CEE3430 Engineering Hydrology
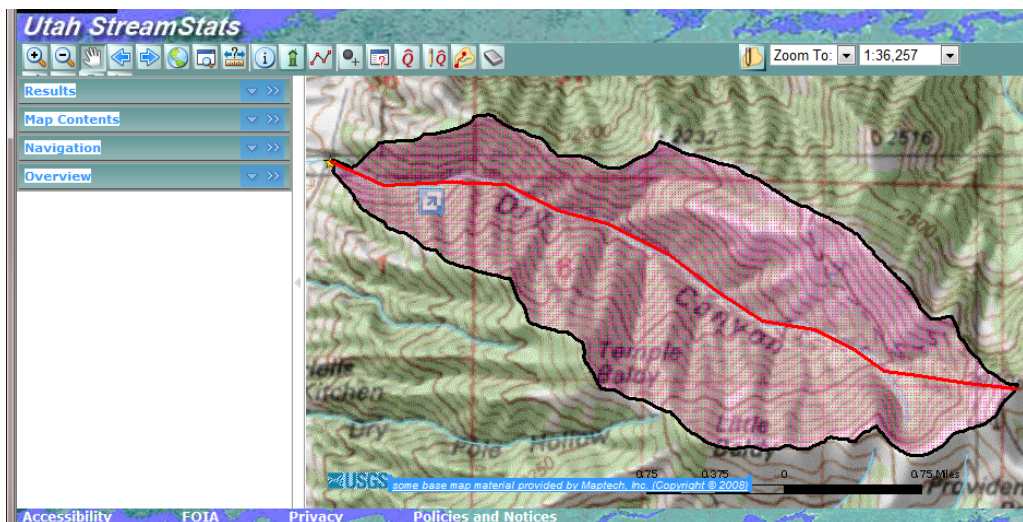
Homework 7. Surface Runoff

Objective. The objective of this homework is to gain experience in hydrologic analysis using unit hydrograph methods.

1. Mays 8.2.6

2. Mays 8.3.1

3. Mays 8.3.2

4. Mays 8.3.6

5. Mays 8.4.1

6. Consider Logan Dry Canyon with the following watershed properties determined from StreamStats

A=3.58 mi^2, L=4 mi, L$_{ca}$=2 mi

Assume
C$_t$=1.5, C$_p$= 0.8

Find the peak discharge Q$_p$, the basin lag time t$_p$, and the time base of the unit hydrograph T$_b$ using Snyder's method. (Follow Mays pages 338-339 and Table 8.4.1.) Find the corresponding duration of rainfall D, and sketch the Snyder unit hydrograph.

7. Mays 8.5.4