



Determination of first flush criteria from an urban residential area and a transportation land-use area

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Received 10 January 2011; Accepted revised 20 April 2011

ABSTRACT

This study was conducted to identify the magnitude of first flush in a city residential area and a transportation land-use area and to provide basic information related to the criteria of stormwater runoff management. Stormwater runoff was monitored at two separate urban watersheds, which were chosen to represent the distinct types of a residential area and a transportation land-use area. 25 storm events were monitored to investigate the first flush phenomena. The first flush criterion was determined by dynamic EMC and mass-first-flush ratio (MFF_n) methods. It was assessed to be 5.5 mm in the residential area and 2.8 mm in the transportation land-use area according to the MFF_n method (median value). The magnitude of the first flush phenomenon was assessed to be 6.5 mm in the residential area and 6.8 mm in the transportation land-use area according to dynamic EMC.

Keywords: Dynamic EMC; MFF_n; First flush; Nonpoint source; Rainfall; Runoff

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