

**PENENTUAN *CONFINED AQUIFER* DENGAN
MENGUNAKAN METODE GEOLISTRIK UNTUK
PENGEBORAN AIR TANAH DALAM DI
UNIVERSITAS NEGERI PADANG**

LAPORAN TEKNIK

Sebagai Salah Satu syarat untuk Menyelesaikan Program
Profesi pada Program Studi Program Profesi Insinyur
Program Pasca Sarjana Universitas Andalas

RUSLI HAR

NIM 2241612059

PEMBIMBING :

Prof. Dr. Ir. James Hellyward, MS, IPU, ASEAN Eng



**Program Studi Pendidikan Profesi Insinyur, Sekolah
Pascasarjana, Universitas Andalas.
2023**

ABSTRACT

The problem that arises with the development of UNP is the need for large amounts of clean water. From the analysis results, the need for clean water to serve all activities at UNP is $550 \text{ m}^3/\text{day}$ or the equivalent of 6.4 liters/second. On the other hand, the available water sources are inadequate in quantity and quality to serve all existing activities and facilities. Therefore, a new water source is needed that comes from deep ground water or water located in the confined aquifer zone. To determine the existence and condition of groundwater, an initial investigation was carried out using the geoelectric survey method and prepared a drilling plan and prepared a cost budget. From the results of investigations, geologically, hydrogeologically and in correlation between lithologies, it was found that the confined aquifer system at UNP is divided into three systems, namely: Confined aquifer system I (10 – 45 m) in the East-South and North parts continuing to the West. Aquifer System II (55 – 130 m) in almost the entire UNP area, and Aquifer System III (70 – 130 m) in the western part. To obtain a water discharge of 6.4 liters/second, drilling can be carried out to a depth of 250 m with a diameter of 10 inches and a submersible pump diameter of 6 inches. The costs required are Rp. 1,519,672,550,-

Keywords: Confined, Unconfined Aquifer, Aquifer System, Geoelectric, and Submersible Pump

