

ABSTRACT

SIMULATED PROFILES OF WATER AT THE KARANG WEIR USING THE PROGRAM *HEC-RAS 4.1.0*

By :
Aris Kurniawan
NIM : 08510131005

Karang weir which located at Bantul regency functioned to fulfill the irrigation needs in Donotirto village, Kretek distric. *HEC-RAS 4.1.0*. is the computer application program that used to modeled the river flow, River Analysis System (RAS), made by Hydrologic Engineering Center developed by U.S Army Corps of Engineers and available since January 2010. The propose of this simulation is to compare how *HEC-RAS 4.1.0*. worked to simulate the upper side profile of water at the upper course of Karang weir with the upper side profile of water count with continual standard method at upper course of Karang weir counted by Muhammad Arif Janatun.

The object that have been used in this upper side water profile was taken from irrigation network rehabilitation planning data at Karang weir Donotirto village, Kretek distric, Bantul regency. River data : river length cut 141 m, wide 32 m, river bottom evaluation + 1,80, dam's tower evaluation + 8,30, effective weir length 32 m, manning number 0,025 and 0,04, Cd 0,544, flood debit 118 m³/second. The result of running *HEC-RAS 4.1.0* will compare with the upper side profile of water count with continual standard method at upper course of Karang weir counted by Muhammad Arif Janatun.

Upper side water profile at upper course of Karang weir counted by *HEC-RAS 4.1.0* program at station P0 = (+) 9,99 m, station P1 = (+) 10,01 m, station P2 = (+) 10,01 m, station P3 = (+) 10,02 m, station P4 = (+) 10,02 m, station P5 = (+) 10,03 m, station P6 = (+) 10,03 m, station P4 = (+) 10,03 m. the result of *HEC-RAS 4.1.0* program is just a straight line and the water heights above the dam's tower cannot appeared curve like it going to be. *HEC-RAS 4.1.0* program cannot count the distance until the normal depth. *HEC-RAS 4.1.0* program result of upper side water profile at upper course of Karang weir appeared M₁.

Keyword : *Karang weir, profiles of water , HEC-RAS 4.1.0*