1. Explore precipitation data.
   1. Compare and contrast the rain event in each location. How long did each last? Were the patterns similar? How about the total amount of precipitation?
   2. Why is it interesting to look at rain intensity? What do you notice about the rain intensity over time and across the two watersheds?
2. Explore stream flow rate data (hydrograph).
   1. What were the baseflow rates in each stream? What might explain the difference in baseflow?
   2. What do you notice about stream flow rates after the rain started?
   3. How does flow the next day compare to flow before the storm? What might explain the differences in flow?
   4. What are the main differences you notice in stream flow or hydrograph of the two watersheds over the course of and after the rain event?
3. Explore stream discharge data.
   1. Which watershed had more total discharge, and why do you think that was the case?
4. Calculate and explore runoff ratios. Enter your calculations in the table below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Rain Gauge** | | | |
|  |  |  | Oregon Ridge |  | Jones Falls 14 |
|  |  |  | **Watershed** | | | |
| **Line** | **Units** | **Explanation** | Baismans Run |  | W. Herring Branch Run |
| A | sq mile / watershed | Watershed area | 1.47 |  | 2.13 |
| B | sq ft / sq mile | Conversion factor (sq mile to sq ft) | 27,878,400 |  | 27,878,400 |
| C | sq ft/watershed | Calculated: A \* B |  |  |  |
| D | Total PCP (inches) | Measured cumulative total rain depth from rain gauge |  |  |  |
| E | Total PCP (feet) | Calculated (D/12) |  |  |  |
| F | cu ft precip | Calculated total volume of water entering watershed in rain event: C \* E |  |  |  |
| G | Total stream discharge (cu ft) | Measured cumulative total volume of water leaving watershed during and after rain event from stream gauge |  |  |  |
| H | runoff ratio | Calculated G / F |  |  |  |

* 1. First, compare the total amount of precipitation that entered each watershed during the storm. Why were they different?
  2. Second, compare total amount of water leaving as stream discharge. Why were they different?
  3. Finally, compare the runoff ratios. What does the runoff ratio tell us about what happened to the water that entered each watershed in the rain event? How might you explain differences in runoff ratios between the two watersheds?