**GENERAL PAIRING PROCEDURE**

See [Cannabis Cultivation Policy Staff Report](https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/staff_report_with_appendices.pdf) page 62 for description of factors.

## Hydrograph

Hydrological similarity is found using normalized annual hydrographs for each gage and HUC12 pair. The sum of absolute differences in mean monthly flows as a proportion of mean annual flow, are compared to arrive at a correlation.

**Hydro** **correlation** =

**HydroMatch** =

## Proximity

Proximity is simply spatial distance between the gage and the centroid of the HUC12 polygon, found using Pythagorean theorem, using projected coordinates and expressed in 1000s of meters.

**Distance** =

Once the calculation is performed for every pair, each HUC12 will have a gage that is the least distant from it (although this may not be the best match overall). This is the minimum distance (MinDist) used below.

**DistanceFactor** =

For Distance < 150:

(MinDist ÷ Distance) **^ 0.05**

Distance < 250:

(MinDist ÷ Distance) **^ 0.15**

Distance > 250.00000001

(MinDist ÷ Distance) **^ 0.4**

## Drainage Area

Drainage area is simply the ratio of the drainage area of the HUC12 stream segment to the drainage area of the gage.

**Area (with factor) =**

For Areagage < Areahuc12 :

^0.02

For Areagage > Areahuc12 :

## HUC Differential

The difference of the HUC12 number of the watershed containing the compliance gage and the HUC12 number of the watershed to be paired to a gage.

**Difference =**

**HUC\_Differential** **=**

For Difference = 0:

1

For Difference ≠ 0:

## PercentMatch =

(HydroMatch) (DistanceFactor) (Area) (HUC\_Differential)