

## ABSTRACT

**Aries Nur Sandy, 2024.** *Perencanaan Pengembangan Sistem Jaringan Distribusi Air Bersih Di Desa Manding Daya Kecamatan Manding.* Skripsi, Program Studi Teknik Sipil, Fakultas Teknik Universitas Wiraraja. (Pembimbing I: Ach. Desmantri Rahmanto, ST., MT., Dan Pembimbing II: Dedi Falahuddin, ST., MT.,)

Kebutuhan air bersih terus meningkat dengan jumlah penduduk yang terus bertambah. Khususnya Desa Manding Daya mempunyai 3 Dusun yaitu Dusun Gua, Dusun Tobato, Dusun Manding, saat ini Desa Manding Daya terdapat jumlah penduduk 1334 Jiwa dari 442 Kepala Keluarga dengan anggota Laki-Laki 659 dan Perempuan 675. Meskipun ketersediaan air cukup memadai tetapi cara menyalurkan dari sumber air masih relative terbatas sehingga belum dapat memenuhi semua kebutuhan air secara merata. Tujuan penelitian Mengetahui jumlah debit air yang dibutuhkan untuk mengalir setiap pemukiman warga Dusun Gua Desa Manding Daya secara merata , Mengetahui perencanaan jaringan distribusi air bersih yang sesuai analisis menggunakan *software EPANET 2.0*. Dalam menjawab permasalahan tersebut, penelitian menggunakan penelitian kuantitatif dengan Exponensial, Elevasi Distribusi Air dan *E-Panet*.

Metode yang dipakai dalam penelitian ini yaitu metode analisis deskriptif dan kuantitatif. Teknik analisis data yang dilakukan untuk skema jaringan air bersih menggunakan program *Epanet 2.0* dengan data input peta, pipa, dan node

Hasil yang diperoleh berupa debit kapasitas sebesar 0,238 L/detik, sedangkan kebutuhan total air bersih 2,7997 L/detik, desain hidrolis reservoir dengan kapasitas 60 m<sup>3</sup>, dan alur jaringan distribusi dengan program *Epanet 2.0* yang dimulai dari inlet, reservoir hingga sambungan rumah.

**Kata Kunci : Distribusi Air, Kebutuhan Air dan Debit Air.**

## ABSTRACT

**Aries Nur Sandy, 2024.** *Planning for the Development of a Clean Water Distribution Network System in Manding Daya Village, Manding District.* Thesis, Civil Engineering Study Program, Faculty of Engineering, Wiraraja University. (Supervisor I: Ach. Desmantri Rahmanto, ST., MT., And Supervisor II: Dedi Falahuddin, ST., MT.,)

The need for clean water continues to increase with the increasing population. Especially Manding Daya Village has 3 hamlets, namely Gua Hamlet, Tobato Hamlet, Manding Hamlet, currently Manding Daya Village has a population of 1334 people from 442 Heads of Families with 659 Male members and 675 Female members. Although the availability of water is quite adequate, the method of distributing it from water sources is still relatively limited so that it has not been able to meet all water needs evenly. The purpose of the study was to determine the amount of water discharge needed to flow evenly through each settlement of Gua Hamlet, Manding Daya Village, and to determine the planning of a clean water distribution network that is in accordance with the analysis using EPANET 2.0 software. In answering these problems, the study used quantitative research with Exponential, Water Distribution Elevation and E-Panet.

The method used in this research is descriptive and quantitative analysis methods. The data analysis technique carried out for the clean water network scheme uses the Epanet 2.0 program with map, pipe and node input data.

The results obtained are a discharge capacity of 0.238 L/second, while the total need for clean water is 2.7997 L/second, a reservoir hydraulic design with a capacity of 60 "m" ^"3", and a distribution network flow with the Epanet 2.0 program starting from the inlet , reservoir to house connection.

**Keywords: Water Distribution, Water Needs and Water Discharge.**