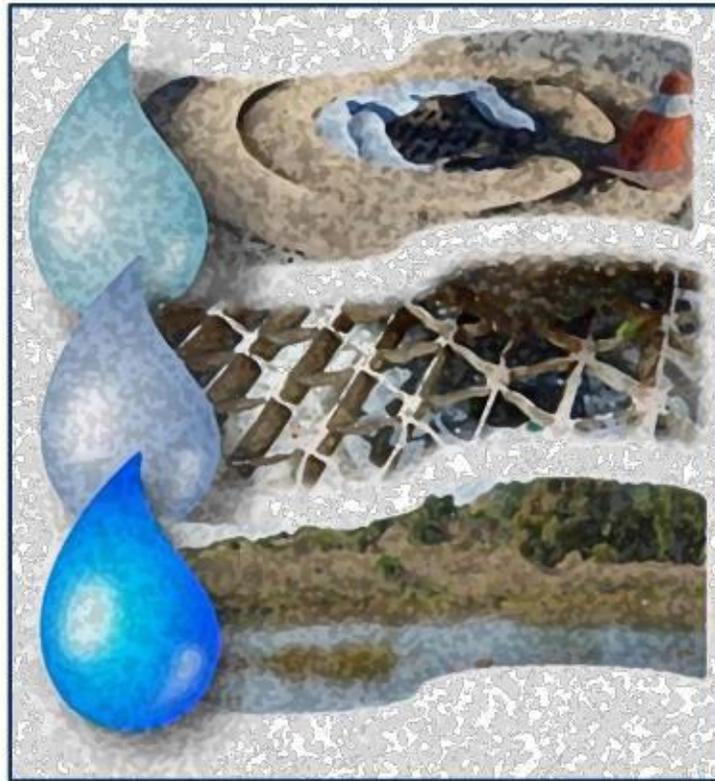




STATEWIDE CONSTRUCTION STORMWATER GENERAL PERMIT

DISCHARGER'S GUIDE

RAINFALL EROSIVITY (R) FACTOR CALCULATOR



Last Revised: December 30, 2020

Rainfall Erosivity (R) Factor Calculator:

The California [Construction Stormwater General Permit](#) requires construction stormwater dischargers to determine each construction site's overall risk to water quality, which is separated into two elements – sediment risk and receiving water risk. The site sediment risk is determined by multiplying the rainfall erosivity (R), soil erodibility (K), and length-slope (LS) factors from the Revised Universal Soil Loss Equation to obtain an estimate of site-related soil loss.

The Construction Stormwater General Permit requires dischargers to use the United States Environmental Protection Agency (EPA) [Rainfall Erosivity Factor Calculator](https://lew.epa.gov/) (https://lew.epa.gov/) to determine a construction site's site-specific R factor. In November 2020, California Water Board staff was notified that the Rainfall Erosivity Factor Calculator only calculates an R factor for up to one year of construction activity due to recent EPA changes to the calculator. Therefore, recent use of the EPA Rainfall Erosivity Calculator will result in an incorrect output for a site's sediment risk for multi-year construction projects.

The following guidance demonstrates how a site's R factor can be correctly calculated using the current version of the EPA's Rainfall Erosivity Calculator.

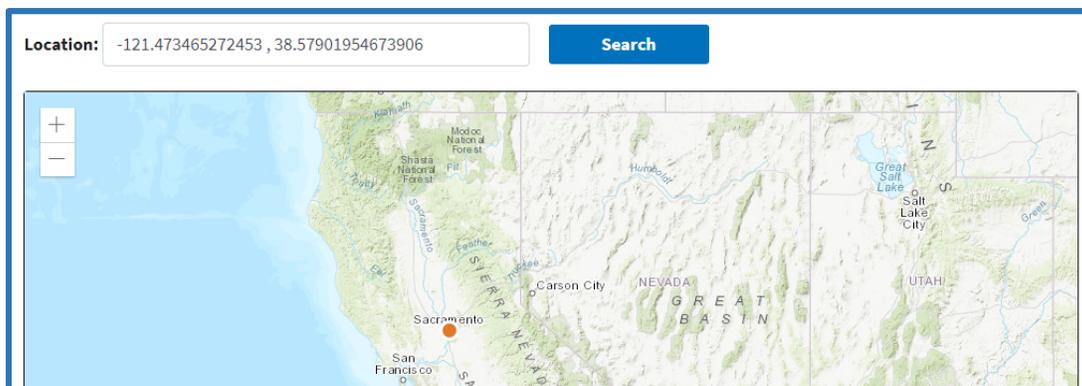
For sites with construction activities spanning one year or less:

1. Input the estimated start and end dates of construction in "mm/dd/yyyy" format. (For construction projects that span multiple years, perform separate R factor calculations for each year of planned construction activities, as demonstrated further in this guidance document.)

Note: The period of construction activity begins at initial earth disturbance, including the vertical build, and ends with final stabilization of the site.

Start Date: 11/01/2020	End Date: 10/31/2021
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2. Locate the construction site by entering the address or latitude and longitude into the Location box; or use the map to zoom in and click on site location.



3. Click the “Calculate R Factor” button to calculate an R factor for the construction site.



4. The R-factor output will display as shown below.

Facility Information

Start Date: 11/01/2020	Latitude: 38.5790
End Date: 10/31/2021	Longitude: -121.4735

Calculation Results

Rainfall erosivity factor (R Factor) = **45.49**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

For sites with construction activities spanning multiple years:

1. For construction projects that span multiple years, repeat the R factor calculation for each additional year (or portion of a year) that construction activities are planned to occur. An example is provided on page 3.

Note: For leap years, such as 2020, the Rainfall Erosivity Factor Calculator’s calendar year ends on December 30 and will fail to calculate an R factor if December 31 is used. Non-leap years still end on December 31.

2. To determine the site’s overall R factor, sum the separate R factors (see example on page 3). The site’s overall R factor is used to determine the project sediment risk to be included in the Notice of Intent that the discharger submits into the Stormwater Multiple Application and Report Tracking System.

For example, a project that starts construction activity on November 1, 2020 and completes final stabilization on December 28, 2022 would be separated into the following construction periods:

Start Date: 11/01/2020	End Date: 10/31/2021
Start Date: 11/01/2021	End Date: 10/31/2022
Start Date: 11/01/2022	End Date: 12/28/2022

Each period results in the following R factor outputs:

Facility Information

Start Date: 11/01/2020	Latitude: 38.5790
End Date: 10/31/2021	Longitude: -121.4735

Calculation Results

Rainfall erosivity factor (R Factor) = **45.49**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

Facility Information

Start Date: 11/01/2021	Latitude: 38.5790
End Date: 10/31/2022	Longitude: -121.4735

Calculation Results

Rainfall erosivity factor (R Factor) = **45.49**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

Facility Information

Start Date: 11/01/2022	Latitude: 38.5790
End Date: 12/28/2022	Longitude: -121.4735

Calculation Results

Rainfall erosivity factor (R Factor) = **14.16**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

Therefore, the site's overall R factor between November 1, 2020 and December 28, 2022 would be:

$$\text{Overall R Factor} = 45.49 + 45.49 + 14.16 = 105.14$$

Input 105.14 for the R factor in the Notice of Intent.