Journal of Applied Geochemistry
Vol. 20, No. 1 (2018). pp. 91-102

DRAINAGE BASIN PARAMETERS OF BAGH RIVER, A SUB-BASIN OF NARMADA RIVER, CENTRAL INDIA:ANALYSIS AND IMPLICATIONS

S. Singh[1], S. Kumar[1], P. Mittal[1], S. Kanhaiya[1]*, P. Prakash[1], R. Kumar[2]
[1]*CAS in Geology, Institute of Science, Banaras Hindu University, India*
[2]*CSIR- Central Institute of Mining and Fuel Research, India-826015*
**Email: shyamkanhaiya44@gmail.com*

Abstract

The present study is aimed at characterization of the drainage network of Bagh River, a sub-basin of Narmada River, Central India. For above purpose a detailed morphometric analysis of Bagh River has been done by using SRTM data at a resolution of 90×90m using Arc GIS 10 software. The Bagh River covering an area of 1812 km^2, a perimeter of 179.33 km has a basin length of 59.36 km. Morphometric analyses indicate dominance of first order streams (n=128) ranging up to fifth order. The river has high value of basin relief, high surface run-off, high sediment transport, low infiltration rate coupled with a less elongated nature of the basin. The drainage patterns are mostly dendritic in nature and the average value of bifurcation ratio is 3.84 for this basin reveals that the drainage patterns are not influenced by geological structures in the basin area like lineaments and faults. The drainage density shows a highly permeable rock type, dense vegetation and coarse drainage texture for the area. The morphometric parameters their hydrological significance for planning the water resource management during precipitation.

Keywords: Bagh River,Narmada River, Central India, Bifurcation ratio, SRTM data.