

**TEKNIK KONSERVASI MATA AIR SEBAGAI SUMBER AIR DOMESTIK  
DI DUSUN DUWET, DESA PURWODADI, KECAMATAN TEPUS,  
KABUPATEN GUNUNG KIDUL, D.I. YOGYAKARTA**

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**INTISARI**

Air merupakan salah satu kebutuhan penting bagi manusia. Dusun Duwet, Desa Purwodadi, Kecamatan Tepus termasuk kawasan ekosistem karst dengan tingkat kelangkaan air tinggi di Kabupaten Gunung Kidul. Ketersediaan air dari potensi mata air di daerah tersebut sebenarnya dapat dikatakan cukup untuk memenuhi kebutuhan domestik warga pada musim kemarau walaupun debitnya lebih kecil dibandingkan pada waktu musim penghujan. Namun pada musim kemarau warga mengantri untuk mendapatkan air maupun membeli air dari truk tangki, oleh karena itu penulis tertarik melakukan penelitian untuk mengetahui karakteristik dan potensi mata air serta arahan pengelolaan mata air yang tepat.

Metode yang digunakan meliputi survei dan pemetaan lapangan untuk mengetahui karakteristik mata air, matematis untuk menghitung potensi mata air, evaluasi hasil, dan wawancara kebutuhan air. Karakteristik mata air yang dikaji meliputi sebaran, tipe mata air berdasarkan debit dan karakteristik akuifer meliputi analisis porositas batuan dan konduktivitas hidrolis. Potensi mata air diketahui dari kuantitas (debit) dan kualitas air. Kualitas air diketahui melalui analisis uji laboratorium. Parameter yang digunakan meliputi sifat fisik (warna, bau, rasa, kekeruhan), sifat kimia (pH, TDS, BOD, COD, Nitrat, Nitrit, Kesadahan, Magnesium, Kalsium, Besi, Klorida), dan sifat biologi (*Total Coliform*) yang mengacu pada Permenkes No. 32 Tahun 2017 Tentang Standar Baku Mutu Kesehatan Lingkungan dan Persyaratan Kesehatan Air Untuk Keperluan Higiene Sanitasi, Kolam Renang, *Solus Per Aqua*, dan Pemandian Umum.

Ketiga mata air yaitu Kaliwonosari, Kaliduren, dan Luweng Nglibeng termasuk mata air per lapisan/kontak dengan sifat pengaliran menahun (*perennial springs*). Tipe mata air berdasarkan kelas debit mata air Kaliwonosari dan Kaliduren termasuk dalam kelas sedang, sedangkan mata air Luweng Nglibeng termasuk dalam kelas tinggi. Kualitas air dari ketiga mata air tergolong baik, namun jika dikonsumsi harus dimasak terlebih dahulu karena mengandung total *coliform* tinggi. Berdasarkan perbandingan debit air dan kebutuhan air, kuantitas dari ketiga mata air masih mencukupi kebutuhan domestik warga karena pengukuran dilakukan pada musim penghujan sampai dengan peralihan menuju musim kemarau. Namun menurut keterangan warga pada musim kemarau ketiga mata air masih dapat mengalirkan air dengan debit terbesar pada mata air Luweng Nglibeng. Konservasi mata air dilakukan secara vegetatif (penanaman jati, mahoni, sengan laut dan rumput vertiver), secara teknik (pembuatan teras bangku dan sarana Perlindungan Mata Air (PMA)) dengan pendekatan berbasis masyarakat dan pemerintah.

Kata Kunci : Mata Air, Karakteristik Mata Air, Potensi Mata Air, Daerah Imbuhan, Perlindungan Mata Air, Teras Bangku.

***SPRINGS CONSERVATION TECHNIQUE AS DOMESTIC WATER SOURCES  
IN DUWET HAMLET, PURWODADI VILLAGE, TEPUS DISTRICT, GUNUNG  
KIDUL REGENCY, D.I. YOGYAKARTA***

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**ABSTRACT**

*Water is an important requirement for humans. Duwet Hamlet, Purwodadi Village, Tepus District including the karst ecosystem area with high water scarcity in Gunung Kidul Regency. The availability of water from the potential springs in the area can actually be said to be sufficient to meet the domestic needs of residents in the dry season even though the discharge is smaller than during the rainy season. But in the dry season people queue to get water or buy water from tank trucks, therefore the authors are interested in conducting research to find out the characteristics and potential of springs and the direction of proper spring management.*

*The method used includes survey and field mapping to determine the characteristics of springs, mathematically to calculate potential springs, evaluate results, and interview water needs. The characteristics of the springs studied include distribution, type of springs based on discharge and aquifer characteristics including analysis of rock porosity and hydraulic conductivity. Potential springs are known from quantity (discharge) and water quality. Water quality is known through laboratory test analysis. Parameters used include physical character (color, odor, taste, turbidity), chemical character (pH, TDS, BOD, COD, Nitrate, Nitrite, Hardness, Magnesium, Calcium, Iron, Chloride), and biological character (Total Coliform) referring to Permenkes No. 32 of 2017 concerning Standards of Quality for Environmental Health and Health Requirements for Water of Hygiene Sanitation Needs, Swimming Pools, Solus Per Aqua, and Public Baths.*

*The three springs are Kaliwonosari, Kaliduren, and Luweng Nglibeng including perenial springs. The spring type is based on the Kaliwonosari and Kaliduren spring discharge classes which are in the middle class, while the Luweng Nglibeng spring is included in the high class. The water quality of the three springs is good, but if consumed it must be cooked because it contains high total coliform. Based on the comparison of water discharge and water requirements, the quantity of the three springs is still sufficient for the domestic needs of the residents because the measurements are carried out in the rainy season until the transition to the dry season. However, according to residents' information, during the dry season the three springs were still able to drain water with the largest discharge in the Luweng Nglibeng spring. Springs conservation is carried out vegetatively (planting tectona grandis, mahogany, sea sencion and vertiver grass), technically (making bench terraces and means Springs Protection (PMA)) with community based and government approaches.*

***Keywords: Spring, Spring Characteristics, Potential Springs, Compound Areas, Springs Protection, Bench Terrace.***