

CVEN 627 “Engineering Surface Water Hydrology”

HOMEWORK 3

Assigned 4/6/06

Due 4/17/06

1. Dingman, Problem 7-9, p. 323
2. Using the soil and meteorological conditions from the above problem, the Penman equation (eqn. 7-33), and equations 7-43, 7-44, and 7-45, determine the graph of soil-limited evaporation rate versus time for the given soil (as in Figure 7-8a). Assume that the soil moisture content begins at field capacity, and the upper 5 cm of soil is the relevant soil layer. In order to determine the value of t_1 , assume that stage-1 evaporation ends when soil water content in this upper layer reaches

$$\theta_{wp} + \frac{1}{4}(\theta_{fc} - \theta_{wp}).$$

3. Dingman, Problem 7-11, p. 323-324
4. Dingman, Problem 5-3, p. 219
5. Dingman, Problem 5-4, p. 219