

**KAJIAN HIDROGEOMORFOLOGI MATAAIR  
DI SUB-DAERAH ALIRAN SUNGAI NGRANCAH, KABUPATEN  
KULON PROGO**

*Oleh*

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**INTISARI**

Penelitian ini mengkaji tentang pemunculan mataair yang dikaitkan dengan kondisi geomorfologi di Sub-DAS Ngrancah, Desa Hargotirto, Kecamatan Kokap, Kabupaten Kulon Progo. Sub-DAS Ngrancah berada di Perbukitan Struktural Kulon Progo yang bertopografi berbukit hingga bergunung dengan material formasi batuan penyusun yang cukup beragam. Airtanah di daerah kajian relatif sulit didapat sehingga masyarakatnya banyak memanfaatkan rembesan dan mataair yang banyak keluar di lokasi kajian dan banyak dipengaruhi oleh kondisi geomorfologi daerah kajian. Tujuan penelitian ini adalah menentukan karakteristik dan pola sebaran mataair di Sub-DAS Ngrancah serta mengetahui faktor hidrogeomorfologi yang mengontrol pemunculan dan karakteristik mataair di Sub-DAS Ngrancah.

Metode penelitian yang digunakan adalah metode survei, yaitu dengan melakukan pengamatan mataair di musim kemarau dan hujan serta lingkungan sekitar mataair, dan pengukuran debit mataair di lokasi kajian. Metode lainnya adalah olah data sekunder baik citra, Peta RBI, dan Peta Geologi. Hasil yang didapat diolah dan dianalisis secara deskriptif kuantitatif mengenai debit mataair, asosiatif mengenai hubungan karakteristik geomorfologi dengan pola sebaran dan karakteristik mataair, dan analisis komparasi spasial mengenai faktor geomorfologi yang mengontrol pemunculan dan karakteristik mataair.

Hasil penelitian menunjukkan bahwa pemunculan mataair di Sub-DAS Ngrancah cenderung menyebar di bagian barat daya DAS dan mengelompok pada bagian timur, timur laut, dan utara DAS. Debit mataair di Sub-DAS Ngrancah berada pada kelas V (1-10 l/detik) hingga VIII (<10 ml/detik), dengan tenaga pemunculan gravitatif berjenis mataair pada batuan kedap, mataair kontak, dan mataair depresi. Sifat pengaliran mataair di Sub-DAS Ngrancah adalah *perennial* dan *intermitten*. Faktor hidrogeomorfologi yang mengontrol pemunculan dan karakteristik mataair adalah kontak batuan gamping dan vulkanik tua, struktur retakan batuan vulkanik tua, dan perubahan lereng kelas curam (20,01-55 %) hingga sangat curam (55,01-140 %).

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**Kata kunci:** Hidrogeomorfologi, mataair, Daerah Aliran Sungai,

## **THE HYDROGEOMORPHOLOGY STUDY OF SPRINGS IN SUB-WATERSHED OF NGRANCAH, KULON PROGO REGENCY**

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### **ABSTRACT**

*This research focuses on spring occurrence that is linked to geomorphology situation in sub-watershed of Ngrancah, Hargotirto, Kokap sub-district, Kulon Progo regency. Ngrancah sub-watershed is located in Structural hills of Kulon Progo that has hilly to mountainous topography with various formation material of framer rock. Groundwater in the study area is difficult to obtain, most of the people use seepage and spring that emerge around the area and influenced mostly by geomorphology situation. The aims of this research are defining characteristics and spring distribution pattern of Ngrancah Sub-watershed and knowing the hydrogeomorphology factors that control the emergence and the characteristic of springs in sub-watershed of Ngrancah.*

*The method used in this research is survey which was done by observing springs in dry and rainy season also its surrounding environment, and measuring the springs debit of the study area. Besides, this research also done by processing secondary data whether in the form of Google Earth satellite image, RBI map, and geology map. The data is processed and analyzed with descriptive quantitative method for spring debit, associative method for geomorphology characteristic relation with spring distribution pattern and its characteristics, as well as spatial-comparative method for geomorphology factor that control the spring emergence and characteristic.*

*The reasearch shows that the spring emergence in Ngrancah sub-watershed is tend to spread on the west of watershed and tend to be in line with break of slope and contact of Kebobutak formation, andesit tua, and Jonggrangan formation that located in east to north of watershed. The spring debit of Ngrancah sub-watershed categorized in V to VIII class with the gravitative emergence energy is spring on impervious rock spring, contact spring, and depression spring. The spring stream character in Ngrancah sub-watershed are perennial and intermitten. The hydrogeomorphology that control the emergence and the characteristic of spring are the contact between tertiary volcanic rock and limestone, volcanic rock's fissure structure, as well as slope difference of steep class (20,01-55 %) until very steep class (55,01-140 %).*

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**Keywords:** *hydrogeomorphology, spring, watershed*