cycle (from "on" to "off") levels should be timed and the results recorded on the inspection

form. Typically, if the pump is sized and operating properly, pump operation lasts 1-5 minutes per dose. Pump cycles lasting longer than this may indicated leachfield clogging and/or pump deficiencies. If this is observed, it must be documented and further investigation of the pump and leachfield should be conducted to determine the specific cause.

If during filling of the basin, the pump does not activate when the water reaches the high liquid level control (i.e., “on” float), discontinue the pump test. This indicates a pump failure, defective float switch or wiring problems and will require by a licensed and properly qualified contractor. The pump system failure must be documented and communicated immediately to the owner/ resident. DEHQ may issue a notice for corrective action.

9.0 Final Leachfield Inspection

At the completion of the hydraulic load test at the septic tank or the pump tank, the dispersal field area and downslope areas are checked again for indications of surfacing effluent, wetness, or odors. If any of these conditions exist at the conclusion of the hydraulic load test, this shall be considered conclusive evidence of system failure. If the field observations of wetness are not obviously the result of the hydraulic load test, further investigation may be necessary to determine if the dispersal field is failing and the cause of the failure. The cause of the seepage may be related to gopher holes, site drainage or erosion problems, excessive water use or the age of the system.

9.1 Inspection and Testing Completion

9.1.1 All inspection and testing procedures and field activities must be fully documented.

9.1.2 All access lids and risers must be replaced and secured before leaving the site.

9.1.3 Test results indicating surfacing effluent must be reported to DEHQ immediately and action must be taken to immediately mitigate the surfacing effluent (i.e., pumping of tank by registered pumper). Repairs to correct the OWTS must be initiated as soon as feasible under a permit issued by DEHQ.

APPENDIX IV
ALTERNATIVE TOILET MINIMUM REQUIREMENTS

Minimum plumbing facilities, including requirements for the location and number of water closets and hand washing facilities, are determined by provisions in the County Plumbing Code and California Code of Regulations, Title 8, Subchapter 7, Group 2 and Group 3. A water closet is defined as a plumbing fixture (used for both solid and liquids wastes) in which the waste matter is removed by flushing with water. Alternative toilets that do not use water for flushing are not approved for use where one or more water closet(s) is required.

1.0 Temporary Holding Tank Requirements

1.1 A holding tank may be permitted in lieu of an OWTS if public sewer is not available, an OWTS is not practicable; and the Director determines that the property will be able to connect to public sewer within 24 months of the permit application.

1.2 A permit is required to install temporary holding tanks and is valid for 24 months. The Director may grant one extension for up to an additional 12 months if it is determined the holding tank is being properly maintained and the property owner has been unable to connect with the sewer through no fault of the property owner.

1.3 A licensed installer or an Owner-Builder applying for a permit to install a sewage holding tank shall complete an application form provided by DEHQ and submit with the following information.

1.3.1 Holding tank schematic and specifications, including materials of construction, tank certification information, tank volume and dimensions, and venting provisions.

1.3.2 Plot plan or drawing of parcel showing the location of wells, structures, sanitary sewer lines, and water lines, the proposed location of the tank, distance to any setback features, and accessibility for pumping.

1.3.3 Total daily peak flow calculations from all plumbing facilities, the volume of flow for the number of days between expected pumping events.

1.3.4 The total design capacity of the holding tank to include the volume required for the number of days expected between pumping events (minimum of seven days) plus a minimum of seven days capacity required for reserve capacity (minimum total capacity of 14 days).

1.3.5 The pumping frequency required to maintain the system at a level below the alarm set points.

1.3.6 Alarm schematics and specifications.

1.3.7 Piping construction and configuration.

1.3.8 Methods of securing the tank and access points.

1.4 A back-flow prevention device must be installed on any water supply located within 50 feet of the holding tank.

1.5 The holding tank shall only be cleaned and pumped, and the waste disposed of, by a business registered pursuant to section 117420 of the California Health and Safety Code. Before a permit is issued for the installation of the holding tank system, the owner of the system must submit a copy of the service contract with a licensed sewage pumping company.

1.6 Operational records, including pumping receipts and alarm maintenance records, must be maintained by the owner and provide to DEHQ upon request.

1.7 Holding tanks shall meet the setbacks set forth in this LAMP for septic tanks.

1.8 Holding tanks shall be constructed of approved sound, durable materials not subject to excessive corrosion or decay and shall be watertight. Each tank shall be structurally designed to withstand all anticipated earth or other loads and shall be installed level and on a solid bed. Holding tank materials must comply with those for septic tanks in the LAMP.

1.9 The liquid holding design capacity shall be a minimum of seven (7) days of peak wastewater flow generation plus a minimum of seven days capacity required for reserve capacity. The tank shall have a minimum capacity of 1,500 gallons (represents a minimum capacity for 107 gallons per day peak wastewater flow).

1.10 The system shall be operated and maintained to prevent sewage overflow or leakage from the system at all times. The system shall not create any nuisance conditions. No person shall allow the contents of a holding tank to be discharged onto the surface of the ground, into storm water facilities, or threaten or impact water quality of surface water bodies.

1.11 The system shall have both audible and visual alarms.

1.11.1 The alarms shall be set to signal at the “time to pump” level (minimum seven days capacity) and at a level indicating the waste is approaching the full capacity of the holding tank (maximum three fourths capacity).

1.11.2 The audible and visual alarms shall be located in an area that can be readily seen and heard, with battery power where electrical power is not available.

1.12 The holding tank shall be watertight and there shall be no discharge from the tank.

1.13 The holding tank shall be placed in an area with easy access for pumping.

1.14 No person shall allow the contents of a holding tank to be discharged onto the surface of the ground, into storm water facilities, or threaten or impact water quality of surface water bodies. No person shall use or maintain a holding tank that creates a health hazard, a nuisance condition, or that threatens or impacts a surface water body.

2.0 Vault Privy

2.1 A vault privy is a structure for disposal of human waste without the use of water. It consists of a shelter build above a subsurface vault into which human waste falls. The vault privy has no water connection.

2.2 Vault privies may be allowed for temporary or limited use areas, where primitive type picnic grounds, campsites, camps, and recreation areas are to be maintained, and when a septic tank and disposal field is not practicable as determined by DEHQ. The vault privy shall meet the minimum setback requirements as for septic tanks. Vault privies shall not be used for seasonal dwellings, commercial facilities, or single-family dwellings. Monitoring and an annual operating permit may be required to ensure protection of water quality.

2.3 The size and construction specifications of the vaulted privy shall be designed by a professional engineer licensed by the State of California and shall incorporate these standards. The design shall include, but is not limited to, provisions for the sizing of the vault and shelter elements, excavation and soil preparation for the vault, the selection of a precast vault or for in-place vault construction, construction of floor slab, seat risers, venting, cleanouts for removal of accumulated wastes, and housing or shelter for the privy.

2.4 Plans shall be submitted to DEHQ for review and approval. An installation permit shall be obtained for the installation of a vault privy. This permit is in addition to any building or other permit required by other agencies.

2.5 Materials and Construction. A vaulted privy shall incorporate the following features. These features are in addition to any other standards required by law. Where another standard is required by law, that standard shall apply.

2.5.1 A vault of sufficient capacity to serve the daily and long-term needs of users, shall be capable of withstanding all anticipated forces, and shall be of sufficient capacity to store wastes until serviced by a registered pumper. A vault shall be no less than 1000 gallons.

2.5.2 The vault must be designed to be inaccessible to rodents and insects. Interior floors, walls, ceilings, partitions, and doors shall prevent any entry of vermin.

2.5.3 A concrete floor slab, base, or vault lid on which the privy housing can be erected. Wood floors are not permitted.

2.5.4 The material around the privy base graded to divert surface water away from the vault.

2.5.5 Seat risers extending directly from the concrete base, or floor slab, and constructed of Impervious, easily cleanable material.

2.5.6 Comfortable, impervious and easily cleanable seats with tight-fitting lids which completely cover the privy seat hole when not in use. The seat opening shall be covered with attached, open-front toilet seats with lids, both of which can be raised to all use as a urinal. A toilet tissue holder shall be provided for each seat.

2.5.7 A privy housing structure that provides privacy and shelter and is fly-tight. The enclosing walls and roof must have no openings or cracks which are not sealed or screened. Structures shall be free of hazardous surface features, such as exposed nail points, splinters, sharp edges, and rough or broken boards, and shall provide privacy and protection form the elements. The housing shall be finished in a light color.

2.5.8 A tight-fitting door which is equipped with a self-closing device.

2.5.9 Vents, windows, or openings which are completely screened. Building ventilation of a minimum of three (3) square feet shall be equally divided between the bottom and top halves of the room. All vents shall be screened with 16 mesh screening of durable material.

2.5.10 Vaults shall be vented to the outside atmosphere by a flue or vent duct having a minimum inside diameter of four (4) inches, extend from the privy vault to a point at least one (1) foot above the roof peak, and is screened at the outlet and capped to divert precipitation. A deodorant may be added routinely to the vault chambers to control odors.

2.5.11 A properly sloped roof of impervious material, with an overhang to prevent ponding of water and leakage into the structure.

2.5.12 Adequate illumination of the privy interior from natural or artificial sources.

2.5.13 A minimum of 16 square feet of floor space provided for a single seat sanitary privy. Multiple-seat privies to provide 12 square feet of floor space for each seat or urinal to be installed. User privacy, through the installation of privacy partitions around the structure or by use of inside door latches.

2.5.14 Vaulted privies must provide an adequate number of seats to serve the number of visitors and the type of activity at the site. A ratio of one privy seat for each 15 visitors of each sex, with a minimum of one unit for each sex in common use facilities, is normally adequate. Sanitation facilities for use by employees must meet the requirements of California Code of Regulations, Title 8.

2.5.15 Urinals may be substituted for men's privy seats on the basis of one urinal for one toilet seat up to a minimum of one-third of the required toilet seats.

2.5.16 The risers to support the privy seats must extend at least 13 inches above the privy floor slab but

should not have a height of greater than 18 inches. In multiple-seat privies the seats must have a center-to-center separation of not less than 2.5 feet.

2.6 Maintenance Requirements.

2.6.1 No water-carried sewage shall be placed in vault privies. Vault privies shall be maintained in a sanitary manner and in good repair at all times to prevent health hazards, nuisance conditions, and pollution of surface waters. The vault shall not be allowed to become filled with excreta to a point within two (2) feet of the ground surface. The excreta in the vault shall be removed as necessary to fulfill these requirements.

2.6.2 The vault shall only be cleaned and pumped, and the waste disposed of, by a business registered pursuant to section 117420 of the California Health and Safety Code. The property owner shall maintain pumping records and provide to DEHQ upon request or as required by an annual operating permit. The privy shall be maintained in a sanitary condition and in good repair at all times. Vault privies shall be located in an area accessible for pumping by a registered septic pumper.

2.6.3 No person shall allow the contents of vault privies to be discharged onto the surface of the ground, into storm water facilities, or threaten or impact water quality of surface water bodies.

3.0 Portable Chemical Toilets

3.1 A portable chemical toilet is any self-contained chemical toilet facility that is housed within a portable toilet shelter. The portable toilet has no direct water connection.

3.2 Portable toilets may be approved for temporary or limited use areas, such as construction sites for use by employees, and special events. Portable chemical toilets shall meet the minimum setback requirements as for septic tanks. Portable chemical toilets shall not be allowed for seasonal dwellings or single-family dwellings or commercial facilities that are not limited use or remote where the installation of an OWTS would be impracticable. Chemical toilets shall not be proposed for use in lieu of a required water closet.

3.3 Materials and Construction. Chemical toilets shall incorporate the following features. These features are in addition to any other standards required by law. Where another standard is required by law, that standard shall apply.

3.3.1 Chemical toilet facilities shall provide sufficient space for comfortable use. A minimum area of eight (8) square feet, with a minimum width of two and one half (2½) feet, shall be provided for each toilet seat. A minimum area of ten (10) square feet, with a minimum of two and one half (2½) square feet shall be required when a urinal is included. Sufficient additional space shall be included if hand-washing facilities are within the facility.

3.3.2 Toilets shall be designed, constructed, and maintained so as to prevent the access of flies and vermin, and of flies to the excreta.

3.3.3 The inside surfaces of all toilets shall be of durable, non-absorbent material and shall be smooth and easily cleanable. Toilets shall be maintained in a clean and sanitary manner, free of odor, soilage, and stains at all times.

3.3.4 The toilets shall be ventilated and provided with self-closing doors, lockable from the inside.

3.3.5 The tanks for chemical toilets shall be constructed of durable, easily cleanable material. Tank size shall be sufficient to contain the initial chemical charge and provide capacity for at least one day's use for forty persons. Size and construction shall be such as to prevent splashing on the occupant and on the ground surface while being transported. A minimum tank capacity of 40 gallons shall be installed in the toilet.

3.3.6 Chemicals capable of controlling odors and liquefying solids shall be used in chemical toilets.

3.3.7 The removal and disposal of contents of chemical toilets shall be by a registered septic pumper to a water pollution control plant that is approved to accept the waste. Records of disposal shall be maintained by the chemical toilet owner and provided to DEHQ upon request.

3.3.8 Each chemical toilet shall be identified with the name and phone number of the business responsible for servicing them.

3.4 Maintenance Requirements.

3.4.1 Chemical toilets shall be maintained in a sanitary condition and in good repair at all times. Chemical toilets shall be maintained, and the excreta shall be removed as necessary to prevent a health hazard or nuisance conditions.

3.4.2 The chemical toilet shall only be cleaned and pumped, and the waste disposed of, by a business registered pursuant to section 117420 of the California Health and Safety Code. The chemical toilet owner shall maintain pumping records and provide to DEHQ upon request.

3.4.3 No person shall allow the contents of chemical toilets to be discharged onto the surface of the ground, into storm water facilities, or threaten or impact water quality of surface water bodies.

4.0 **Composting Toilets**

4.1 A composting toilet may be approved for a campsite, park or trail, when no public sewer is available, no water connection is available, and the installation of an OWTS or vaulted privy is impracticable. A composting toilet shall not be approved for any structure with plumbing fixtures served by or that can be served by a water supply and shall not be proposed for use in lieu of a required water closet. Composting toilets are not an approved means of wastewater management to address a defective OWTS.

4.2 All composting toilets shall meet NSF/ANSI Standard 41: Non-Liquid Saturated Treatment System and shall have the NSF mark. NSF-certified systems should be verified to meet six requirements: 1) The toilet system can handle the stated capacity for an extended period plus occasional overload. 2) The toilet system has no offensive odors. 3) The composted output has been demonstrated to meet specific bacterial content levels. 4) Advertising, literature, and labeling are not misleading. 5) Products undergoing testing are not accessible to the manufacturer. 6) Lab test results are confirmed by parallel testing of toilet systems operating in the field.

4.3 Composting toilets shall be installed, maintained, and used in accordance with the manufacturer's specifications and any local, state, or federal laws or regulations, and shall not create any health hazard, nuisance conditions, or threaten or impact the water quality of surface water bodies.

4.3 No residual waste resulting from the use of a composting toilet shall be used as a soil amendment or fertilizer or disposed where persons or animals may come into contact with such waste. Disposal shall be at a facility, such as a sanitary landfill, transfer station, or other approved facility, that is permitted to take such material.

4.4 No person shall use or maintain a composting toilet that is not in compliance with these standards or that creates a health hazard, nuisance condition, or threaten or impact water quality of surface water bodies.

APPENDIX V
TEST BORING CONSTRUCTION STANDARDS

1.0 Test borings installed under the percolation test permit for the purpose of ongoing monitoring beyond the typical soil profile/percolation testing activities associated with an initial site evaluation shall meet the following requirements:

1.1 The boring shall be six (6) inches in diameter drilled to the appropriate depth.

1.2 A 2-inch perforated pipe shall be installed from the bottom of the borehole to the level below grade where groundwater may be expected. Non-perforated pipe shall be installed for the remainder of the borehole and shall extend two (2) feet above grade. Care should be taken to not introduce foreign substances or soil into the borehole during placement of the pipe.

1.3 Taking care to avoid bridging, pea gravel shall be added from the bottom of the borehole to a minimum of six (6) inches above the perforated pipe.

1.4 A minimum of six (6) inches of transition seal of bentonite or other approved material shall be placed in the annular space between the pea gravel and cement annular seal. Potable water shall be added to the bentonite transition seal where it exists in dry form allowing sufficient time for the bentonite to properly hydrate prior to the placement of the neat cement annular seal.

1.5 The annular space from the top of the bentonite transition seal to ground surface shall be sealed with neat cement.

1.6 Neat cement shall be mixed thoroughly at a ratio of one 94-pound sack of Portland cement to 5-6 gallons of potable water.

1.7 The annular seal shall extend above ground surface, be sloped away from the pipe and shall be of such construction to prevent entrance of surface water, pollutants, contaminants, and prevent unauthorized access.

1.8 The top of the casing shall be fitted with a secured, watertight cap.

1.9 The test boring shall be marked sufficiently to protect from damage and to be easily located. Barricades or barriers may be required, if necessary, to protect the test boring.

2.0 The test boring shall be destroyed under permit from DEHQ by complete removal of casing and filling the remaining open borehole with neat cement or by filling the casing with neat cement from bottom to one to three feet below grade. The casing shall be cut off below grade and the neat cement shall be brought up over the end of the pipe and into the excavation for a complete seal.