

Winter School at UACEG

Topic: Hydraulic structures. Dams and reservoirs

Task for Students #3:

Spillway capacity calculations and design flood routing

Explanations and Example

Tutor: Assoc. Prof. Maria Mavrova

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University of Nis



Strengthening of master curricula in water resources management
for the Western Balkans HEIs and stakeholders

Exercise #2

Input data:

b= 20 m – spillway wide

n= 1 – number of opening

H=2 m – spillway water level

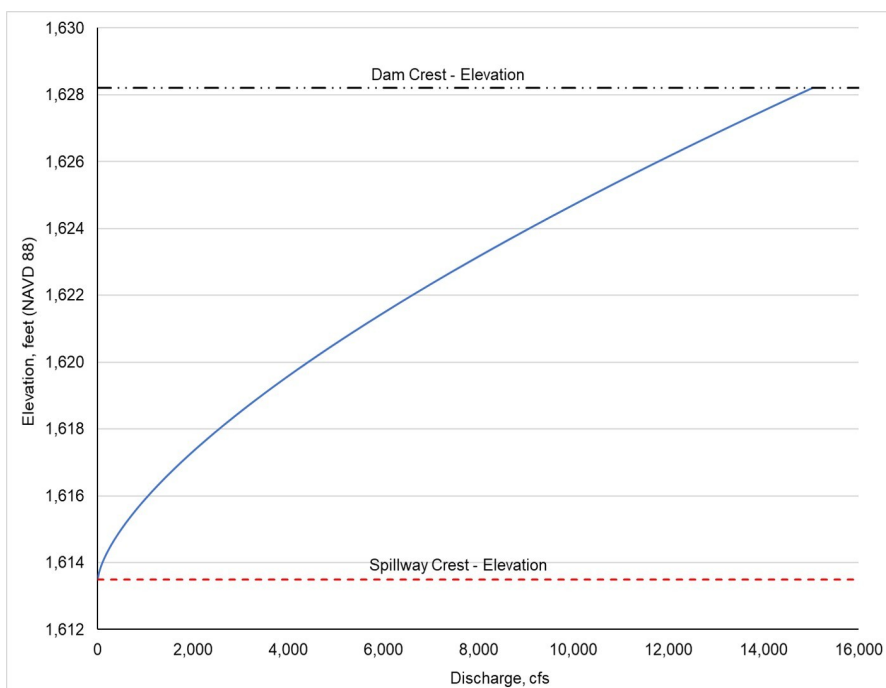
Please solve the spillway equation in a table as you start with H=0 to H=Hmax! After that draw a rating curve!

$$Q = m \sum b \sqrt{2gH^2}^{\frac{3}{2}}$$

Spillway Level-Discharge: Node A1

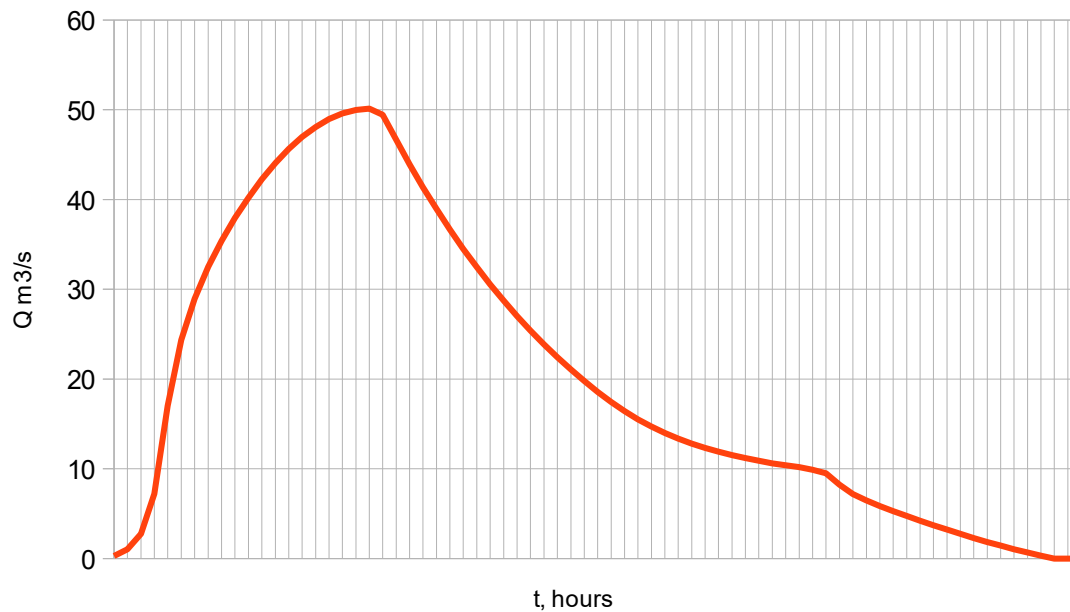
	US level m	Discharge m ³ /s
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

OK Graph Cancel



Please solve the balance equation and define the V_{ret} !

Inflow hydrograph



$$Q_p = 50,12 \text{ m}^3/\text{s}$$

$$V_{in} = 5279906 \text{ m}^3$$

$$V_{spill} = 0,5Q_{max, spill}(t_1 + t_2)$$

$$\Delta V = V_{ret} = V_{in} - V_{spill}$$