



**RESIDENTIAL GRAYWATER IRRIGATION SYSTEMS**  
**CITY OF ENCINITAS DEVELOPMENT SERVICES DEPARTMENT**  
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The purpose of this document is to assist you through the permit process for the addition of residential graywater irrigation systems to existing one- and two-family dwellings. It also provides information about submittal requirements, plan reviews, project inspections and associated fees. For more information, please see the Residential Graywater Irrigation Systems FAQ.

## **I. Definitions**

**Graywater:** Untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes, including but not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but not including wastewater from kitchen sinks, dishwashers, toilets or bidets.

**Clothes Washer System:** A graywater system utilizing discharge exclusively from a single domestic clothes washing machine for landscape irrigation in a one- or two-family dwelling.

## **II. Approval Requirements**

These general rules and regulations apply to one- and two- family residential buildings only. A plumbing permit is required for all graywater irrigation systems. Graywater irrigation requirements can be found in [Chapter 16 of the California Plumbing Code](#). All graywater irrigation systems shall comply with the California Plumbing Code as amended by the City of Encinitas. Additional permits may be required if installation of a system affects electrical (such as pump installation), structural, or mechanical components of the home.

**Exception:** Clothes washer systems or expanded clothes washer systems that comply with all of the following requirements do not require a plumbing permit:

1. The design shall allow the user to direct the flow to the irrigation or disposal field or the building sewer. The direction control of the graywater shall be clearly labeled and readily accessible to the user.
2. The installation, change, alteration or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility. The pump in a clothes washer shall not be considered part of the gray water systems.
3. The graywater shall be contained on the site where it is generated.
4. Graywater shall be directed to and contained within an irrigation or disposal field.
5. Ponding or runoff is prohibited and shall be considered a nuisance.
6. Graywater may be released above the ground surface provided at least two (2) inches (51 mm) of mulch, rock, or soil, or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.
7. Graywater systems shall be designed to minimize contact with humans and domestic pets.
8. Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.
9. Graywater shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.
10. Exemption from construction permit requirements shall not be deemed to grant authorization for any graywater system to be installed in a manner that violates any provisions of the California Plumbing Code (CPC) or any other laws or ordinances of the City of Encinitas.
11. An operation and maintenance manual shall be provided. Directions shall indicate the manual is to remain with the building throughout the life of the system and indicate that upon change of ownership or occupancy, the new owner or tenant shall be notified the structure contains a graywater system.

### III. Submittal Requirements

The following items shall be submitted along with the appropriate fees.

#### A. Plans

**Please upload as one set:**

1. **Plot plan:** The items listed in the table 1602.4 of the CPC, along with the following information is required on the plans.
  - a. Property lines, existing structures, setbacks, and paved areas.
  - b. Drainage slope and direction.
  - c. Location of retaining walls, drainage channels, water supply lines.
  - d. Number of bedrooms and plumbing fixtures.
  - e. Graywater system location, potable water connections, water meters and sewer lines.
2. **Graywater System plan:** Provide a plan showing:
  - a. Graywater tank size and location. Indicate underground or above.
  - b. Graywater tank installation details.
  - c. All water lines draining to the tank.
  - d. All waste pipes draining to the tank.
  - e. Sizes of all waste pipes.
  - f. All valves and backflow devices.
  - g. Irrigation, disposal and mulch basin per CPC section 1602.11.
  - h. Irrigation piping and trenching details.
  - i. Irrigation pipe depth, length and spacing between the pipes.
  - j. Irrigation equipment.

**The following notes shall be included on the plans:**

- Kitchen sink, toilets, bidets and diaper soiled water shall not be in graywater system.
  - No ponding, spray, or exposed runoff of graywater is allowed.
  - All graywater systems must have an air-gap or suitable backflow prevention to protect the potable water system.
  - Graywater is not for root crops or edible portions of food crops.
  - The water piping must be marked as follows per CPC section 601.2 to indicate the following:
    - Potable water (blue or green background):
    - "Caution – Potable Water Line"
    - Non-potable water (Irrigation from a potable source, yellow background):
    - "Caution – Non-potable Water Line"
    - Graywater: "CAUTION: NON POTABLE WATER. DO NOT DRINK"; markings shall be at intervals not to exceed five feet.
3. **Graywater Discharge:** The graywater discharge shall be calculated in accordance with CPC section 1602.8.1.
  4. **Specifications-Manufacturers Manual:** Provide all manufacturers specifications for graywater tank and associated piping including make and model number, size, dimensions and capacity of the tank.
  5. **Soil Absorption Rates and Groundwater Level:**
    - a. The soil absorption rate must be specified on the plans. There are three options for determining the soil absorption rate:
      - Option 1. (Applies to one- and two-family residential only).** Use 0.8 gals/ ft<sup>2</sup>/day (0.030 liters/m<sup>2</sup>/day) specified in CPC table 1602.10 (for irrigation systems that only utilize drip type emitters).

**Option 2.** A letter from a California registered design professional classifying the soil per CPC table 1602.10.

**Option 3.** Absorption rate based on percolation testing by a California registered design professional. Submit a report that includes location of test excavations, logs of test excavations, percolation test method, test results, conclusions and recommendations.

- b. **Groundwater level:** The applicant must provide evidence of groundwater depth. Groundwater level shall be determined and reported by a registered design professional. The depth of the groundwater table shall be a minimum of three feet below the lowest point of discharge in the irrigation/disposal field. A geotechnical report previously prepared by a registered design professional for a site where a graywater system is proposed may contain sufficient evidence regarding groundwater level.

**6. Outside Agency Information**

- a. For projects within the [Olivenhain Municipal Water District \(OMWD\)](#) service area, provide evidence of OMWD approval of the graywater system prior to issuance of the City permit.
- b. Anyone proposing a graywater system must file a [Notice of Intent \(NOI\)](#) with the [San Diego Regional Water Quality Control Board \(Regional Board\)](#). For graywater systems requiring a permit, permit applicants must provide evidence of filing of an NOI with the Regional Board prior to issuance of the City permit.

**IV. Plan Reviews**

City: Plans for graywater systems require a review for compliance with the California Plumbing Code. Structural review may be required for tanks installed above ground. If existing structures or electrical or mechanical systems are affected, or structural or electrical work is required to install the system, additional reviews for these items may be required.

Water Districts:

[San Dieguito Water District \(SDWD\)](#) is a subsidiary district of the City of Encinitas and will review permit applications for graywater systems within the SDWD service area as a part of the City’s internal review process.

For projects within the OMWD service area, applicants must separately submit plans to OMWD for review and approval.

Both water districts require backflow prevention for systems with cross connections to potable water systems, which typically occurs where a graywater system interacts with a home’s irrigation system. Systems with such connection will require additional water district review and fees.

**V. Fees**

City:

Fees for a system that does not require a pump would be:

Plumbing Permit Fee:	\$132.00
Building Item Review:	\$33.00
Permit Issuance Fee:	\$35.50
Overhead Fee:	\$66.17
Public Works/Engineering Fee:	\$33.00
Total:	\$299.67

If a pump is utilized that requires electrical work:

Plumbing Permit Fee:	\$132.00
Electrical Permit Fee:	\$132.00
Building Item Review:	\$66.00
Permit Issuance Fee:	\$35.50
Overhead Fee:	\$120.62
Public Works/Engineering Fee:	\$33.00
Total:	\$519.12

Additional fees apply if mechanical, structural, and/or geological review is required. Inspection is included.

**NOTE: On September 9, 2015, the City Council authorized a waiver of the above fees for the installation of graywater systems in existing one- and two-family dwellings (Resolution 2015-57). Any required fees in excess of the above-listed fees will be the responsibility of the applicant.**

Water Districts:

Please contact the water district serving the subject property for information regarding district requirements, fees and review time for graywater systems.

**VI. Inspections**

A minimum of two plumbing inspections will be required for the graywater system including rough plumbing inspection and final plumbing inspection.