

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

REVISED PROJECT APPLICATION FORM

Name of Project: The Septic System Maintenance and Best Management Practices Rebate Program

Project Applicant: Mission Resource Conservation District

Applicant Contact Person: Courtney Provo

Applicant Phone Number: (760) 728-1332

Applicant E-mail Address: courtney@missionrcd.org

Eligibility Requirements:

The Septic System Maintenance and Best Management Practices Rebate Program will address the priority of implementing or furthering recovery of streams, wetlands, and riparian systems. The project will accomplish the furthering of recovery of streams, wetlands and riparian systems, by reducing the amount of nutrients, Total Nitrogen and Total Phosphorus, and bacteria that are entering the San Luis Rey River and negatively impacting water quality.

Problem Statement:

The water quality in the San Luis Rey Watershed, in San Diego County, has been negatively impacted by bacteria (in the lower segment and mouth of the river) and nutrients, including Nitrogen, Phosphorus, and TDS, in the lower and upper segments of the river. A Bacteria TMDL is in place for the lower segment of the river and the upper and lower segments have been placed on the 303(d) list for Nitrogen and Phosphorus. Prioritization, potential sources, and potential strategies to address these High Priority Water Quality Condition (HPWQC) and Priority Water Quality Conditions (PWQCs) can be found in the San Luis Rey River Watershed Management Area Water Quality Improvement Plan (WQIP) (revised March 2016). The SLR WQIP can be found at the Project Clean Water website at <http://www.projectcleanwater.org/images/stories/Docs/San-Luis-Rey/WQIP/00%20SLR%20WQIP.March%202016.pdf> (~77 MB).

The potential sources of bacteria (a HPWQC) and nutrients (PWQCs) listed in the WQIP include residential properties. Leaky failing septic systems were ranked as the 5th highest dry and wet weather bacteria source. Residential land uses have also been identified as a potential source for bacteria and nutrients into the waterways. Suggested strategies, in the SLR WQIP, for addressing the bacteria and nutrient sources on residential properties includes both structural and non-structural strategies. One of the optional, non-structural strategies that was identified by the County of San Diego was the development and implementation of a septic system rebate program to help cover the cost of inspecting and pumping a septic system as well as encouraging septic system care and maintenance. The Septic System Maintenance and BMP Implementation Program would satisfy this non-structural strategy.

The following Project Attributes are applicable to this Program as they can be answered in the affirmative:

Does the project improve conditions for a 303(d) limited segment or preserve conditions in a high quality water body? Yes, this project will help improve conditions for the upper and lower segments of the San Luis Rey River, which has been listed on the 303(d) list for Total Nitrogen and Total Phosphorus, and currently has a Bacteria TMDL.

Does the project address the source of the problem at/near the source of the problem? Yes, the project would address the source of the problem, on-site waste water treatment systems (septic systems), by encouraging maintenance and BMP implementation. The preventative efforts will also address the source of the problem as educating septic system owners on how to care for and maintain a healthy septic system will help prevent septic system technical failures.

Does the project propose measureable environmental outcomes? Yes, this project will be able to measure the amount of effluent that was pumped out of the participating properties' septic tanks, and the number of participating individuals and number of people residing in each residence will be recorded.

Does the project improve a designated priority listed in a Water Quality Improvement Plan? Yes, this project will improve the designated priority of bacteria that is listed in the SLR WQIP.

Does the project prove a cost-effective means of attaining water quality goals? Yes, as a Not-For-Enterprise District of the State, MRCD provides its services at a very cost-effective rate, as compared to private, for-profit businesses.

Does the project integrate outreach and education to targeted audiences? Yes, each Program participant will have to complete an on-line educational module and will learn how to properly care for and maintain his or her septic system.

Work Plan containing tasks and deliverables compartmentalized into partial funding opportunities, if applicable.

Mission Resource Conservation District (MRCD) will complete the Septic System Maintenance and Best Management Practices Rebate Program using the following methods:

Task 1.1 Update and Maintain the On-Line Educational Module

An On-Line Septic System Educational Module was developed for a Rebate Program for Rainbow Creek Watershed properties. This educational module was developed by MRCD and was linked to MRCD's website. The module includes information about septic systems, what they are, how they function, septic system BMPs, signs of septic system failure and septic system failure BMPs. The educational module also includes supplemental septic system educational material, including educational brochures and information sheets. The educational module begins with a pre-survey. As the program participant advances through the five sections of the module, each section ends with a quiz about the contents of

that section. Each participant must complete each quiz to advance to the next section. The educational module will need to be updated, modified and maintained for the course of this program. An example of the content and questions that would be found in the educational module (in hard-copy form) is attached to this application as the *Septic System Educational Module*.

Deliverables: A hard copy of the On-Line Septic System Educational Module.

Task 1.2 Program Publicity

The publicity campaign for the program will include press releases and advertisements in local newspapers and mailings to properties in targeted areas. Publicity efforts will also focus on informing the septic system haulers in San Diego County about the program, so they can disseminate the information to their customers.

Deliverables: Copies of all advertisements, press releases and the postcards mailed to targeted areas.

Task 1.3 Rebate Administration

A total of 200 rebates will be distributed to the Program participants. A total of 100 rebates per year will be distributed over the course of the Program. The rebates will be given on a first-come, first-serve basis.

Deliverables: Copies of the on-line module answers, the septic tank pumping receipt and rebate check for each Program participant.

Task 1.4 Program Reporting

Progress reports will be completed and submitted on a quarterly basis to document the progress of the Program. A Program Summary Report will be completed at the end of the program. The answers from the pre-survey and section quizzes can be compared and analyzed to ascertain what information was learned during the course of the educational module. The analysis of the survey and quizzes' answers will be included in the Program Summary Report.

Deliverables: Final Program Summary Report

Timeline (from funding approval) with milestones and end dates.

Task No.	Task	Program Year 1	Program Year 2
1.1	Update and Maintain On-line Educational Module		
1.2	Program Publicity		If needed
1.3	Rebate Administration		
1.4	Program Reporting		

Budget broken down into tasks.

			Program Budget	\$165,070.00
Task No.	Task	Hours	Salary or Price	
1.1	Update and Maintain On-line Septic System Educational Module		<i>Sub-Total</i>	\$11,750.00
	Mission RCD Representative	150	\$45.00	\$6,750.00
	IT Consultant	N/A	\$3,000.00	\$3,000.00
	Materials	N/A	\$2,000.00	\$2,000.00
1.2	Publicity of Rebate Program		<i>Sub-Total</i>	\$7,600.00
	Mission RCD Representative	80	\$45.00	\$3,600.00
	Materials	N/A	\$4,000.00	\$4,000.00
1.3	Administer Rebates		<i>Sub-Total</i>	\$134,200.00
	Mission RCD Representative	1200	\$45.00	\$54,000.00
	Rebates	200	\$400.00	\$80,000.00
	Materials	N/A	\$200.00	\$200.00
1.4	Rebate Program Reporting		<i>Sub-Total</i>	\$11,520.00
	Mission RCD Representative	256	\$45.00	\$11,520.00

Discuss all permitting requirements, including CEQA, and their status. If exempt, cite applicable statute.

The only permits that will be required for this Program are the septic tank pumping and hauling permits that will be held by the chosen septic haulers. The Program participants will be required to use one of the septic haulers that is permitted to work in the County of San Diego. This list of permitted septic haulers will be provided to the participants and will be obtained from the County of San Diego’s Department of Environmental Health.

Watershed(s) affected.

The Program would be implemented on properties within the San Luis Rey Watershed .

Describe if this project can be a basis for additional funding from other sources.

The Program can be a basis for additional funding from other sources as MRCD will be able to use the budget from this Program as match funds for similar projects. MRCD works extensively with many agencies and funding sources and the opportunity to use the funds from this Program as cost-share funds would greatly increase the opportunities for MRCD to find funding for other projects that would include Septic System BMP implementation.

Monitoring, success criteria, and other tools to track long-term success.

The success criteria for the Program will be the comparison of the results from the surveys completed prior to the participants completing the on-line educational module and the results of the surveys after they've completed the module. The high number of septic tanks that will be inspected and pumped during the course of the Program will be also be used as criteria of success.

Description of how the project is resilient to climate change.

Description of how the project is resilient to climate change.

The Program's efforts and results will be resilient to climate change in that the septic systems are not highly impacted by the changing climate.

Applicant's ability/authority to receive and distribute funds.

Under Division 9 of the State of California Public Resources Code, Resource Conservation Districts are authorized to receive and administer funds for work they are allowed to undertake, including but not limited to watershed projects.

The District has successfully managed and completed, and continues to manage, grants and funds from a wide variety of funding sources, including the Water Board. Other funding sources including the San Diego County Water Authority, County of San Diego, San Diego Integrated Regional Water Management, Wildlife Conservation Board, US Bureau of Reclamation, USDA Natural Resources Conservation Service, California Department of Fish & Wildlife, and San Diego Association of Governments TransNet Environmental Mitigation Program, among others.

The District has a consistent and proven track record of successfully utilizing program funds for their specified purposes both on time and on budget. The District is continually seeking funding to further its mission and goals and ensure that the projects undertaken are sustainable and provides lasting results that benefit the community and watershed health. The District has been operating since its conception in 1944 and maintains highly qualified staff members that have the capacity to complete the project, including the ability to accomplish the work and provide the products and reports expected under this application.

Is the project to conduct work that is required by any entity/agency? (e.g. cleanup or mitigation)

The project will not conduct work that is required by any entity/agency.

Septic System Rebate Program

Participant Information

Date: _____

Name: _____

Property Address: _____

City, State and Zip Code: _____

Mailing Address (if different): _____

City, State and Zip Code: _____

Phone Number: _____

Septic System Rebate Program

Pre-Survey

1. Do you live in a watershed?
 - a. Yes
 - b. No
 - c. I don't know
2. True or False: Water that enters storm drains is treated for pollutants prior to being discharged.
 - a. True
 - b. False
 - c. I don't know
3. How much do you think septic systems contribute to local waterway pollution?
 - a. Not at all
 - b. A little bit
 - c. Some of it
 - d. A great deal
 - e. All of the pollution is from septic systems
4. How often do you have your septic tank pumped?
 - a. Every year
 - b. Every other year
 - c. Every 3 to 5 years
 - d. Every 6 to 10 years
 - e. More than every 10 years
5. All of the following are best management practices for septic systems EXCEPT _____.
 - a. Having the system pumped regularly
 - b. Running showers and faucets as much as possible to flush the system
 - c. Diverting surface flow away from the leach field
 - d. Water conservation
6. The four main components of a typical septic system are a pipe from the home, a septic tank, a leach field, and _____.
 - a. An exit pipe
 - b. The soil
 - c. Anaerobic bacteria
7. All of the following items are okay to put in the septic system EXCEPT _____.
 - a. Household wastewater
 - b. Toilet paper
 - c. Pharmaceuticals and baby wipes

Please turn to next page to complete the pre-survey!

8. Septic system failures can occur for all of the following reasons EXCEPT ____.
- a. Broken pipes in the leach field
 - b. Having the tank pumped regularly
 - c. Blockage from non-dissolved solids
 - d. Excessive indoor water usage
9. Signs of septic system failure include ____.
- a. Slow draining pipes
 - b. Patches of unusually vibrant vegetation above the leach field
 - c. Sewage odors
 - d. All of the above
10. One septic system failure best management practice is ____.
- a. Conserving water until repairs are made
 - b. Covering exposed effluent with soil
 - c. Diverting pooling effluent into a trench

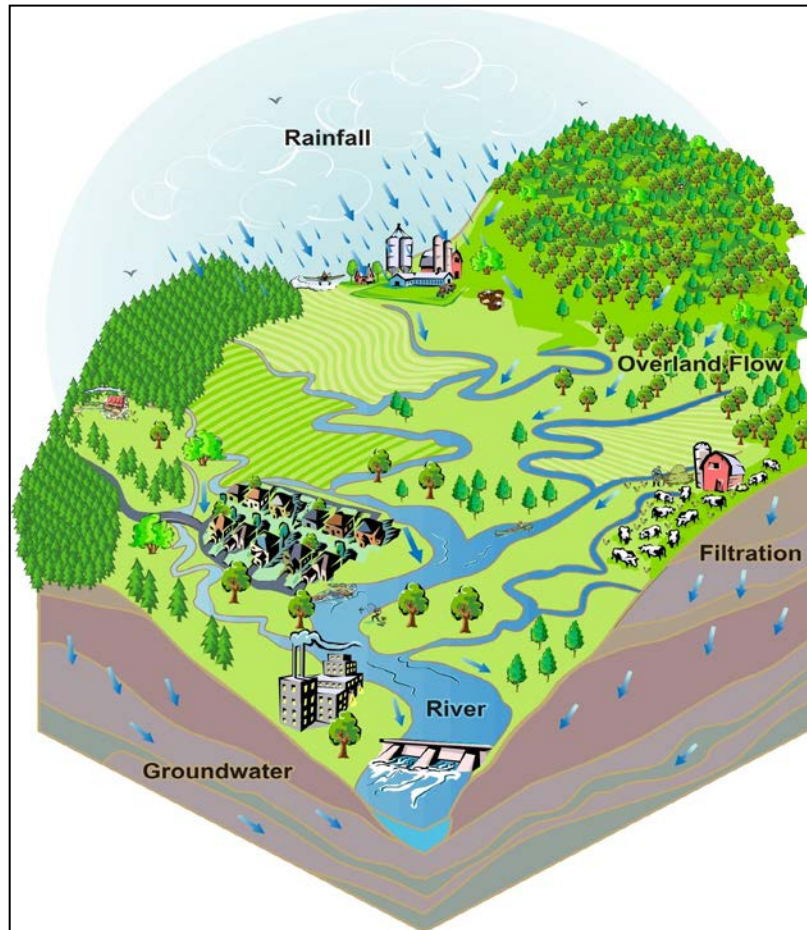
Septic System Rebate Program

Educational Module

Section 1 Waters and Watersheds

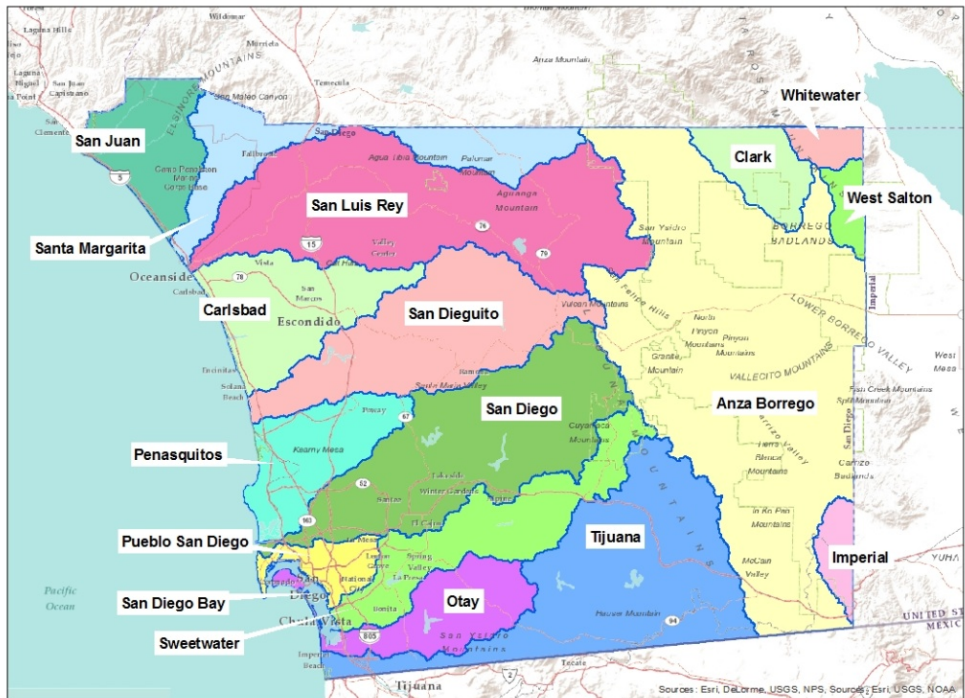
What is a watershed?

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. Watersheds act as funnels by collecting all the water within the area and channeling it to a single point, usually to a lake or ocean. In San Diego County, most watersheds drain to the Pacific Ocean.



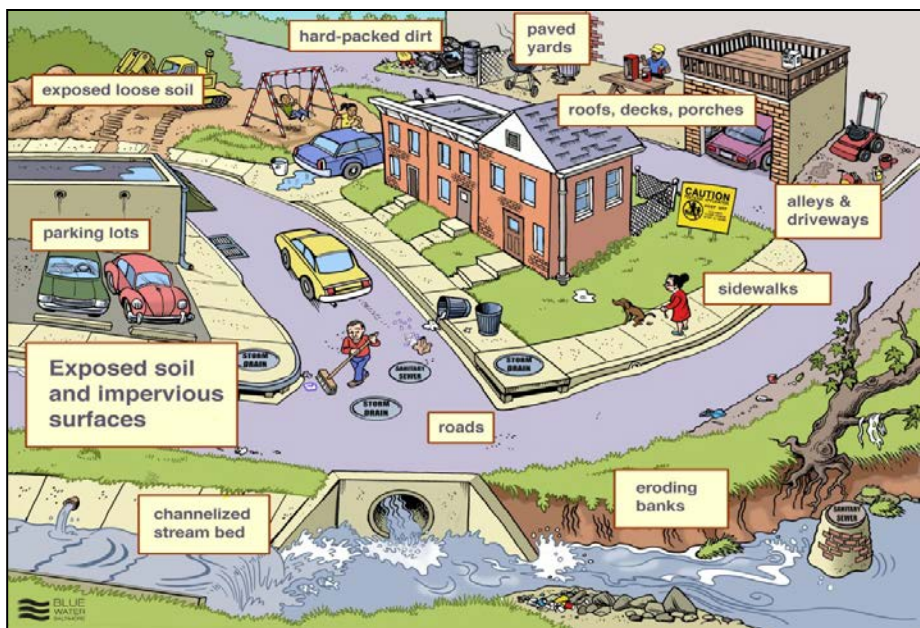
We all live in a watershed! What watershed do you live in?

Watersheds of San Diego County



Storm Drains & Runoff

When it rains, surface water flows into creeks, rivers, and storm drains. Runoff from rain events, landscape irrigation, and agricultural irrigation is not treated to remove pollutants. Water that runs into storm drains goes directly to surface waters (creeks, rivers and then a lake or an ocean), bypassing municipal treatment facilities.



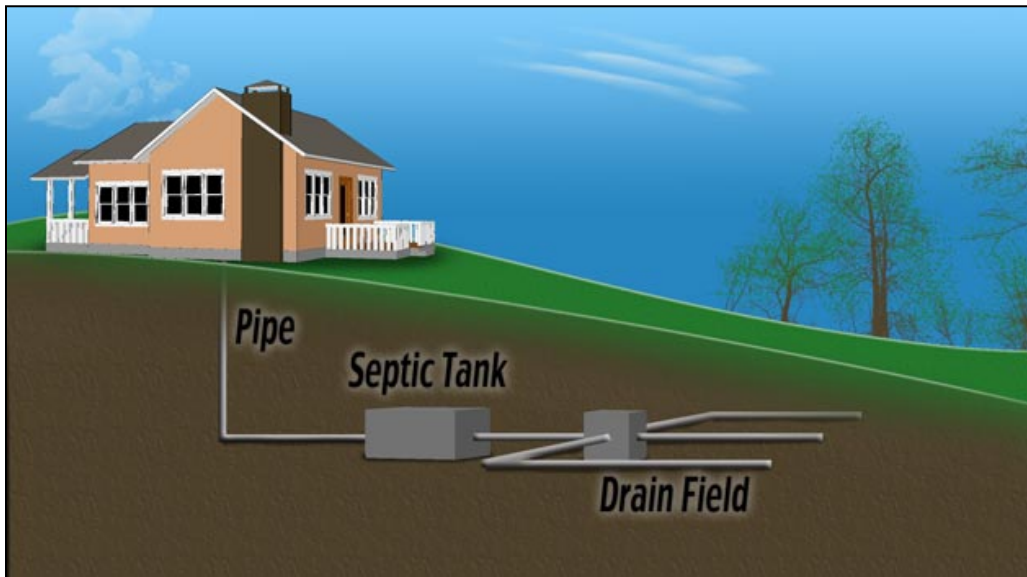
Section 1 Quiz

1. Do you live in a watershed?
 - a. Yes
 - b. No
 - c. I don't know
2. True or False: Water that enters storm drains is treated for pollutants prior to being discharged.
 - a. True
 - b. False
 - c. I don't know

Section 2 What is a septic system?

What is a septic system?

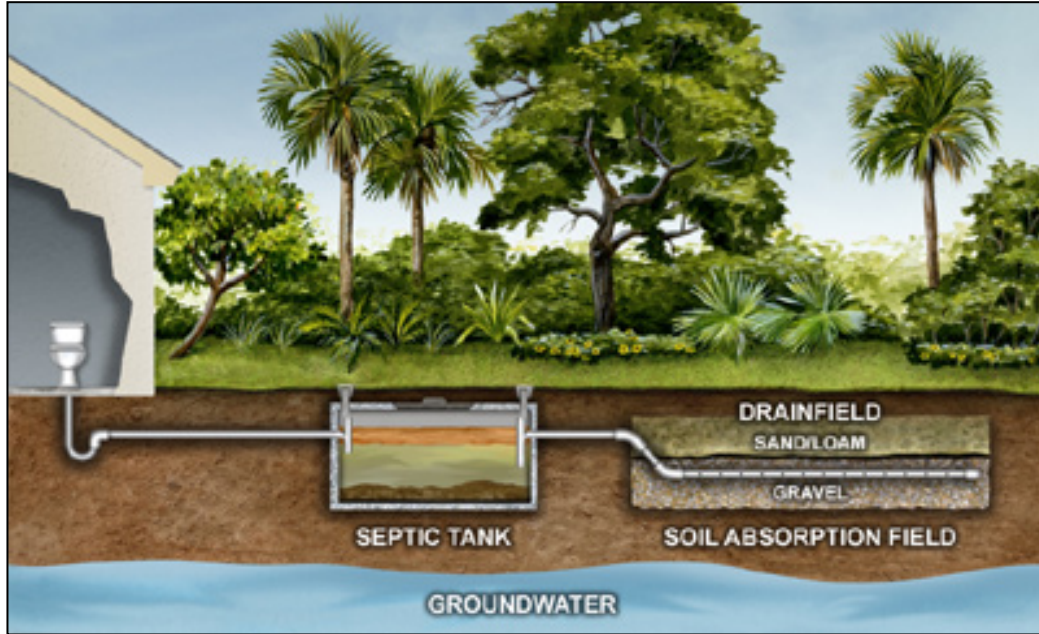
Wastewater from the home, including toilet, laundry, shower, and sink water, must be treated prior to being discharged. In municipalities where public sewer hookups are not available, septic systems are used.



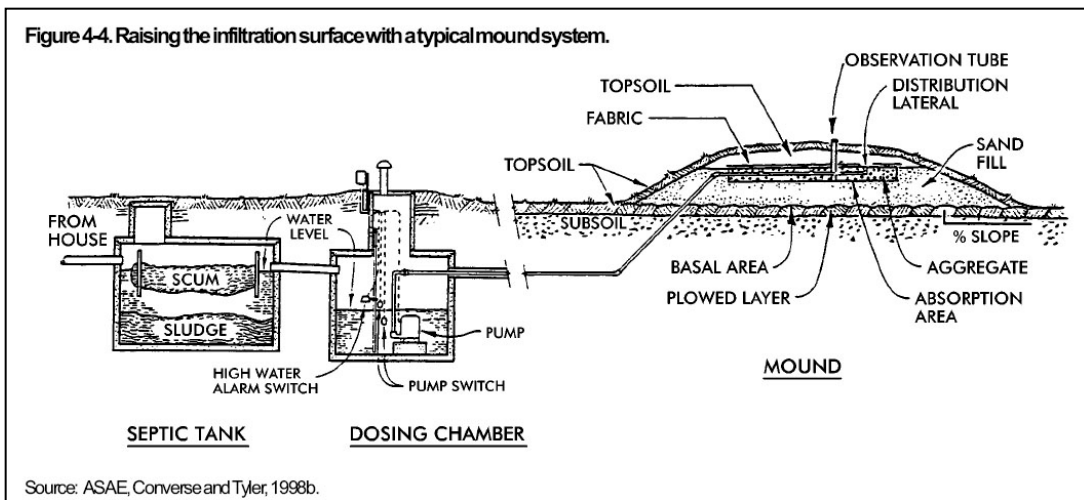
Different types of septic systems

There are two basic categories of septic systems: conventional and alternative systems.

Conventional systems include gravity distribution systems, which make use of gravity flow to drain wastewater from the house to the septic tank and leach field, and pressure systems, which utilize a pump to convey wastewater to a secondary tank that drains to the leach field.



In some areas, conventional septic systems may not be appropriate due to a high water table, improper soil type, or lack of soil depth. Alternative septic systems are generally more expensive to install and operate than conventional septic systems. There are several types of alternative septic systems including mound systems, biofilters, sand filters, and constructed wetlands. A mound system is pictured below. These systems are constructed using imported gravel and fill soil to create an elevated area where the partially treated wastewater from a septic tank can be discharged for further treatment within the mound.



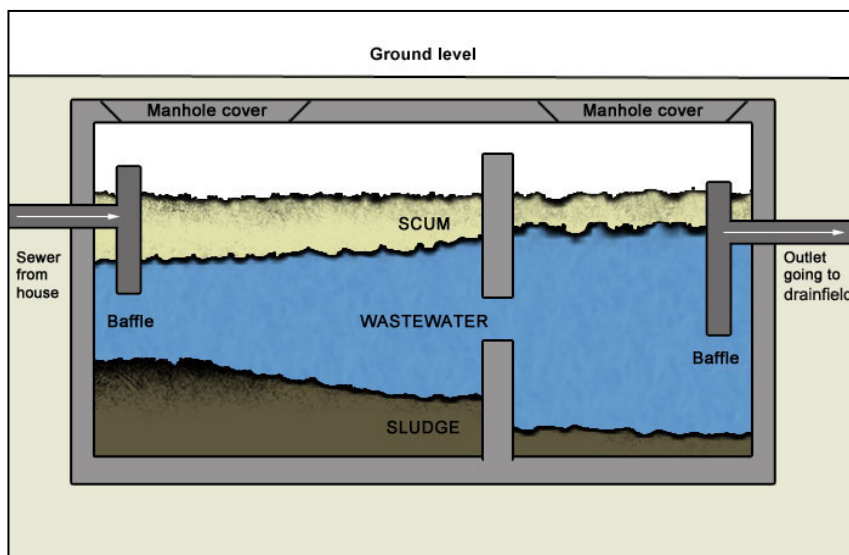
Section 2 Quiz

1. Conventional septic systems may employ which of the following designs?
 - a. Septic tank effluent gravity feeding to leach lines
 - b. Septic tank effluent pumped to another tank at a higher elevation that gravity feeds leach lines
 - c. A pipe from the house that discharges to a cesspool
2. True or False: Mound systems are an example of alternative septic systems that are appropriate for use in areas with a high water table.
 - a. True
 - b. False

Section 3 How a septic system functions

How a septic system treats wastewater

A typical septic system consists of four main components: the sewer pipe from the home, a septic tank, a leach field or seepage pit, and the soil. An underground pipe collects the wastewater discharged from the home's plumbing and connects to the septic tank inlet. The septic tank is typically made of concrete, fiberglass, or polyethylene, is buried, and is watertight. Wastewater entering the septic tank is collected and held long enough to allow solids to settle, forming a sludge layer on the bottom of the tank. Oil and grease separate, forming a scum layer that floats. The remainder of the wastewater, or effluent, forms a layer between the sludge and scum. Anaerobic bacteria, or bacteria that do not require air, work to decompose the solid waste in the septic tank. The effluent exits through a separate, T-shaped pipe that leads to the leach field. The design of the exit pipe prevents sludge and scum from leaving the tank. Leach lines are installed in gravel-filled trenches or seepage pits. These trenches/ pits must be at least five feet above seasonal high groundwater levels to ensure adequate treatment. Perforated pipes are placed in trenches in the leach field to allow for equal effluent distribution. Microorganisms in the soil aid in removing harmful bacteria, nutrients, and viruses from the effluent.



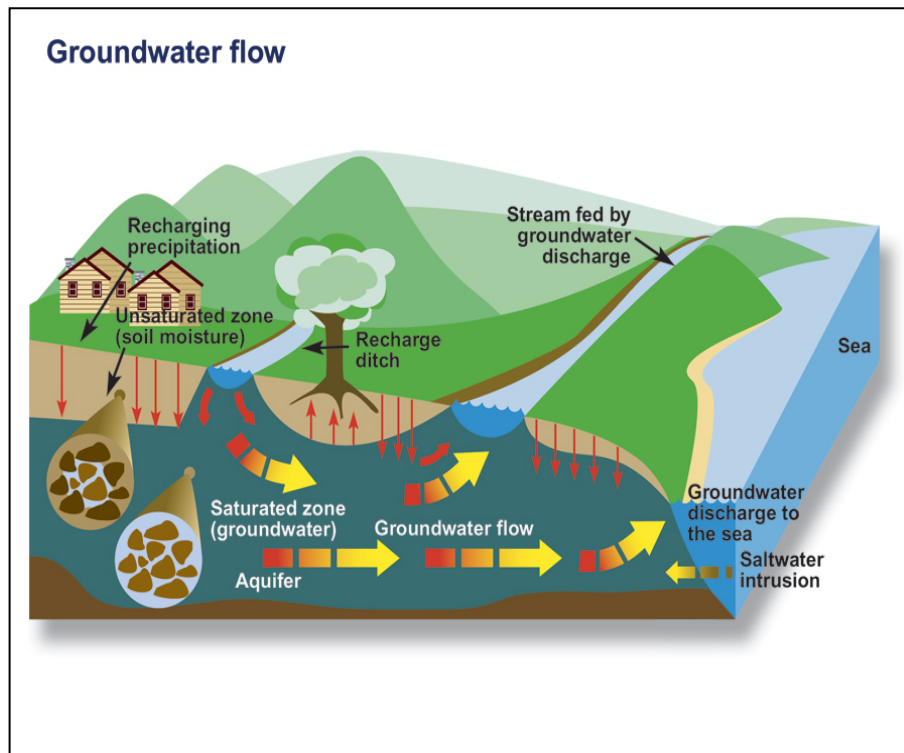
Section 3 Quiz

1. The four main components of a typical septic system are a pipe from the home, a septic tank, a leach field, and _____.
 - a. An exit pipe
 - b. The soil
 - c. Anaerobic bacteria
2. The scum layer is separated from the effluent and sludge layer in the septic tank and consists of which of the following?
 - a. Oil and grease
 - b. Wastewater
 - c. Solids
3. Which of the following best describes what happens once effluent enters the leach field in a properly functioning septic system?
 - a. It drains directly to streams, rivers, and lakes.
 - b. The soil holds effluent, creating an artificial pond.
 - c. Microorganisms in the soil aid in removing harmful bacteria, nutrients, and viruses.
4. Do you know where the septic tank and leach field are located on your property?
 - a. Yes, I know where both the septic tank and leach field are located
 - b. I know where the septic tank is located. I do not know where the leach field is located.
 - c. I know where the leach field is located. I do not know where the septic tank is located.
 - d. No, I do not know where the septic tank and leach field are located

Section 4 Keeping a septic system healthy

Groundwater levels

Groundwater, or the saturated zone beneath the soil surface, is an important resource that we all depend on. When water reaches the soil surface, it passes through an unsaturated zone of soil, where soil pores are filled partially with water and partially with air. As water moves down through the soil, it is filtered and impurities are removed. The water will eventually reach a saturated zone, where soil pores are completely filled with water. The boundary between the unsaturated zone and the saturated zone is known as the water table. The level of the water table can fluctuate greatly depending on the amount of water taken in (recharge) and the amount of water taken out (discharge). In some areas, the water table is only a few feet below the soil surface.



An improperly designed, installed, or maintained septic system can contribute to the contamination of groundwater. Harmful bacteria and nutrients, such as nitrates, can be a major threat to water resources; therefore, it is critical that your septic system functions properly.

Care & Maintenance Best Management Practices

A properly functioning septic system not only helps reduce groundwater contamination, but it can save the homeowner money. To help maintain your septic system, follow these simple best management practices (BMPs):

- Conserve water! Install low flow fixtures such as sink aerators and low water use toilets and limit the amount of time spent in the shower. Fix all leaks. By conserving water, you can help keep your septic system from overloading.
- Put only domestic wastewater down the drains! Do not dump chemicals, such as household cleaners and bleach, down your drains as they can affect the good bacteria that work in

conjunction with the septic system. Do not dump oil and grease into the system. Do not put non-biodegradable items down the drains. Limit the use of your garbage disposal.

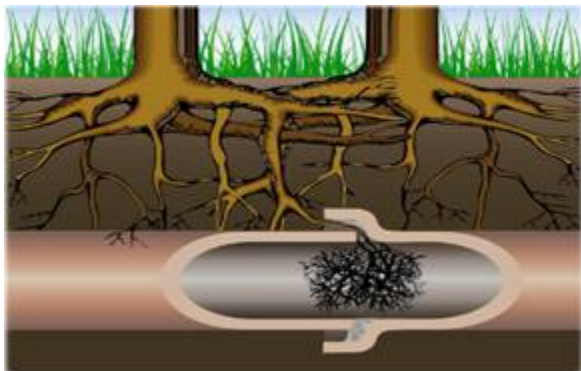
- Do not flush pharmaceuticals and unused medicines down the toilet.
-
- Have the septic system pumped regularly! How often the septic system is pumped is determined by the tank size and amount of people in the home. Regular pumping helps remove the accumulated sludge from the bottom of the septic tank.
- Maintain the leach field! Do not plant vegetation with extensive root systems over the leach field as roots can cause significant damage to pipes. Large trees such as eucalyptus, pine, pepper, and palm should not be planted within or adjacent to the leach field. Do not drive or build over the leach field. Do not allow heavy livestock animals in the leach field area.
- Divert surface flow away from the leach field! Too much water in the leach field will lead to oversaturation.



Regular septic tank pumping helps keep your septic system healthy and functioning!



Chemicals, including household cleaners and commercial septic tank additives, should never be put down the drains.



Roots can damage pipes. Never plant trees or other woody vegetation over your pipes.

Septic Tank Pumping Frequency

How often the septic tank is pumped is determined by the tank size and number of people residing in the home. Use the chart below to determine how often you should get your septic tank pumped. If you have guests or friends and family who regularly visit, you may need to have the septic tank pumped more often.

	Household Size—Number of Occupants									
	1	2	3	4	5	6	7	8	9	10
Septic Tank Size (# of bedrooms in the house)	Years									
1000 gal (1 to 3 bedrooms)	12.4	5.9	3.7	2.6	2.0	1.5	1.2	1.0	0.8	0.7
1250 gal (1 to 4 bedrooms)	15.6	7.5	4.8	3.4	2.6	2.0	1.7	1.4	1.2	1.0
1500 gal (1 to 6 bedrooms)	18.9	9.1	5.9	4.2	3.3	2.6	2.1	1.8	1.5	1.3
2000 gal (1 to 7 bedrooms)	25.4	12.4	8.0	5.9	4.5	3.7	3.1	2.6	2.2	2.0

*For example, a family of four with a 1,000 gallon septic tank should have the tank pumped every 2.6 years.

Section 4 Quiz

1. True or False: The groundwater table can rise to within one to two feet below the surface.
 - a. True
 - b. False
2. All of the following are best management practices for septic systems EXCEPT _____.
 - a. Having the system pumped regularly
 - b. Running showers and faucets as much as possible to flush the system
 - c. Diverting surface flow away from the leach field
3. All of the following items are okay to put in the septic system EXCEPT _____.
 - a. Household wastewater
 - b. Toilet paper
 - c. Pharmaceuticals and baby wipes
4. From when your septic system was last pumped until the present time, how many people, on average, have lived in the house?
 - a. One
 - b. Two
 - c. Three to Four
 - d. Five to Six
 - e. More than Six

5. How often do you have plan on having your septic tank pumped?
- a. Every year
 - b. Every other year
 - c. Every 3 to 5 years
 - d. Every 6 to 10 years
 - e. More than every 10 years

Section 5 Potential Problems

Signs of septic system failure

Septic system failure may occur for a variety of reasons. Two of the most common reasons for septic system failure include blockages or clogging from undissolved solids and broken pipelines in the leach field. Blockages and clogging generally occur when solids in the wastewater do not settle completely in the septic tank and are flushed into the leach field. This condition can occur when high volumes of wastewater force sludge out of the septic tank or when the septic tank is not pumped at the recommended frequency and sludge builds up inside the tank.

Broken pipes can occur for a number of reasons, the most common being damage from tree roots or physical damage caused by vehicles, landscape installations, or construction.

Signs of septic system failure include:

- A strong odor from the gases that are released during anaerobic decomposition.
- Slow draining pipes or pipes that back up into the home.
- Patches of unusually vibrant vegetation above the leach field.
- Pooling of effluent around the leach field or septic tank.



Effluent rising to the surface above a septic tank or leach field is one sign of septic system failure.



Unusually green vegetation over the leach field is another sign of a septic system that has failed or is about to fail.

Septic system failure best management practices

If you notice any signs of septic system failure, use best management practices (BMPs) until you can get a professional to the property.

- Conserve water until the repair is made.
- Rope or fence off the area where sewage is on the ground to keep people and animals from coming into contact with it.
- Do not cover up the exposed effluent with soil or other material as this may cause sewage to back up into the home.
- Do not pump or redirect exposed effluent to rivers, lakes, or streams, or to abandoned wells or holes. This can lead to significant water quality impairment and it is illegal.
- Call a professional as soon as possible to help correct the problem.



Conserving water is important every day and is especially critical when you suspect a septic system failure!



Call a professional as soon as you suspect a septic system failure!

Contact Information

For more information on septic systems, including permitting and requirements, contact the San Diego County Department of Environmental Health, Land and Water Quality Division at www.sdcountry.ca.gov/deh/ or using the information below.

Central Kearney Mesa Office:
County Operation Center
5500 Overland Ave., Suite 170
San Diego, CA 92123
(858) 565-5173

North County San Marcos Office:
151 East Carmel St.
San Marcos, CA 92078
(760) 471-0730

Section 5 Quiz

1. Septic system failures can occur for all of the following reasons EXCEPT _____.
 - a. Broken pipes in the leach field
 - b. Having the tank pumped too often
 - c. Blockage from non dissolved solids
2. Signs of septic system failure include _____.
 - a. Slow draining pipes
 - b. Patches of unusually vibrant vegetation above the leach field
 - c. Strong odors
 - d. All of the above
3. One septic system failure best management practice is _____.
 - a. Conserving water until repairs are made
 - b. Covering exposed effluent with soil
 - c. Diverting pooling effluent into a trench
4. How much do you think septic systems contribute to local waterway pollution?
 - a. Not at all
 - b. A little bit
 - c. Some of it
 - d. A great deal
 - e. All of the pollution is from septic systems

Septic System Rebate Program

Post-Survey

1. Are you going to tell your neighbors and friends about this rebate program?
 - a. Yes
 - b. No
2. Would you be willing to participate in a follow-up survey in a couple of years to determine if the knowledge you gained from the educational module was remembered?
 - a. Yes
 - b. No
3. Where would you most like to receive information about septic system care and maintenance?
 - a. Magazine or newsletter
 - b. Friend or family member
 - c. Internet
 - d. Workshops/Meetings
 - e. Other _____
4. If the rebate program was offered again in the future, and it was the appropriate time to have your septic system inspected and pumped, would you be interested in participating in the rebate program again?
 - a. Yes
 - b. No
5. For classification purposes, please provide the following information.
 - a. Male
 - b. Female
6. Do you have any other suggestions for how we can improve our program?