



Urban Runoff Characteristics in Tehran, Iran

M. Kamali¹, S. Ghazvinizadeh², M. Tajrishy³, M. Kayhanian⁴

¹ MSc. Graduate Student, Sharif University of Technology, Tehran, Iran, meisamkamali63@yahoo.com

² PhD Student, Sharif University of Technology, Tehran, Iran, so.ghazvini@gmail.com

³ Associate Professor, Sharif University of Technology, Tehran, Iran, Tajrishy@sharif.edu

⁴ Research Professor, University of California, Davis, California, U.S.A., mdkayhanian@ucdavis.edu

ABSTRACT

This paper presents the general and first flush characteristics of 14 wet weather runoff qualities in Tehran, Iran during 2008-2011. Flow and runoff samples were collected from different surface types that include rusted and galvanized iron roofs, asphalt street, urban streams and storm channel collection systems. The results showed that Event Mean Concentration (EMC) of dissolved pollutants such as nitrate ($\text{NO}_3\text{-N}$) and phosphate (PO_4) were higher in streams with base flow whereas dissolved metals such as Zn were about 30 times higher in galvanized roof and asphalt surface runoffs. Large EMC variability in total suspended solids (TSS) were observed in measured samples ranging from 80 to 1720 mg/L. Stronger and frequent first flush was observed for TSS as well as dissolved pollutants in smaller drainage areas compared with larger drainage areas.

KEYWORDS

Urban Runoff, Pollution, Event Mean Concentration, First Flush, Tehran.